COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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Jared Polis, Governor

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TO: Colorado Water Conservation Board Members

FROM: Chris Sturm, Stream Restoration Coordinator

DATE: January 28, 2019

AGENDA ITEM: 6. Colorado Watershed Restoration Program – Grant Funding Recommendations

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Background: The Colorado Watershed Restoration Program (CWRP) is designed to provide planning and project implementation funding for watershed and stream restoration and protection efforts. The program supports stakeholder driven collaboratives committed to restoring and protecting the ecological processes that connect land and water. The CWRP guidance document and application was approved by the Board in September of 2008. The Board approved revisions to the program in May 2012 and July 2015. The latest revision requires board approval for applications greater than $100,000. It also added Stream Management Plans (SMP) as a grant type. Other grant types include Watershed/Stream Restoration, Flood Mitigation, and Monitoring grants.

Discussion: Staff received 29 applications by the November 2, 2018 deadline. Each application was scored by a minimum of five staff members. Stream Management Plan applications were scored by seven staff members, including a representative from CPW. Twelve applications requested funding greater than $100,000. Table 1 (attached below) depicts the applicants, location, project title, funding request, and recommended funding amount. There is a description of the other seventeen applications in the Director's report. The CWRP guidance document is attached after Table 1.

The total funding request for the twelve applications is $2,960,300. All twelve applications are recommended for full funding.

The application summary sheets are included after the CWRP guidance document. They are followed by the full applications including the scopes of work. The summary sheets and applications are organized by grant types: Watershed/Flood/Monitoring followed by SMPs. They are further organized by basin within the grant types.

Issues/Additional Needs:
SMP grantees must demonstrate that the planning effort put as much or more emphasis on environmental and recreational water needs as it does on other water uses.

All CWCB funding awards are contingent upon applicant's ability to secure match funding.

All grantees should adhere to their organizational procurement policies when hiring contractors and consultants. CWCB recommends that State procurement polices be used as a guide if an organization does not have procurement policies.

Grantees should adequately address CWCB staff comments to scopes of work, engineering designs, and applications. This may result in changes.

Staff recommendation: Staff recommends that the Board approve a non-reimbursable expenditure up to $2,960,300 from the Colorado Watershed Restoration Program for the purpose of providing match funding to the projects identified in Table 1.

Table 1

Stream Restoration/Flood Mitigation Plans and Projects + Monitoring Grants

Applicant	Location (Stream, Town or County, Basin)	Project	Funding Request	CWCB Funding Recommendation
Lefthand Watershed Oversight Group	Left Hand Creek in Left Hand Canyon	Science, Stewardship, and Restoration in Left Hand Creek	$216,412	$216,412
City of Montrose	Uncompahgre River in Montrose	City of Montrose Uncompahgre River Improvements Project	$400,000	$400,000
RiversEdge West	Colorado Headwaters Plateau and Dolores River Watersheds	Collaborative Riparian Restoration	$152,405	$152,405
La Plata County	Hermosa Creek Watershed/Animas River	La Plata County - 416 Fire Watershed Restoration Project	$500,000	$500,000
Spanish Peaks-Purgatoire River Conservation District	Purgatoire Watershed	Purgatoire River Watershed Riparian Rehabilitation Project, Phase IV	$100,000	$100,000
Upper Arkansas Water Conservancy District	Coaldale - Hayden Pass Fire	Hayden Pass Fire & Flood Recovery - Phase II	$143,824	$143,824
Huerfano County Water Conservancy District	Huerfano County - Spring Creek Fire	Spring Creek Fire Flood Mitigation	$500,000	$500,000
			$2,012,641	**$2,012,641**

Stream Management Plans

Applicant	Location (Stream, Town or County, Basin)	Project	Funding Request	CWCB Funding Awarded
Big Thompson Watershed Coalition	Big Thompson River - Canyon Mouth to I-25	Big Thompson River Envisioning Project	$146,440	$146,440
Yampa/White/Green Basin Roundtable	Yampa and Elk Rivers	Yampa River Basin Integrated Water Management Plan	$235,000	$235,000
Upper Gunnison River Water Conservancy District	Ohio Creek, East River, Lake Fork, Cebolla, Taylor, and Gunnison River	Upper Gunnison Basin Watershed Assessment and Management Planning Phase II: Final Planning for Ohio Creek, East River, and the Lake Fork Sub-basins and Assessment for Cebolla, Taylor, and the Gunnison Mainstem	$300,000	$300,000
River Network	Statewide	Ensuring Effective Stream Management Plans	$139,400	$139,400
Blue River Watershed Group	Blue River	Blue River Integrated Water Management Plan	$126,819	$126,819
			$947,659	**$947,659**
		Total CWRP Request and Match	**$2,960,300**	**$2,960,300**

Colorado Watershed Restoration Program

Grant Program Guidance

July 2018

A. Background

Senate Bill 18-218, passed by the 2018 Colorado General Assembly, establishes funding for Watershed Restoration. The legislative declaration states:

> **SECTION 12. Continuation of the watershed restoration program - appropriation.** (1) For the 2018-2019 state fiscal year, $2,000,000 is appropriated to the department of natural resources for use by the Colorado water conservation board. This appropriation is from the Colorado water conservation board construction fund created in section 37-60-121, C.R.S. To implement this act, the Colorado water conservation board may use this appropriation to provide planning and engineering studies, including implementation measures, to address technical needs for watershed restoration and flood mitigation projects throughout the state; aquatic habitat protection; flexible operations for multiple uses; restoration work, quantification of environmental flow needs; and monitoring efforts to support watershed health goals outlined in the Colorado water plan.
>
> (2) The money appropriated in subsection (1) of this section remains available for the designated purposes until it is fully expended.

The Colorado Water Conservation Board (CWCB) is the state executive branch agency responsible for state water policy and planning. The Board's mission is to conserve, develop, protect, and manage Colorado's water for present and future generations. Its major program sections include Watershed & Flood Protection; Water Supply Planning; Finance; Stream and Lake Protection; and Intrastate & Federal. More information about the CWCB and its sections can be found at http://cwcb.state.co.us/.

The purpose of this Grant Program Guidance is to establish and describe the program for the issuance and administration of grants from the CWCB Watershed Restoration Program.

B. Grant Approval Criteria

1. Competitive Process

The Board will select the projects to fund from applications that best meet the basic application (B.2) and evaluation criteria (B.4). CWCB staff reserves the right to negotiate with successful applicants to modify the scope and/or budget of their projects to better meet CWCB objectives and fund availability. An evaluation team will be formed to review the applications and recommend projects for grant funding. The evaluation team will consist of at least four members, including: CWCB staff members, a Colorado Parks and Wildlife staff member, and possibly an environmental or volunteer organization member, if available. The Watershed and Flood Protection section chief will have approval authority for funding recommendations less than $100,000. Staff will submit funding recommendations for grants greater than $100,000 for Board action at the January CWCB meeting.

2. Grant Categories

Four categories of grants will be available under the Colorado Watershed Restoration Program:

- Watershed/Stream Restoration and/or Protection (Restoration) Grants
- Flood Mitigation Grants
- Stream Management Plan Grants
- CWCB Monitoring Projects

Restoration, Flood Mitigation, and Stream Management Plan grants are available to qualified applicants outside of the CWCB (see basic applicant qualifications). Applications that integrate multiple objectives in restoration, flood mitigation, and stream management are highly encouraged.

CWCB staff may initiate studies or demonstration projects (restoration or flood mitigation) utilizing up to 25% of the annually authorized Program funding amount.

Watershed/Stream Restoration Grants

Projects and plans designed to protect or restore watershed health and stream function will be considered in this category. This may include projects and plans designed to stabilize perennial, ephemeral, & intermittent stream channels, provide habitat for aquatic and terrestrial species, re-vegetate riparian areas, reduce erosion in upland and riverine environments, improve recreational opportunities, provide fish passage, and improve channel/floodplain connectivity. Restoration is a general term that may include the restoration, reconfiguration, rehabilitation, or resurrection of stream channels and floodplains. More background information on watershed health can be found in Chapter 7.1 of the Colorado Water Plan.

Flood Mitigation Grants

Flood Mitigation Grants include many of the same elements as Restoration Grants. In addition, they include elements that protect life and property. Applications for planning or project implementation should consider the watershed's hydrologic function and flow regime in its approach to flood mitigation. This includes channel design that contemplates low flow channels, average high water (bankfull) channels, flood prone benches, transitional zones, and

100 year or greater recurrence interval floodplains. In extreme cases, the amount of the required cost-share for each project can be reduced. CWCB staff will take into account benefits to the State with a strong emphasis on public health, safety, and welfare.

Stream Management Plan Grants

Well-developed Stream Management Plans should be grounded in the complex interplay of biology, hydrology, channel morphology, and alternative water use and management strategies. They should also consider the flow and other structural or management conditions needed to support both recreational uses and ecosystem function. A stream management plan should: (1) Involve stakeholders to ensure their acceptance of the plan; (2) assess existing biological, hydrological, and geomorphological conditions at a reach scale; (3) identify flows and other physical conditions needed to support environmental and recreational water uses; (4) incorporate environmental and recreational values and goals identified both locally and in a basin roundtable's BIP; and (5) identify and prioritize alternative management actions to achieve measureable progress toward maintaining or improving flow regimes and other physical conditions. For basin roundtables, local stakeholder groups, and decision makers, such plans can provide a framework for decision-making and project implementation related to environmental and recreational water needs.

The necessary steps for the development of a stream management plan include: (1) Gathering stakeholders to participate in plan development; (2) identifying the plan's objectives; (3) identifying and prioritizing ecological and recreational values; (4) establishing goals for flows and other physical conditions in order to protect or enhance environmental and recreational attributes on streams and rivers within a given watershed; (5) collecting and synthesizing existing data describing flows for river ecosystems, boating, or other needs in the watershed; (6) assessing existing physical conditions of stream reaches, including geomorphological and riparian conditions; (7) selecting quantitative measures that can be used to assess progress made toward articulated goals; (8) determining what new information is needed and the best methods for obtaining that information; (9) quantifying specific numeric flow recommendations (or ranges of flow) and physical conditions and assessing the potential for channel reconfiguration to support environmental and recreational values; (10) identifying temporal, geographical, legal, or administrative constraints and opportunities that may limit or assist in the basin's ability to meet environmental and recreational goals; and (11) implementing a stakeholder-driven process to identify and prioritize environmental and recreational projects and methods. Stream management plans should provide data-driven recommendations that have a high probability of protecting or enhancing environmental and recreational values on streams and rivers. More information on environmental and recreational projects and plans can be found in Chapter 6.6 and 7.1 of the Colorado Water Plan.

CWCB Monitoring Projects

CWCB may reserve 10% of the annually authorized Program funding for monitoring and evaluation of existing projects.

3. Cost-Sharing

Restoration, Flood Mitigation and Stream Management Plan grants will be funded by the CWCB on a cost-share basis. CWCB funds from the Colorado Watershed Restoration Program shall not exceed 50% of the total cost of the individual plan or project. Other CWCB funds may be used for plans and studies, but the total CWCB funding shall not exceed 75% of the total cost. CWCB contributions to federally sponsored studies or plans shall not exceed 50% of the total cost.

Costs associated with forest health project initiatives, e.g. forest fuels mitigation, can be used as match for projects having components that qualify for Watershed/Stream Restoration or Flood Mitigation Grants.

Project costs may consist of a combination of in-kind and cash match, but no more than half of the match may be in the form of in-kind services.

Cash Match

Actual expenditures paid directly with cash funds from the grantee to a vendor. Examples are supplies, services, and necessary equipment purchase or rental.

In-Kind Match

Services and labor provided by the paid staff of the grantee to perform all or part of the approved project scope of work, including necessary project administration. This can include standard direct and indirect personnel fringe benefits. Volunteer services provided at no cost to the applicant by firms or individuals consistent with the approved scope of work will be valued for in-kind match at local prevailing wage rates. Project specific land acquisition or access agreement costs may also be claimed as in-kind contributions and credited against the minimum requirement. Costs that CAN NOT be considered include: general organization operating costs such as utilities, operating supplies and services, amortized costs or rental costs for buildings and equipment used for the general operation of the organization, and general property and liability insurance costs, nor will overhead per cent charges to cover such items be allowed. These business expenses are NOT reimbursable costs and may not be claimed as matching contributions.

4. Eligible Entities

Established non-profit organizations, watershed coalitions, State of Colorado departments and agencies, local governments, conservation and water conservancy districts, and Colorado's two Ute Tribes are eligible. Federal agencies and private landowners are not eligible to receive grant funds; however, projects may be conducted on private, state, or federal lands with appropriate permissions and under the sponsorship of an eligible entity. The CWCB will strive to achieve geographic diversity by approving qualifying projects west and east of the continental divide.

5. Application Requirements

The Colorado Watershed Restoration Program (CWRP) objective is to provide planning, engineering, and construction services for watershed restoration and protection plans and projects. CWRP also provides support for flood mitigation, stream management plans, and

project monitoring. Planning and project efforts that integrate multiple objectives in different grant categories will score higher than single category applications.

Basic Applicant Qualifications

Grant applicants must demonstrate:

- a commitment to collaborative approaches, involving locally and/or regionally based diverse interests within the watershed in question, with participation open to all interested persons in the watershed. Basin roundtable support is encouraged but not required;
- a commitment to restoring or protecting ecological processes that connect land and water while protecting life and property from flood hazards;
- that the purpose of the application is to implement or plan for a project intended to (1) restore and/or protect the water, lands and other natural resources within the watershed, (2) mitigate flood hazards, and/or (3) integrate a multiple objective approach;
- a broad based involvement in or support for the grant application, including relevant local, state, or federal governmental entities; and
- an ability to provide the appropriate in-kind and cash match for the activities proposed.

Grant applications that do not demonstrate the above criteria will be disqualified from the application review process.

6. Application Evaluation Criteria

As a threshold matter, only grant applications that conform to the Application Requirements set forth above in section B.1 will be considered. Grant applications that meet these qualifications will then be evaluated with respect to the following three factors:

- How *well* does the applicant fit the qualifications test?
- Does the applicant organization have the capability to *accomplish* the proposed work?
- How effective is the proposal at accomplishing the goals of restoration, stream management, or flood mitigation?

Applications will be evaluated and ranked to determine grant funding based on the following criteria and rating system:

Qualifications Evaluation (Maximum of 20 points)

- Identify the lead project sponsor and describe the other stakeholders' level of participation and involvement. 10 points

- Specify in-kind services and cash contributions (match) amount for the proposed activities. See section B.2 of the grant program guidance to determine match

funding requirements. Discuss whether other funding sources are secured or pending. 10 points

Organizational Capability (Maximum of 30 points)

- What is the applicant organization's history of accomplishments in the watershed? Provide several past project or planning examples. List partner organizations and agencies with whom applicant worked to implement past projects or planning efforts. 10 points

- What level of staffing will be directed toward the implementation of the proposed project/planning effort? Discuss the number of staff and amount of time dedicated for the project. Will volunteers be utilized, and if so, how? Include brief resumes for each member of the active project team. 10 points

- Demonstrate that the project budget and schedule are realistic. Please use the budget/timeline spreadsheet attached to the application. Please note that the start date will take place after funding awards are announced and grants are contracted. 10 points

Proposal Effectiveness (50 points)

- What information is the project sponsor using to develop the proposed plan or project? Include any relevant information regarding existing watershed plans, stream management plans, geomorphic assessments, flood studies, fire protection plans, riparian conditions assessments, aquatic/terrestrial habitat conditions, wildlife studies, and/or river restoration reports. 10 points

- Discuss the multiple objective aspects of the project and how they relate to each other. Describe similar activities in the watershed and how this project or plan complements but does not duplicate those activities. Multiple objectives may include (but are not limited to) channel stabilization, riparian re-vegetation, habitat improvement, recreation opportunity enhancement, natural hazard reduction, flood mitigation, water supply delivery improvement, fish migration improvement, ephemeral/intermittent channel stabilization, and upland erosion mitigation. 30 points

- Describe the proposed monitoring or implementation plan. How will the project or plan measure success of its objectives? 10 points

C. Grant Program Administration

1. Application Timeline

The timeline for the grant application cycle is:

Applications available	July 10, 2018
Deadline to submit applications	Nov 2, 2018
Applications reviewed and approved	January 31, 2019
Grant award announcement	January 31, 2019
Annual progress report due	One year from date of contract

2. Payment Procedure

The CWCB will make between 1 and 4 payments, as requested by each grantee. The individual payments do not need to be equal. All payments will be based on invoices for work already completed.

The final payment will be at least 10% of the total grant award, which will not be released until full completion of grant and upon preparation and approval of a final report.

CONTACT INFORMATION

Interested parties are strongly encouraged to call the CWCB to discuss potential applications.

For more information, please contact:
Chris Sturm
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Denver, CO 80203
Phone: 303-866-3441, ext. 3236

COLORADO WATERSHED RESTORATION PROGRAM
Spring Creek Fire Flood Mitigation Phase 1
PROJECT PROPOSAL SUMMARY

Project Location: Huerfano County, Colorado
Latitude 37 33.0 7.164 °N Longitude 105 8.0 8.88 °W UTM Coordinates 4156118_488006
Grant Category: Flood Mitigation
Grant Request: $500,000.00
Cash Match Funding: $500,000 (Huerfano County, through NRCS EWP)
Total EWP project = $14,396,914; portion that applies to this grant project = $2,743,000.
In-kind Match Funding: $15,000 (earthmoving, heavy equipment, handwork - local landowners)

Project Sponsors:

Applicant - Huerfano County Water Conservancy District (grant manager)
PO Box 442 La Veta, CO 81055 FEIN 84-0935026
Organization contact: Scott King, HCWCD President
Email: slking@centurylink.net Phone: (719) 742-3124
Grant management contact: Carol Dunn, HCWCD Administrator
Email: hcwcdistrict@gmail.com Phone: (719) 742-3597
Arkansas River Watershed Collaborative (technical manager assisting with implementation)
PO Box 746 Lake George, CO 80827
Technical contact: Carol Ekarius, ARWC Executive Director
Email: carol.ekarius@co-co.org Phone: (719) 748-1496
Huerfano County (local area coordination)
401 Main St, #201 Walsenburg, CO 81089
Local area coordination: John Galusha, County Administrator
Email: john@huerfano.us Phone: (719) 738-2370

Project Description: The project will implement initial post-fire flood mitigation efforts on portions of the 108,046-acre burn scar of the Spring Creek Fire, which destroyed 141 homes in Costilla and Huerfano Counties. 65% of the fire was at moderate and high intensity and burned steep subwatersheds. Damaging floods have already occurred after several small storms in both the Cucharas and Huerfano River watersheds. The area will be subject to intense flooding and high probability of significant debris flows that will threaten human life, property and public infrastructure, including municipal water resources for the Towns of La Veta and Cuchara, City of Walsenburg, and subdivisions and smaller communities in and below the burn scar. Natural Resources Conservation Service has issued its Damage Survey Report for this fire, and the EWP funding is recommended at $14,396,914. The DSR finds imminent threats to life and property. EWP funding will assist with implementation of this and additional projects to: restore structure to the drainage areas to control water flow and reduce soil erosion; to reduce further damage and impacts on water quality; protect lives and houses from potential destruction in the Cucharas and Huerfano River watersheds. The local entities will engineer as needed and install 20 small sediment basins of 1/3-acre to ½-acre in size with alluvial fans. The cost of the basins includes mobilization to access the sites where they need to be built. The project scope also includes clearing stream channels, snagging, hill slope treatments, and critical area seeding. This flood mitigation project will impact approximately 10,000 area residents, transportation infrastructure, as well as the homes, businesses and municipal water supplies of Cuchara, La Veta and Walsenburg.

1.0 Project Proposal Summary

Project Title: Purgatoire River Watershed Riparian Rehabilitation Project, Phase IV
Project Sponsor: Spanish Peaks-Purgatoire River Conservation District (SPPRCD)
(fiscal agent) Jonnalea Tortorelli, District Manager
Jonnalea.tortorelli@co.nacdnet.net 719.497.3118
Project Manager: Purgatoire Watershed Weed Management Collaborative
(project contact) Shelly L. Simmons, Coordinator
ssimmons@tamariskcoalition.org 719.469.2847

Project Location (*see Attachment A, Map #2 for proposed project map*) This project is located in the Purgatoire River Watershed in Las Animas County. The focus of Phase IV will be the mainstem and tributaries of the Purgatoire River in the El Moro and Hohene areas. Phase IV will strive to connect previous project sites within this same area, as the map demonstrates.

Grant Type: Watershed/Stream Restoration

CWCB Grant Request: $100,000
Cash Match: $152,066
In-Kind Match: $ 60,000
Total Match: $212,066
Total Project Cost: $312,066

Estimated Acres Impacted: 186

Estimated Completion Date: February 1st, 2022

Description of Project:
Goal Build ecosystem resiliency in the Purgatoire Watershed (PW) by improving riparian habitat and function.

Objectives 1) Apply targeted IPM strategies to reduce non-native woody and secondary invasive plant species by 50% and 2) apply BMP's to improve native vegetative cover by 20% within the project area during the project time frame.

Habitat Management Practices Utilizing integrated pest management and best management practices to control non-native invasive plant species and revegetate areas where native vegetation in riparian areas has been degraded by noxious weeds.

Outcomes Enhancement of available water resources within the system by removing non-native, non-beneficial water consuming plants; promotion and enhancement of native vegetation and thus native wildlife populations; protection of communities from risk of wildfire and flooding (posed by non-native invasive phreatophytes); enhancement of agriculture by improving available water resources and promoting native vegetation.

Justification/Need The PW is one of the most ecologically intact watersheds in the State of Colorado. One of the biggest threats is the encroachment of non-native invasive woody and herbaceous plants. Taking a pro-active approach and addressing non-native invasive plant species now rather than waiting until they become a much larger threat will facilitate ecosystem resiliency.

WATERSHED RESTORATION PROPOSAL

PROJECT PROPOSAL SUMMARY SHEET

Project Title	Hayden Pass Fire & Flood Recovery- Phase II
Project Location	Coaldale, Colorado
Grant Type	Flood Mitigation Grant
Grant Request	$ 143,824
Cash Match Funding	$ 453,850 (DHSEM)
In- Kind Match Funding	$ 28,875 (UAWCD & CCHS)
Project Sponsor	Upper Arkansas Water Conservancy District
Project Fiscal Agent	River Science
Project Contact	Chelsey Nutter projects@uawcd.com (719) 539-5425

The Hayden Pass Fire of 2016 burned approximately 16,520 acres in several basins that drain into the Arkansas River. Homes, businesses, critical transportation infrastructure, habitats to threatened species, and recreational areas exist within these burned areas. Residents in the affected basins continue to experience impacts of post-fire flood events, as demonstrated by a significant flood event in July 2018 on Big Cottonwood Creek. A detailed post-fire Burn Area Emergency Response (BAER) plan was created to characterize fire impacts and identify needs for protection of high-value human and natural assets. An Emergency Watershed Protection (EWP) project was initiated in 2018 for limited areas of Big Cottonwood Creek and a section of Hayden Creek. This EWP project contemplates channel engineering projects and other emergency measures meant to safeguard lives and property from post-fire floods and erosion. However, the EWP project is of limited geographic extent. While the BAER report and EWP are critical and valuable to the recovery of the Hayden Pass fire, stakeholders involved in the project have requested a more thorough assessment of risks and needs across the entire area impacted by the fire. Additionally, enhanced community outreach, coalition building, and monitoring are essential to the overall success of this project.

The Hayden Pass Fire & Flood Recovery Phase I proposal focused on adding support for the EWP efforts conducted on Big Cottonwood Creek. After several meetings with stakeholders of the project, it became apparent that additional work was needed to address the multiple issues surrounding these recovery efforts. The Hayden Fire & Flood Recovery Phase II aims to address these challenges through (1) the development of a Watershed Recovery Coalition and continued support of the Hayden Fire & Flood Recovery (HFFR) Coordinator; (2) analysis and prioritization of all drainages affected by the Hayden Pass fire; (3) development of a Master Drainage Recovery Plan; and (4) community support and monitoring of the project area for up to two years.

COLORADO WATER CONSERVATION BOARD
Colorado Watershed Restoration Grant
RiversEdge West Project Proposal Summary Sheet

Project Title: RiversEdge West (REW) - Collaborative Riparian Restoration

Project Location: Colorado Headwaters Plateau and Dolores River watersheds. See attached maps.

Grant Type: Watershed/Stream Restoration Grant

Grant Request Amount: $152,405
Cash Match Funding: $134,018
In-kind Match Funding: $48,950

Project Sponsor & Fiscal Agent:
Tamarisk Coalition; dba **RiversEdge West (REW)**
PO Box 1907
Grand Junction, CO 81502

Contact Info:
Shannon Hatch (DRC) and David Varner (DRRP)
Restoration Coordinators
970-256-7400
shatch@riversedgewest.org;
dvarner@riversedgewest.org

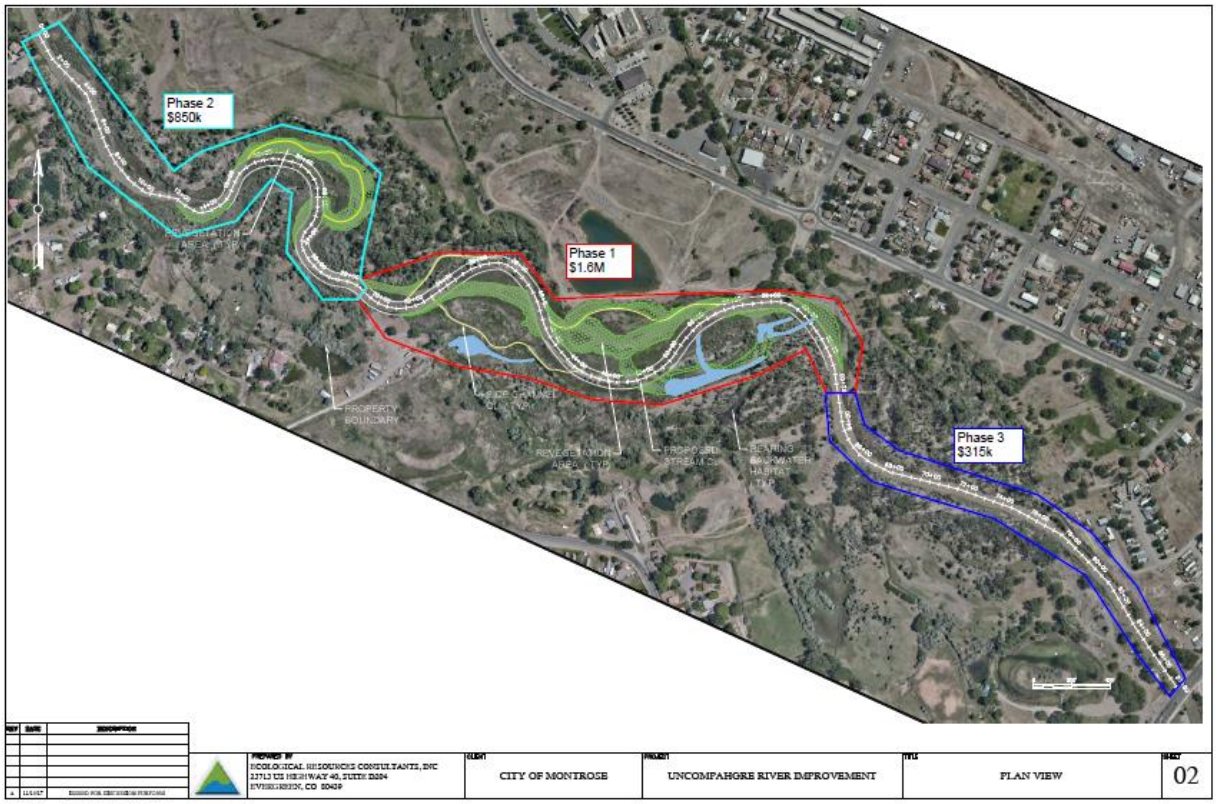
Cooperating Partners:
The key cooperating partners for the Desert Rivers Collaborative portion of this proposal are Colorado Parks & Wildlife (CPW), US Bureau of Reclamation (BOR), Colorado State Forest Service (CSFS), Mesa County, Colorado State University Ext. (CSU Extension), Natural Resources Conservation Service (NRCS), Mesa County, Halliburton, and Grand Valley Water Users Association (GVWUA). The key cooperating partners for the Dolores River Restoration Partnership portion of this proposal are the Uncompahgre, Tres Rios, and Grand Junction Bureau of Land Management (BLM) Field Offices and Conservation Legacy's Southwest Conservation Corps (SCC).

Brief Description of the Project:
Within western Colorado, REW is the lead for two landscape-scale riparian restoration collaborative efforts, the Desert Rivers Collaborative (DRC) and the Dolores River Restoration Partnership (DRRP). The DRC is focused on improving riparian lands along the Colorado and Gunnison rivers in Mesa and Delta counties, while the DRRP is restoring riparian lands across the Dolores River Watershed in Colorado and Utah.

The combined tasks of these two projects are: 1) restoration of two riparian sites within the DRC focus area impacted by wildfire in 2018; 2) mitigation of hazard fuels at one Colorado Parks & Wildlife riparian parcel within the DRC focus area where wildfire is a risk; 3) treatment and follow-up maintenance on 248 acres of riparian lands in the Dolores River corridor. Activities will include initial tamarisk treatment, tamarisk retreatments, and secondary weed treatments to be conducted by conservation corps crews, conservation corps strike team, private contractors, and volunteers; and 4) REW will coordinate active revegetation, using locally sourced, native seed, container plants, and cuttings, on 21 acres of previously treated tamarisk removal sites. REW will direct and coordinate revegetation site establishment and maintenance actions, including seeding, container planting, pole-cutting installation, and irrigation of recent plantings.

City of Montrose Uncompahgre River Improvements Project

Project Location: City of Montrose



Grant Type: Watershed/Stream Restoration/ and/or Protection (Restoration) Grants
Grant Request Amount: $400,000
Cash Match Funding: $1,200,000 (Provided by City)
In-kind Match Funding: 42 acre land donation - $657,228 (per recent appraisal)
Project Sponsor: City of Montrose
Contact Person: Kendall Cramer, Grant Coordinator, (970) 497-8531, kcramer@ci.montrose.co.us

Project Description:

The City of Montrose plans to complete Phase 1 of 3 of river restoration improvements on 0.65 miles (3,400 feet) of the Uncompahgre River traversing through Montrose. River restoration includes reestablishing a resilient channel alignment, creating an active channel width which is balanced with flow and sediment load, connecting the river to its floodplain, creating a stable riparian zone adjacent to the channel, improving fish and other aquatic habitat, stabilizing the river banks, and providing river access to the public. The design contract for the project was awarded to Ecological Resource Consultants (ERC) in 2017 and the project is currently 70% designed. The City anticipates construction to begin in winter 2019-2020. The project complements a multi-million dollar mixed-use development project, the Montrose Urban Renewal Authority Development (MURA), which includes nearly 42 acres of new, donated, public open space along the river and the extension of the river trail, partially funded by a $2 million Great Outdoors Colorado Grant.

Project Title	Science, Stewardship, and Restoration in Left Hand Creek Watershed
Project Location	Left Hand Canyon (see map – Attachment A)
Grant Type	Watershed/Stream Restoration and/or Protection (Restoration)
Grant Request/Amount	$216,412
Cash Match Funding	$1,868,935
In-kind Match Funding	$24,488
Total Match Funding	$1,894,423
Project Sponsor(s)	Lefthand Watershed Oversight Group
Contact person	Jessie Olson; jolson@lwog.org; 303.746.7937
Brief description of the project	

The purpose of this multi-objective project is to continue adaptive restoration experiments and test new approaches for watershed stewardship. Our goal is to improve future restoration and stewardship efforts for Left Hand Creek and other Front Range watersheds through a combination of scientific methods, collaboration, and pilot-testing new approaches. To achieve this goal, we will:

- Continue adaptive restoration experiments focused on examining ecological processes that connect land and water to help inform and improve future watershed restoration efforts, including collaboration with University of Colorado – Boulder to help bridge knowledge gaps between researchers and practitioners of stream restoration;
- Partner with Boulder County on adaptive management (with focus on weed control and revegetation) in new and gap areas of the watershed (including both public and private properties) to connect watershed-wide stewardship and data collection efforts, including pilot-testing new adaptive restoration and outreach approaches; and
- Start a new pilot-test partnership with Left Hand Fire Protection District and Wildfire Partners focused on upland watershed health and wildfire mitigation efforts to incorporate upland stewardship into watershed restoration and explore new assessment tools that relate wildfire mitigation directly to watershed health. Information learned from this pilot project will provide proof of concept for future regional planning efforts.

With coalition-based leadership at the helm of these highly collaborative efforts, this project is well-aligned with Colorado Water Plan recommendations regarding coalition-based partnership plans, projects, monitoring, and adaptive management strategies. This project also builds on momentum created through complete and ongoing restoration work by strengthen existing partnerships (e.g. Boulder County), testing new partnerships (e.g. Left Hand Fire Protection District and Wildfire Partners), and incorporating partners with diverse interests and expertise (e.g. CU-Boulder) to achieve greater benefits for the watershed through collaboration and holistic thinking (e.g. riparian and uplands, connecting land and water, linking science and practice) that transcend jurisdictional and political boundaries. A critical aspect of this project is collaborative outreach and education, so that project partners can learn from each other, test new methods to leverage each other's unique expertise, and achieve a greater level of broad based involvement to restore and protect the watershed. Lastly, we are starting a new pilot partnership with the St. Vrain Creek Coalition to explore ways to join forces, grow together, and utilize our staff and programs at a more regional scale in the St. Vrain Creek Watershed.

Project Proposal Summary Sheet

Project Title:	La Plata County Post-416 Fire Watershed Restoration Project
Project Location:	Hermosa Creek Watershed/Animas River (see attached maps)
Grant type:	Watershed Restoration Grant
Request Amount:	$500,000
Cash Match Funding:	$5,341,000
In-kind Match:	$148,000
Project Sponsor:	La Plata County
Contact:	Chuck Stevens, chuck.stevens@co.laplata.co.us, 970-382-6220

Description of the project:

La Plata County (LPC) and USDA Natural Resource Conservation Service (NRCS) are collaborating to provide assistance through NRCS' Emergency Watershed Protection Program (EWP) and to engage, coordinate and educate property owners, partner agencies, community groups and other stakeholders impacted by flooding following the 416 Fire, which burned approximately 54,000 acres in the Hermosa Creek Watershed beginning June 1, 2018. The 416 Fire's impacts are continuing for residents who live below the burn scar. Lost vegetation and changes to soil composition increase the risk of flooding and debris flow. Many properties have been affected already by these events, and more are likely to see flooding in the months and years to come.

La Plata County seeks to assist in the watershed recovery by facilitating the removal of debris and installing measures to reduce hazards and prevent future flooding disasters. La Plata County intends to holistically address the Hermosa Creek /Animas River watershed to repair damage caused by the flooding and take preventative measures to reduce the potential for future flood damage to occur. The La Plata County Post-416 Fire Watershed Restoration Project will be a parallel project working in consonance with the NRCS EWP. La Plata County has applied to serve as the lead project sponsor for the EWP program and is seeking this grant to augment the restoration and mitigation activities that will be undertaken.

This grant would enable La Plata County to mitigate the damage caused by the 416 Fire, restore watershed health and protect the watershed from future damage. By protecting the watershed health, the County would be acting in a manner consistent with effective watershed management practices in order to maintain the quality of life in this region and accommodate the development and maintenance of flows, including domestic supplies, environmental needs, agriculture, recreation, and commercial/industrial needs to provide for further economic development.

The objective of this project is to engage, educate and coordinate impacted property owners, neighborhoods and other stakeholders to implement the NRCS EWP program to deploy mitigation actions throughout affected or threatened areas so as to maximize the effectiveness of the program for reducing threats to life and safety, protecting from future flooding, and restoring the hydraulic capacity of historic and natural drainages to pre-event conditions with the overarching objective of improving the health of the Hermosa Creek and Animas River watersheds following the 416 Fire and its ongoing impacts.

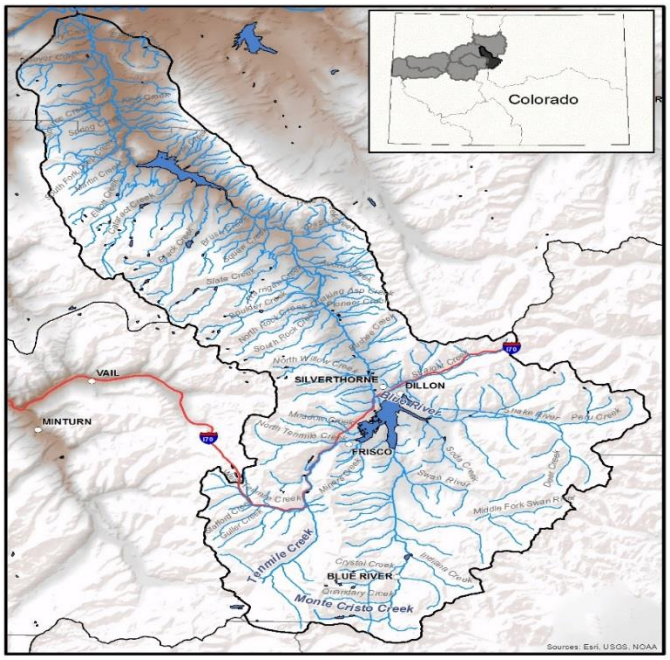
Qualifications

La Plata County has applied to be the local sponsor administering the NRCS Emergency Watershed Protection Program to assist with mitigation and restoration following flooding and debris flow events below the 416 Fire burn scar. In this capacity, La Plata County serves as coordinating entity working with property owners, neighborhoods and community stakeholders affected by flooding and debris flow to

Colorado Water Conservation Board-Colorado Watershed Restoration Program Grant Application.

Summary Sheet

Project Title: Blue River Integrated Water Management Plan.
Project Location: Blue River Basin in Colorado. See (Map 1) below.
Grant Type: Stream Management Plan Grant
Grant Request/Amount: $126,819.00
Cash Match Funding: $63,110.00
In-kind Match Funding: $63,710.00
Project Sponsor(s): Trout Unlimited and Blue River Watershed Group (TU will act as fiscal agent).
Contact Information: Richard Van Gytenbeek r.vangytenbeek@tu.org (307) 690-1267 and/or Dan Omasta DOmasta@tu.org (720) 354-2647.



(Map 1) The Blue River Basin

Project Description

Trout Unlimited (TU) and the Blue River Watershed Group (BRWG) are working together to produce a basin-wide integrated water management plan (IWMP) for the Blue River basin in Summit and Grand Counties in Colorado. The long-term goal of the IWMP will be to enable consumptive and non-consumptive water users to understand and quantify current and future use and integrate those uses for the maximum benefit of all users while protecting the existing water resource.

The initial scope of work for this grant request (IWMP-Phase One) has two primary objectives to be completed through four main tasks. The two objectives are to: 1) work in parallel with the Blue River Enhancement Workgroup (BREW) to understand the reasons for the declining Blue River trout fishery; and 2) compile current research, management plans, and stakeholder input to inform the IWMP-Phase Two. Tasks include: 1) the formulation of an advisory team along with broad stakeholder outreach; 2) determination of the causes for the declining fishery between Dillon and Green Mountain Reservoirs; 3) compilation and analysis of existing data-information-studies; and 4) the development of "next steps" focusing on the formulation of IWMP-Phase Two implementation goals and objectives.

1.0 PROJECT PROPOSAL SUMMARY SHEET

Project Title:	*Upper Gunnison Basin Watershed Assessment and Management Planning Phase II: Final Planning for Ohio Creek, East River, and the Lake Fork Sub-basins and Assessment for Cebolla, Taylor, and the Gunnison Mainstem*
Project Location:	Ohio Creek, East River, Lake Fork, Cebolla, Taylor and Gunnison Mainstem Sub-basins of the Upper Gunnison Basin
Grant Type:	Watershed Restoration Program: Stream Management Planning
Grant Request Amount:	$300,000
Cash Match Funding:	$283,000
In-kind Match Funding:	$51,450
Project Sponsor:	Upper Gunnison River Water Conservancy District
Contact:	Frank Kugel 210 West Spencer, Suite B Gunnison, CO 81230 Phone: (970) 641-6065 Email: fkugel@ugrwcd.org

Project Summary:

The Upper Gunnison Watershed Assessment and Stream Management Plan is intended to improve water security for all water uses in the Upper Gunnison Basin, by protecting existing uses, meeting user shortages, and maintaining healthy riverine ecosystems in the face of growing future demands and permanent water supply reductions due to climate change, as laid out in the Gunnison Basin Roundtable Implementation Plan (GBIP) and the Colorado Water Plan (CWP). Baseline and future needs assessment information will be compiled from the eight sub-basins, resulting in a comprehensive watershed management plan for the Basin that recognizes the complex interactions between environmental, agricultural, municipal, and recreational uses of water.

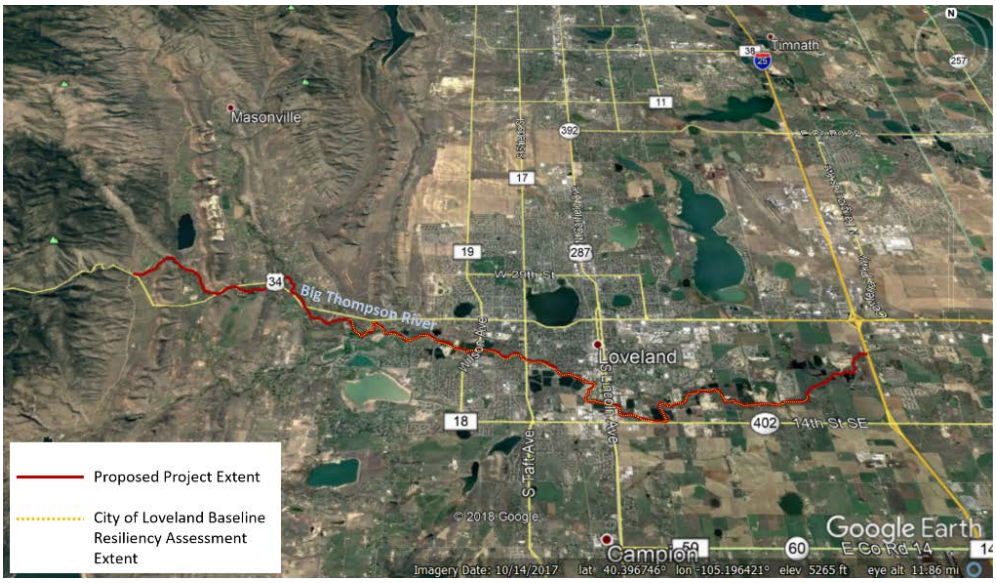
Phase I of the planning effort covered issues identification and assessment in three sub-basins: East River, Ohio Creek, and the Lake Fork of the Gunnison. Work to be completed as part of this funding request includes prioritizing options and developing implementation plans for the first three sub-basins, including the start of demonstration projects in these watersheds. In addition, we plan to conduct issues identification and assessment for three additional sub-basins: Cebolla, Taylor, and the Gunnison mainstem, specifically:

1) stakeholder outreach to gather the range of water user needs and values;
2) initial sub-basin mapping and data compilation;
3) identification of informational gaps in non-consumptive and consumptive uses;
4) assessment of stream health and modeling of historic and current water uses to address gaps.

Total budget for Phase II, including all grants and in-kind contributions is $634,450. Requested amount from the CWCB Watershed Restoration Program is $300,000.

2018 CWCB Grant Application
Big Thompson River Envisioning Project

Project Title: Big Thompson River Envisioning Project
Project Location:



Grant Type: Stream Management Plan Grant
Grant Request Amount: $146,440
Cash Match Funding: $80,000
In-kind Match Funding: $66,440
Project Sponsor: Big Thompson Watershed Coalition
Contact: Shayna Jones, BTWC Director; Shayna.jones@bigthompson.co;; (970) 800-1126

Brief description of the project:

The Big Thompson watershed is an important resource locally for the Loveland community, for the many Front Range communities who obtain their water supply from the Big Thompson River, and the millions that visit the corridor each year on their way to Rocky Mountain National Park. The Big Thompson River supports recreational trout fishing, wildlife and the local tourist economy, as well as municipal, agricultural and industrial water uses. Given the wide variety of uses, and predicted changes to land use and hydrology, a plan that balances river health with waters users' needs would ensure that the communities and wildlife that rely on the Big Thompson River could continue to do into the future.

The BTWC, along with an Advisory Committee composed of diverse water interests, will lead the development of a Stream Management Plan along approximately 15 miles of river corridor. The overall goal of the plan is to engage citizens and stakeholders to create a shared vision for improving the Big Thompson River by identifying strategies and action plans that respect property and water rights, address water user needs, and enhance environmental conditions and recreational opportunities. Key project objectives and priorities include stakeholder and community engagement and conducting a diverse set of assessments for the project area (hydrology characterization, river health, ecosystem services, infrastructure, future growth and development, etc). Collectively, this diverse set of assessments will drive the characterization of the river's capacity to deliver desired goods and services to the community and serve as the foundation for the Advisory Committee to develop a prioritized implementation plan for the next phase of work on the Big Thompson River.

COLORADO WATERSHED RESTORATION PROGRAM GRANT APPLICATION

PROJECT PROPOSAL SUMMARY SHEET

Project Title: Yampa River Basin Integrated Water Management Project

Project Location: Four segments of the Yampa Basin (see map in the Scope of Work):

- Upper Yampa River: Yampa headwaters (Bear River and its tributaries) from the Flattops to Stagecoach Reservoir, Yampa mainstem to Lake Catamount, and Oak Creek basin.
- Middle Yampa River: Yampa mainstem from Elk River to Elkhead Creek
- Lower Yampa River: Yampa mainstem and Elkhead Creek from confluence to Deerlodge
- Elk River Basin: Elk River and major tributaries

Grant Type: Stream Management Plan

Grant Request/Amount: $235,000

Cash Match Funding: $241,750

In-kind Match Funding: $178,000

Project Sponsor(s): Yampa White Green Basin Roundtable

Fiscal Agent: Selection of a fiscal agent is pending. Options include Colorado River Water Conservation District, Community Agriculture Alliance or Upper Yampa Water Conservancy District.

Contact person name, email address, and phone number: Jaclyn Brown, jbrown@tristategt.org, (970) 819-2484

Brief description of the project:

The Yampa/White/Green Basin Roundtable (BRT) is committed to protecting and enhancing the Yampa River for agricultural, municipal, industrial, environmental and recreational users, as expressed in the 2015 Basin Implementation Plan and its eight goals. The BRT continued planning efforts in 2016-17 by creating a sophisticated hydrology model of the Yampa and White river systems. This proposal continues progress on the BIP through an Integrated Water Management Plan (IWMP).

This IWMP proposal provides a roadmap to collaboratively identify and support actions that help implement the basin goals. It was crafted through extensive stakeholder outreach in 2018. This project charts a path forward for the BRT to progress on BIP goals while also building relationships with water users in the basin and responding to their needs; both were key needs found in the scoping process. It will combine stakeholder input with science and engineering assessments to identify actions that users can take to protect existing and future water uses in the Yampa River basin and support healthy river ecosystems in the face of growing population, changing land uses and climate uncertainty.

COLORADO WATERSHED RESTORATION PROGRAM GRANT APPLICATION

PROJECT PROPOSAL SUMMARY SHEET

Project Title: Ensuring Effective Stream Mgt Plans

Project Location: Statewide

Grant Type: Stream Management Plan

Grant Request/Amount : $139,400

Cash Match Funding: $210,000

In-kind Match Funding: $ 0

Project Sponsor(s): River Network

Contact person name, email address, and phone number: Nicole Seltzer, nseltzer@rivernetwork.org, 720-930-4567

Project Description:

Colorado's Water Plan offers specific guidance to protect and enhance stream flows, primarily through collaborative Stream Management Planning. Since 2016, River Network has lead a project to help CWCB and Colorado communities meet the Water Plan goal of 80 percent of locally prioritized rivers covered by Stream Management Plans by 2030. The CWCB approved 13 Stream Management Plan grants in 2016-2018 with total grant funding of over $1.2 million. In addition, almost $550,000 of Water Supply Reserve funds were used to support SMP efforts. The number of stream miles included in these plans is unclear since many of them encompass entire watersheds and numerous tributaries, but the number is certainly in the low thousands.

River Network has directly assisted scoping of six SMPs, and mentored many more. Our work accounted for over 60% of the SMP grant funds CWCB distributed in 2017, and applications in 2018 will request a similar amount. In addition to directly supporting coalitions in scoping SMPs, River Network has worked to build and improve the practice of SMPs in Colorado. Through dozens of presentations, workshops and articles, River Network created a network of professionals working on SMPs and improved planning outcomes through collecting and sharing best practices.

Meeting the Water Plan goal and measuring the impact of SMP grants requires continued investment. This project proposes to continue important work to provide early support to get SMPs off the ground for two additional years. It will also grow adoption of best practices through widely sharing lessons learned that we've collected in 2017 & 2018. Finally, it will track implementation of SMPs and define their success. Beginning in 2020, there will be a wave of finalized SMPs as those that received 2017/18 funding are completed. Many of these projects will return to the Basin Roundtables and CWCB for implementation funding. Establishing a method to track completion, implementation and success of SMPs will help CWCB demonstrate the effectiveness of its grant funding, and encourage other funders to support them.

COLORADO WATERSHED RESTORATION PROGRAM
Spring Creek Fire Flood Mitigation Phase 1
PROJECT PROPOSAL SUMMARY

Project Location: Huerfano County, Colorado
Latitude 37 33.0 7.164 °N Longitude 105 8.0 8.88 °W UTM Coordinates 4156118_488006
Grant Category: Flood Mitigation
Grant Request: $500,000.00
Cash Match Funding: $500,000 (Huerfano County, through NRCS EWP)
Total EWP project = $14,396,914; portion that applies to this grant project = $2,743,000.
In-kind Match Funding: $15,000 (earthmoving, heavy equipment, handwork - local landowners)

Project Sponsors:

Applicant - Huerfano County Water Conservancy District (grant manager)
PO Box 442 La Veta, CO 81055 FEIN 84-0935026
Organization contact: Scott King, HCWCD President
Email: slking@centurylink.net Phone: (719) 742-3124
Grant management contact: Carol Dunn, HCWCD Administrator
Email: hcwcdistrict@gmail.com Phone: (719) 742-3597
Arkansas River Watershed Collaborative (technical manager assisting with implementation)
PO Box 746 Lake George, CO 80827
Technical contact: Carol Ekarius, ARWC Executive Director
Email: carol.ekarius@co-co.org Phone: (719) 748-1496
Huerfano County (local area coordination)
401 Main St, #201 Walsenburg, CO 81089
Local area coordination: John Galusha, County Administrator
Email: john@huerfano.us Phone: (719) 738-2370

Project Description: The project will implement initial post-fire flood mitigation efforts on portions of the 108,046-acre burn scar of the Spring Creek Fire, which destroyed 141 homes in Costilla and Huerfano Counties. 65% of the fire was at moderate and high intensity and burned steep subwatersheds. Damaging floods have already occurred after several small storms in both the Cucharas and Huerfano River watersheds. The area will be subject to intense flooding and high probability of significant debris flows that will threaten human life, property and public infrastructure, including municipal water resources for the Towns of La Veta and Cuchara, City of Walsenburg, and subdivisions and smaller communities in and below the burn scar. Natural Resources Conservation Service has issued its Damage Survey Report for this fire, and the EWP funding is recommended at $14,396,914. The DSR finds imminent threats to life and property. EWP funding will assist with implementation of this and additional projects to: restore structure to the drainage areas to control water flow and reduce soil erosion; to reduce further damage and impacts on water quality; protect lives and houses from potential destruction in the Cucharas and Huerfano River watersheds. The local entities will engineer as needed and install 20 small sediment basins of 1/3-acre to ½-acre in size with alluvial fans. The cost of the basins includes mobilization to access the sites where they need to be built. The project scope also includes clearing stream channels, snagging, hill slope treatments, and critical area seeding. This flood mitigation project will impact approximately 10,000 area residents, transportation infrastructure, as well as the homes, businesses and municipal water supplies of Cuchara, La Veta and Walsenburg.

PROJECT DETAILS – Spring Creek Fire Flood Mitigation Phase 1

Applicant, grant manager and fiscal agent: Huerfano County Water Conservancy District (HCWCD)
Primary contact: Carol Dunn, Administrator Email: hcwcdistrict@gmail.com
Address: PO Box 442 La Veta, CO 81055 Phone: (719) 742-3597

Project Name: Spring Creek Fire Flood Mitigation Phase 1
Project Location: Huerfano County, Colorado
Latitude 37 33.0 7.164 °N Longitude 105 8.0 8.88 °W UTM Coordinates 4156118_488006
Grant Category: Flood Mitigation
Grant Request: $500,000.00
Cash match: $500,000, Huerfano County with NRCS EWP funding – committed
In-kind match: $15,000, Local landowners, handwork and heavy equipment – committed

Introduction and Background:
The Spring Creek fire, ignited June 27, 2018 and declared out in September, burned over 108,000 acres in Costilla and Huerfano Counties. Of the total, 9,837 acres were lands managed by USFS; 12,266 acres of BLM; 3,867 acres of State lands; 82,076 acres privately owned. The fire destroyed 141 homes in the region between Fort Garland and La Veta, characterized by steep ridge lines and drainages. Elevation of the burn scar ranges from 11,138 feet at Rough Mountain to 7,300 feet along Oak Creek to the southeast. Annual precipitation – winter snowfall and high intensity thunderstorms in late summer and early fall – ranges from 15-20 inches throughout the fire perimeter. The BAER report states, "unconsolidated sediments are available for transportation during flood flows and can add tremendous bulk and erosive power to moving water." This fire has significant areas of high and moderate burned soils, at 65% – the highest of any fire in Colorado history.

The burn scar includes critical watersheds in the headwaters of the Cucharas and Huerfano Rivers. Studies and pre-fire analyses before the fire identified some of these watersheds as having high hazards to water supplies in the Cucharas River basin: https://www.jw-associates.org/upper-cucharas-river/. The HCWCD, Huerfano County, Town of La Veta, Cuchara, and City of Walsenburg were concerned about the study results and commissioned a follow-up to identify potential post-fire sediment basin locations at key locations. At risk are life safety, loss of homes in La Veta, Walsenburg and outlying subdivisions and rural homesteads, plus municipal water supplies, businesses in Walsenburg and La Veta, and the Denver/Rio Grande Railroad coal service, scenic train and freight trains. The estimated economic impact of future damages was estimated by the NRCS DSR at $90,654,249.

Post-fire storm events causing debris flows and sediment transport and deposition have already occurred in the Indian, Pass, Middle and Abeyta Creek drainages. Including Chavez and Dog Springs Arroyos, Sangre de Cristo, Manzanares, Oak, Vories, Huerfano and Wagon Creeks, the watersheds encompass 435,836 acres. Increased soil erosion, runoff and debris flows within and downstream of these subwatersheds have a high probability of causing flooding, scouring and deposition of rocks and debris. A large portion of the headwaters of Middle Creek and Indian Creek were burned at high severity and have the highest potential erosion rates. USGS regression modeling predicts that Vories Creek is over four times more likely to flood; Indian, Pass, South Abeyta and Oak Creeks are twice as likely to flood. Based on USGS debris flow modeling, the probability of debris flows is 1,000 to 100,000 cubic meters of debris volume after a 1" per hour storm. The detrimental effects of flooding increase downstream, and the Town of La Veta is already preparing for magnified runoff and a certain amount of flooding during even modest storm events. See La Veta flood projection map in Exhibit B.

Applicant Qualifications:
Huerfano County Water Conservancy District (HCWCD) has a history of collaboration and establishment of partnerships in accomplishing projects that protect multiple values in Huerfano County. It actively participates in the Arkansas Basin Roundtable, and sees public participation in its programs and projects from diverse interests and organizations within the district boundaries.

HCWCD has broad-based involvement and support for this grant application by: Huerfano County, as the project co-sponsor and provider of cash match via the Emergency Watershed Protection project; NRCS, as initiator of the EWP; USFS, as collaborative provider of complementary watershed treatments; BLM, as a collaborative partner and provider of complementary watershed treatments; Arkansas River Watershed Collaborative, as collaborative partner and provider of technical oversight.

The CWCB grant request is $500,000.00. The cash match commitment by Huerfano County through the NRCS EWP funding is minimum $500,000. Huerfano County has applied for a hardship waiver to the required EWP match and has enlisted the help of US Senator Cory Gardner in securing the reduced 10% match waiver. The in-kind match commitment from affected local landowners in the form of handwork and heavy equipment is $15,000.

Organizational Capability:
HCWCD has a history of accomplishment in the Huerfano and Cucharas watersheds. Projects have garnered support and participation by a large number and variety of stakeholders.
Previous grant projects include:

- Cucharas Basin Collaborative Storage Study, Task 1, Storage Needs Assessment
- Cucharas Basin Collaborative Storage Study, Task 2 Screening and Cost-Benefit Analysis
- Water Infrastructure Improvements Project
- Cucharas Collaborative Storage Geotechnical Investigation Project
- Huerfano Regional Augmentation Project

Because it has been de-Bruced, HCWCD has also served as fiscal agent for the following projects:

- PRWCD Ditch Infrastructure Repair Project
- PRWCD Ditch Telemetry Project
- Arkansas Basin BIP Coordinator, Years 1, 2 & 3
- Farasita/Badito Tamarisk Restoration – Phase 1

HCWCD has worked with CWCB on these grants, as well as: Cucharas Sanitation & Water District, Huerfano County, City of Walsenburg, Town of La Veta, Purgatoire River Water Conservancy District, Colorado Division of Water Resources, Upper Huerfano Conservation District, NRCS, Maria Lake Grazing Association, La Veta Fire Protection District, Upper Huerfano Fire Protection District, Huerfano County Fire Protection District, Huerfano County Federal Mine Lands District.

Staffing for this project will be borne by the participating partner agencies and landowners with two exceptions. A consultant will be hired (we have spoken with Brad Piehl of JW Associates) to locate the sediment basins and develop specifications for how much water and sediment will need to be retained. We will engage a professional engineer to design and oversee installation of the sediment basins. If we need to hire out the work, we will use a qualification bid process, not a lowest price bid.

Resume information: JW Associates is a small, woman-owned business located in Summit County, Colorado. It has 20 years' experience with watershed wildfire hazard assessments, pre- and post-wildfire planning and mitigation, watershed planning, environmental planning, collaboration and

outreach. Carol Dunn has been HCWCD Administrator for over 11 years and is secretary-treasurer of the board. She has provided grant administration, reporting and performed fiscal agent duties for all of the HCWCD grants listed above. She will be responsible for approximately 330 hours of administrative, fiscal and reporting work on the project.

Proposal Effectiveness:
This proposal is based on the findings of the USFS BAER report and the NRCS DSR. The project will implement a combination of watershed protection and post-fire mitigation measures. The BAER report lists 15 critical watersheds. Based upon the pre- and post-fire studies and analyses, five critical watersheds have been identified that have been significantly impacted by the Spring Creek Fire. These five watersheds present hazards to municipal water supplies, private property and high-value farm lands, critical infrastructure and downstream flooding from increased runoff, debris flows, and sediment transport and deposition.

This project will address those hazards by applying a combination of treatments in those watersheds which will be designed to work together to minimize the hazards as much as practical and achieve the most effective results. Tasks include: clearing debris from channels; hillslope treatments; installing sediment basins; seeding.

Sediment basins will be located, based on field verification, mostly in small ephemeral channels that have concentrations of high and moderate burn severity and steep slopes. Some basins will be located in the headwaters of small watersheds where the watershed area is small enough for the basins to be effective. Hillslope treatments and seeding will be located above the basins in order to minimize hillslope and channel erosion. This combination of treatments, as well as keeping the sediment basins high in the watersheds, will provide downstream benefits of reduced flooding, sediment transport and debris flows. We will be working with USFS for assistance with access. If, as part of the collaborative efforts, NRCS installs a few lower and larger sediment basins that need to be cleaned out, Huerfano County has indicated its willingness to provide the required maintenance.

Statement of Work

Objectives:

1. Reduce erosion and flooding by establishing catch basins for sediment and hill slope treatments to hold soil on slopes for revegetation.
2. Increase capacity and reduce areas of damming on the Cucharas River.
3. Coordinate treatments of various other agencies to achieve the objectives.

Success will be measured by accomplishment of the deliverables for the tasks that follow.

Because of possible flooding in May, the project target start is March 1, 2019 or as soon as possible after notice to proceed. Completion date is October 31, 2019, with final reporting in November 2019. See Budget & Timeline Table attachment.

Tasks:

Task 1 – Location and Design

Method/Procedure:

1. Field determination of specific project components and locations.
2. Coordination with other agencies completing complementary projects.
3. Engineering design of typicals for sediment basins.

Field work will be completed to determine specific locations of hillslope treatments, sediment basins and other project components. The field work will be coordinated with other agencies that will be installing complementary projects in strategic locations that will achieve the best collaborative results. The attached maps show preliminary locations of ephemeral draws for sediment basins in each watershed. These locations will be visited in the field and adjusted as needed, based upon logistics, effectiveness, access, and the ability to combine sediment basins with hillslope treatments above them. These locations will be coordinated with several agencies, including NRCS, USFS and BLM. Sediment basins will only be installed in locations that have a high level of effectiveness based upon channel conditions, expected peak flows and sediment yields, complementary hillslope treatments in the watershed, and professional judgement.

Some basin locations may be downstream from the smaller basins. They would have to be larger and would be designed to be maintained (cleaned out periodically). We will coordinate with NRCS on the locations of these basins, and the design would depend upon site conditions and watershed conditions above them. If they are above-grade structures, they will be NRCS projects. We will engage a professional engineer who has post-fire sediment basin design experience to design and oversee installation of the sediment basins after the locations have been determined. The designs will include some site specific information using typical designs. Excavated material used to create alluvial fans will be measured and tracked.
Deliverables: Final locations for sediment basins, clearing and snagging, and hillslope treatments. Engineering report on sediment basin design and size of alluvial fan to be used for contracting implementation.

Task 2 – Clearing and Snagging Debris
Method/Procedure:
Task will consist of handwork to remove vegetation and debris constricting channel capacity. The direction for hand crews is to use a vertical line at bankfull, cut all trees and remove the debris from the area (except for willows) that is causing reductions in channel capacity or causing streams to jump out of their banks. Debris that is causing stream bank erosion or redirection of streamflow will be targeted. Some debris could be removed by hand crews, however heavy equipment may be needed for most of this work. NRCS has identified mechanical removal of these as part of the DSR, which will be implemented by another part of the rehab. NRCS is planning hand clearing and snagging along 10,000 feet of creeks as part of the EWP project. This grant will supplement those efforts and funds and will target clearing along the mainstem of the creeks/rivers as prescribed by NRCS. Since HCWCD will be a partner in the Cucharas-Huerfano Watershed Oversight Collaborative, we will monitor progress on the proposed Cucharas River channel work through La Veta. If the stream channel work of the two projects overlaps at any point, we will reduce this project's stream channel work described in Task 2 and take the opportunity to broaden the hillslope treatment specified in Task 3.
Deliverable: 2,210 linear feet of stream treated by hand.

Task 3 – Hillslope Treatments
Method/Procedure:
Task will include several hillslope treatments: log erosion barriers, wattles, mulching, and erosion blankets. The treatments will be specified based upon burn severity and potential hillslope erosion as determined during field visits and NRCS direction. The hillslope treatments will be applied above and around the sediment basin locations to minimize the amount of hillslope erosion entering the streams above the sediment basins. Coordination with NRCS, USFS and BLM will determine where those agencies will complete hillslope treatments that will benefit the sediment basins and therefore where to

target our treatments. The NRCS has allocated $1,633,820 for 432 acres. This grant will be used to install about half of the acreage.
Deliverable: 275 acres of hillslopes treated.

Task 4 – Sediment Basins
Method/Procedure:
The sediment basins will be designed at the locations determined in Task 1 and installed using heavy equipment. Basins will be located as close to high burn severity areas as possible. In many of these watersheds, we will locate a series of basins in small ephemeral channels that have large percentages of high burn severity and high gradients. There will be several of these basins located in each watershed in order to capture sediment close to the source. They would be designed to be below-grade structures constructed with local materials, such as burned trees and nearby boulders. The small basins would likely fill with sediment in the first few storms. They are not expected to be maintained or cleaned out. Preliminary ephemeral draw locations for basin installation: Middle Creek, Indian Creek, Pass Creek, South Abeyta Creek, and Vories Creek. See Exhibit A for maps.
Deliverable: 20 sediment basins.

Task 5 – Grant Administration and Reporting
Method/Procedure: Oversight and reporting of project activities and outcomes.
Deliverables:

1. Serve as fiscal agent for the grant.
2. Provide updates to CWCB with each grant reimbursement request, approximately monthly.
3. Provide progress reports every six months to CWCB, beginning from the date of the executed contract, including completion or partial completion of the tasks identified in the statement of work, any major issues that have occurred, and any corrective action taken to address these issues.
4. Provide a final report to CWCB upon completion of the Project which summarizes the project and documents how it was completed, including photographs, summaries of meetings and engineering reports/designs.

Budget & Timeline Table – Attached.

Source link: **USFS BAER REPORT** at https://inciweb.nwcg.gov/photos/COSJF/2018-07-14-1720-Rocky-Mountain-Region2018-PostFire-BAE/related_files/pict20180714-155457-0.pdf

Exhibits:

A – 5 maps, preliminary locations of ephemeral draws for sediment basins
B – La Veta flood projection map, rainfall depth 1.5 inches
C – NRCS DSR calculation pages
D – Photos
E – Letters of support
BLM
City of Walsenburg
ARWC
Huerfano County

Spring Creek Fire - Flood Mitigation Project

BUDGET & TIMELINE TABLE

Task	Description	Target start date	Target completion date	CWCB funds	Other funding CASH (NRCS EWP & Huerfano County)	Other funding IN-KIND*	TOTAL
1	Location and Design	3/1/2019	3/31/2019	25,000.00	28,000.00		53,000.00
2	Clearing & snagging debris	3/1/2019	10/31/2019	100,000.00	1,100,000.00	5,000.00	1,205,000.00
3	Hill slope treatment	4/1/2019	10/31/2019	100,000.00	1,100,000.00	5,000.00	1,205,000.00
4	Sediment basin installation	4/1/2019	10/31/2019	255,000.00		5,000.00	260,000.00
5	Administration & fiscal agent	3/1/2018	11/30/2019	20,000.00			20,000.00
	TOTALS			500,000.00	2,228,000.00	15,000.00	2,743,000.00

*In-kind = affected landowners with equipment and other volunteers

1.0 Project Proposal Summary

Project Title: Purgatoire River Watershed Riparian Rehabilitation Project, Phase IV
Project Sponsor: Spanish Peaks-Purgatoire River Conservation District (SPPRCD)
(fiscal agent) Jonnalea Tortorelli, District Manager
Jonnalea.tortorelli@co.nacdnet.net 719.497.3118
Project Manager: Purgatoire Watershed Weed Management Collaborative
(project contact) Shelly L. Simmons, Coordinator
ssimmons@tamariskcoalition.org 719.469.2847

Project Location (*see Attachment A, Map #2 for proposed project map*) This project is located in the Purgatoire River Watershed in Las Animas County. The focus of Phase IV will be the mainstem and tributaries of the Purgatoire River in the El Moro and Hohene areas. Phase IV will strive to connect previous project sites within this same area, as the map demonstrates.

Grant Type: Watershed/Stream Restoration

CWCB Grant Request: $100,000
Cash Match: $152,066
In-Kind Match: $ 60,000
Total Match: $212,066
Total Project Cost: $312,066

Estimated Acres Impacted: 186

Estimated Completion Date: February 1st, 2022

Description of Project:
Goal Build ecosystem resiliency in the Purgatoire Watershed (PW) by improving riparian habitat and function.

Objectives 1) Apply targeted IPM strategies to reduce non-native woody and secondary invasive plant species by 50% and 2) apply BMP's to improve native vegetative cover by 20% within the project area during the project time frame.

Habitat Management Practices Utilizing integrated pest management and best management practices to control non-native invasive plant species and revegetate areas where native vegetation in riparian areas has been degraded by noxious weeds.

Outcomes Enhancement of available water resources within the system by removing non-native, non-beneficial water consuming plants; promotion and enhancement of native vegetation and thus native wildlife populations; protection of communities from risk of wildfire and flooding (posed by non-native invasive phreatophytes); enhancement of agriculture by improving available water resources and promoting native vegetation.

Justification/Need The PW is one of the most ecologically intact watersheds in the State of Colorado. One of the biggest threats is the encroachment of non-native invasive woody and herbaceous plants. Taking a pro-active approach and addressing non-native invasive plant species now rather than waiting until they become a much larger threat will facilitate ecosystem resiliency.

2.0 Qualifications Evaluation

Project Sponsor - Spanish Peaks-Purgatoire River Conservation District (SPPRCD)
In-Kind Contribution = $15,000
Cash through CSFS S&PF (federal grant $'s) = $76,066 (secured)
SPPRCD will act as the grant fiscal agent. Jonnalea Tortorelli, District Manager, will take on the responsibility of managing grant funds through procurement of supplies and vendor payments, as well as managing project budgets. SPPRCD will be providing in-kind for the District Manager's salary valued at $5,000 for fiscal management of the project.

SPPRCD will also be providing in-kind valued at $10,000 in salary for their Noxious Weed Technician to assist with project implementation. SPPRCD Noxious Weed Technician, Donna Albertson, will work under the direction of the PWWMC Coordinator, assisting with field work such as project site mapping and inspections, noxious weed mapping, project monitoring and landowner outreach.

Additionally, SPPRCD will provide cash match through their awarded CSFS State and Private Forestry Grant valued at $76,066. These dollars have been secured for several years and project work is currently underway using these funds.

Project Manager – Purgatoire Watershed Weed Management Collaborative (PWWMC)
In-Kind Contribution = $30,000
The PWWMC Coordinator, Shelly L. Simmons, will be the project management lead, overseeing all aspects of project management: site visits, mapping, project plans, project implementation, contractor bids/contracts, landowner outreach, education and outreach events, and managing project budgets in conjunction with SPPRCD. PWWMC will also be providing in-kind valued at $30,000 in salary for project management.

Project Partners
Duck's Unlimited (DU)
Cash Contribution = $75,000 (pending)
DU will be providing substantial cash match through a NAWCA grant valued at $75,000 for on-the-ground project work such as TRO mechanical removal, re-sprout spraying and active revegetation activities (this is pending at time of submittal of this application, but DU's NAWCA application has made it to the final three for the region and has been identified as a top contender). DU will also provide technical assistance as needed for on-the-ground project work, especially with wetland restoration sites.

Purgatoire Watershed Partnership (PWP)
In-Kind Contribution = $5,000
PWP will be providing in-kind contributions valued at $5,000 in the form of technical assistance to PWWMC with restoration guidelines, and project promotion through education/outreach events and PWP social media outlets. PWP will also be working on riparian restoration projects within the City of Trinidad River Corridor and the upper watershed that over time will connect with PWWMC projects on private lands. PWP will also be working on a stream management plan over the next several years and PWWMC will be an active partner with PWP in this endeavor.

Private Landowners
In-Kind Contribution = $10,000
Private landowners will provide in-kind contributions valued at $10,000 through project site maintenance for a minimum of five years after initial project implementation.

Breakdown of Cash and In-Kind Contributions Relative to Grant Request

CWCB Grant Request:	$100,000
Cash Match:	$152,066
In-Kind Match:	$ 60,000
Total Match:	$212,066

3.0 Organizational Capacity

History of Accomplishments

The creation of PWWMC (formerly Tackling Tamarisk on the Purgatoire, or TTP) was based on the realization that much of the Purgatoire River Watershed is an ecologically intact, biologically diverse system. However, the invasion of tamarisk and Russian-olive pose a great threat to this system. Much of the infestation of tamarisk and Russian-olive within the upper watershed is manageable. PWWMC partners are taking a pro-active approach and addressing these non-native invasive species now, rather than waiting until they become a much larger threat. The partnership has been in existence since 2004 and has received over $500,000 in funding and restored over 1,920 acres of riparian corridor through the treatment of tamarisk and Russian-olive and secondary noxious weeds (*see Attachment A, Map #3 – History of Tamarisk and Russian-olive treatment areas*).

In the early stages of the partnership, over 800 acres of riparian corridor was restored in the Chacuaco drainage through the treatment of tamarisk. The Chacuaco is the largest tributary to the Purgatoire. The PWWMC Coordinator recently checked in with landowners in this treatment area. Generally, there is very little re-growth and they have been very pleased with the results. Major funding for this project was provided by the Colorado Division of Wildlife's Wetland program and the CWCB's TRO program. Project partners for this project included: CSFS, TNC, BT CD, PRWCD, SPPRCD, CDA, SLB, CPW, USFWS and private landowners. Dr. Anna Sher with Denver University also played a major role in this project as she set up several monitoring research sites located in the Chacuaco drainage.

PWWMC partners also completed 90% of initial control of tamarisk and Russian-olive in the upper tributaries of the Purgatoire above Trinidad Reservoir and on Trinidad State Park. Over 15 tributaries and areas around the reservoir have been treated. Major funding for this was provided by the CDA State Weed Fund, the SLB Noxious Weed Fund, and the PRWCD. Major partners included CSFS, TNC, SP-PR CD, Trinidad State Park, and private landowners.

During the past two years (2016-2018) over 240 acres of riparian lands were restored under PWWMC leadership (*see Attachment A, Map #1*) in the Hoehne and El Moro areas along the mainstem of the Purgatoire. Active revegetation was completed on two of these sites, as well as vegetative monitoring. The data show positive vegetation progression, with a higher percentage of native and desirable plant species replacing tamarisk and Russian-olive dominated sites (*see Attachment B for Vegetative Monitoring Data – Miller/River Valley Ranch project site).* Major funding for these project sites was provided by CWCB IPCP, CPW Wetlands Program, ARWC, and CSFS State and Private Forestry grant. Major partners include SPPRCD, PWP, CSFS, private landowners and RiversEdge West (REW). REW has played a critical role with supporting PWWMC, most notably through their Restore Our Rivers funding campaign, which has helped fill the funding gap for capacity (i.e. funding the PWWMC coordinator position).

Level of Staffing – Primary Project Staff for Project Implementation and Management

PWWMC Coordinator, Shelly L. Simmons – 1 FTE

Shelly will serve in the role of overall project manager. Roughly >70% of her time will be solely dedicated to this project. Shelly has managed riparian restoration/woody invasive projects for over a decade with a stellar track record of project completion and meeting or exceeding project goals, including three previous CWCB grants. Shelly's experience includes grant writing and management, budget management, project management, IPM and BMP's specific for noxious weed management and riparian restoration, education and outreach related to natural resource management, and creating and maintaining collaborative partnerships focused on natural resource conservation.

SPPRCD District Manager, Jonnalea Tortorelli - .75 FTE

Jonnalea will serve as the fiscal manager for the project. Roughly 10% of her time will be dedicated to the fiscal management of this project. Jonnalea has worked hand-in-hand with Shelly for over eleven years implementing riparian restoration/woody invasive projects. Jonnalea's related work experience includes business and operational manager for the two conservation districts in Las Animas County. She is proficient in accounting and use of Quick Books. Jonnalea also writes and manages multiple grants for the conservation districts, including three previous CWCB grants.

SPPRCD Noxious Weed Technician, Donna Albertson – 1 FTE

Donna will assist Shelly with on-the-ground project implementation tasks. Roughly >30% of her time will be dedicated to this project and will include landowner outreach, site visits, mapping, creating plans, monitoring and working with contractors. Donna joined SPPRCD in June of 2018 as their new Noxious Weed Technician, under the supervision of the

PWWMC Coordinator. Donna's experience includes noxious weed spraying, mapping, landowner outreach, and completing noxious weed plans for landowners participating in SPPRCD cost share programs.

Project Budget and Timeline (see Figure 1)

With over a decade's worth of experience, the personnel and organizations needed to achieve success are already in place. The PWWMC partnership is stronger and more experienced than ever, having secured over $500,000 in funding and restored over 1,920 acres of riparian corridor through the treatment of tamarisk and Russian-olive and secondary noxious weeds. Thus we are confident in proposed project budget and timeline.

Figure 1 – Budget and Timeline

Purgatoire River Watershed Riparian Rehabilitation Project, Phase IV - Budget & Timeline Table

Task	Description	Target Start Date	Target Completion Date	CWCB Funds	DU - CASH	S&PF - CASH	SPPRCD In-Kind	PWWMC In-Kind	PWP In-Kind	Private LandO In-Kind	Total
1	**Mechanical TRO Removal**			$ 60,000.00	$ 75,000.00	$ 42,367.00					$ 177,367.00
	Contracted - Extraction + Mastication@ $950/acre x 186 acres	2/1/2019	2/1/2022								
2	**Commercial Applicator/Herbicide**	8/1/2019	8/1/2021	$ 10,000.00		$ 15,000.00					$ 25,000.00
	Contracted - Commercial Applicator @ $150/hr x 80hrs = $12,000										
	Herbicide = $13,000										
3	**Monitoring**	7/1/2019	7/1/2021	$ 6,000.00							$ 6,000.00
	Contracted - for at least two representative properties @ $150/hr x 40hrs										
4	**Revegetation**	4/1/2020	9/1/2021	$ 10,000.00		$ 19,699.00					$ 29,699.00
	Contracted - 20 acres @ $1,500/acre										
5	**Maintenance - Five years post project**	8/1/2022	8/1/2027							$ 10,000.00	$ 10,000.00
	TRO re-sprout Tx and secondary invasive Tx										
6	**Project Management and Implementation - Salaries**	Ongoing throughout project					$ 15,000.00	$ 30,000.00			$ 59,000.00
	PWMMC Coordinator Salary			$ 14,000.00							
7	**Technical Assistance**	Ongoing throughout project							$ 2,500.00		$ 2,500.00
8	**Education and Outreach/PR and Marketing of Project**	Ongoing throughout project							$ 2,500.00		$ 2,500.00
			TOTALS	**$ 100,000.00**	**$ 75,000.00**	**$ 77,066.00**	**$ 15,000.00**	**$ 30,000.00**	**$ 5,000.00**	**$ 10,000.00**	**$ 312,066.00**

4.0 Proposal Effectiveness

PWWMC utilizes a targeted, long-term sustainable approach to riparian restoration with an overarching goal to improve the riparian ecological system as a whole.

Information Utilized for Project Planning

The following plans and guidance documents are all used by PWWMC for identifying target treatment areas, IPM strategies and BMP's for riparian restoration and noxious weed control. PWWMC also draws upon its own extensive experience with riparian restoration, tamarisk and Russian-olive control and secondary noxious weed control.

Woody Invasives Plan - A woody invasives management plan for the Purgatoire Watershed was completed in 2008, approved by the Colorado Department of Agriculture's State Weed Coordinator http://www.tamariskcoalition.org/sites/default/files/images/TTP%20Plan%20final%208-08.pdf . The plan is based on a set of guiding principles that focus on ecological, social-cultural, economic, and research considerations.

Watershed Plan - The Purgatoire River Watershed Plan was completed in 2014 by the Purgatoire Watershed Partnership, http://www.usbr.gov/watersmart/cwmp/docs/plans/Spanish-Peaks-Purtgatoire-Conservation-District.pdf . PWP is taking a phased approach to implementing the plan by first focusing on goals #4 and #5 (mitigating invasive plants and riparian habitat improvement). Implementation of these watershed plan goals will also overlap with other goals, such as healthy forests and rangeland.

Las Animas County Weed Plan - Las Animas County is very active with noxious weed control, focusing mainly on County right-of-ways. They are also involved with a multi-organizational effort in conjunction with CSU Extension and the Colorado Department of Agriculture's Noxious Weed Program to eradicate African rue, a List A noxious weed. Las Animas County's weed plan and other relevant weed information can be found at http://www.lasanimascounty.net/departments/weed-control.html . Partners plan to update the County weed plan in the near future.

Resource Guides Utilized: Tamarisk - Best Management Practices in Colorado Watersheds by Scott Nissen; Best Management Practices for Revegetation after Tamarisk Removal by Anna Sher; A Guide for Planning Riparian Treatments in New Mexico, USDA publication.

Multiple Project Objectives

Relation of Project to CWCB's Multi-objective Missions

This project will further the CWCB's multi-objective missions in the following ways:

1. **Watershed Restoration**: By removing tamarisk and Russian-olive from the Watershed, the ecosystem can progress towards a more restored system, improving native vegetation and habitat for native wildlife.
2. **Protection of Water Resources**: Tamarisk and Russian-olive are non-native plants that do not belong in our systems. They are a non-beneficial consumer of water. Removing these plants will increase water availability within the Watershed for agriculture, communities, recreation, and wildlife.
3. **Mitigating Flood risks below Trinidad Dam**: It has been well documented that tamarisk creates flood hazards by narrowing streambanks, deepening stream channels, and serving as a rigid impediment for flood debris. By removing it from our systems, flood hazards will be reduced, lessening potential flood damage to communities and infrastructure.
4. **Wildfire Mitigation**: Tamarisk creates an unnatural ladder fuel in our riparian systems that native plants are not adapted to. It increases the wildfire risk to communities because of extreme fire behavior, including easy ignition, intense heat, and rapid spread, which occurs when tamarisk burns.
5. **Protection of Agriculture**: Tamarisk, when taken to a stand level, is a non-beneficial consumer of large amounts of water—water that is precious in our semi-arid climate and vital for agricultural producers.
6. **Improving Recreational Opportunities**: Counties within the Purgatoire Watershed offer unique and diverse recreational opportunities. Specifically, Trinidad State Park and the Trinidad River Walk provide thousands of people every year with countless ways to enjoy the outdoors. Tamarisk and Russian-olive encroachment is a serious threat to these opportunities primarily by limiting access to streambanks for fishing, boating, hunting, and wildlife viewing.

PWWMC's riparian restoration efforts will also compliment upcoming efforts of PWP. PWP will be conducing stream management planning and hydrological studies in the near future. PWWMC will work with PWP in these efforts, specifically utilizing active riparian restoration sites to collect data or set up monitoring/study sites.

Monitoring and Implementation Plans

Long-term Monitoring and Maintenance Plan

PWWMC will hire a contractor to perform vegetative monitoring on at least two representative project sites. Post-treatment monitoring variables will be compared with initial baseline resource data (collected during site visits and recorded in site specific plans). Monitoring will precede active revegetation for at least one year post-treatment, and will continue for no less than two years after active revegetation. Based on this project's goal of moving the Upper Purgatoire Watershed towards a more ecologically functioning system, our monitoring variables will include the following: Changes in woody invasive composition, changes in secondary invasive composition, changes in native vegetation, changes in hydrology, and the presence and effectiveness of the tamarisk leaf beetle.

Passive revegetation monitoring will begin one year after treatment and continue for no less than five years. Post-treatment monitoring data will be collected on an annual basis by PWWMC.

Photo points will be used at all project sites. Other monitoring data collection methods may include a combination of the following: Line intercept, and simple ground water monitoring wells (only at sites where feasible and where project partners think meaningful data can be obtained).

Monitoring data will determine the maintenance needs at each project site. Maintenance, such as controlling woody and secondary invasives, will be conducted annually following monitoring, and will continue for no less than five years after initial treatments by landowners (this is a required component that landowners must agree to in order to participate in the project). Project partners will work with landowners to develop monitoring and maintenance schedules.

Monitoring data will also be evaluated to determine whether or not the overall project goal is being attained. If it is determined alternative actions are necessary, then plans will be adjusted accordingly (i.e. adaptive management).

Development of Site Specific Implementation Plans

IPM strategies for control of woody invasives and secondary invasives for the project area will be developed based upon the baseline resource inventory data. Project partners will determine what treatment methods will yield the most effective result in relation to cost, ease of implementation, the ability of the site to recover, and long-term ecological sustainability. Due to the diverse ecological conditions within the project area, IPM control strategies will also be diverse and will include a combination of methods.

Project partners will employ the least disruptive invasive weed control strategies within the project area to facilitate ease of revegetation and/or recovery. Again, it is a matter of determining what treatment methods will yield the most effective result in relation to cost, ease of implementation, the ability of the site to recover, and long-term ecological sustainability.

Due to the diverse landscape within the project area, revegetation strategies will be diverse as well. Revegetation efforts will focus on choosing planting strategies and plant materials that are best suited to the conditions at each site, and that will have the best chance of success with natural precipitation/hydrology patterns.

Educational Components

Several educational events will be conducted in coordination with this project. The first goal of these educational events is to increase the public's awareness about watershed health. By increasing public awareness, project partners will help promote long-term ecological sustainability of the watershed by building community support for conservation organizations such as PWP and PWWMC, and fostering a sense of stewardship for watershed restoration.

The second goal is to teach land managers and land owners how to successfully maintain their projects by utilizing monitoring techniques.

Educational events will include presentations at the annual Trinidad Water Festival, and comprehensive land management workshops for landowners and land managers.

PWP will work with PWWMC to assist with these educational events through marketing and outreach of watershed conservation events and information through their social media outlets and newsletters.

Attachment C: Scope of Work

Grantee: Spanish Peaks-Purgatoire River Conservation District (SPPRCD)
Federal Employer ID # (FEIN): 84-1106744

Primary Contact:
Shelly L. Simmons, Coordinator
Purgatoire Watershed Weed Management Collaborative (PWWMC)
3590 E. Main Street
Trinidad, CO 81082
719.469.2847
ssimmons@tamariskcoalition.org

Secondary Contact:
Jonnalea Tortorelli, SPPRCD District Manager
3590 E. Main Street
Trinidad, CO 81082
719.497.3118
Jonnalea.tortorelli@co.nacdnet.net

Project Title: Purgatoire River Watershed Riparian Rehabilitation Project, Phase IV

CWCB Grant Request: $100,000
Cash Match: $152,066
In-Kind Match: $ 60,000
Total Match: $212,066
Total Project Cost: $312,066

Estimated Acres Impacted: 186

Estimated Completion Date: February 1st, 2022

Introduction and Background
Goal Build ecosystem resiliency in the Purgatoire Watershed (PW) by improving riparian habitat and function.

Objectives 1) Apply targeted IPM strategies to reduce non-native woody and secondary invasive plant species by 50% and 2) apply BMP's to improve native vegetative cover by 20% within the project area during the project time frame.

Habitat Management Practices Utilizing integrated pest management and best management practices to control non-native invasive plant species and revegetate areas where native vegetation in riparian areas has been degraded by noxious weeds.

Outcomes Enhancement of available water resources within the system by removing non-native, non-beneficial water consuming plants; promotion and enhancement of native vegetation and thus native wildlife populations; protection of communities from risk of wildfire and flooding (posed by non-native invasive phreatophytes); enhancement of agriculture by improving available water resources and promoting native vegetation.

Justification/Need The PW is one of the most ecologically intact watersheds in the State of Colorado. One of the biggest threats is the encroachment of non-native invasive woody and herbaceous plants. Taking a pro-active approach and addressing non-native invasive plant species now rather than waiting until they become a much larger threat will facilitate ecosystem resiliency.

Tasks and Timeline

Tasks will be accomplished over the project timeline with staggered initial treatments occurring over the project time frame.

Task 1 – Phase I - Mechanical tamarisk and Russian-olive removal (CWCB and partner funds)

Timeline

- Winter/spring 2019
- Winter/spring 2020

Description

- Biomass removal of TRO

Method/Procedure

- PWWMC will visit individual project sites, conduct mapping, create site specific treatment plans, sign up participants
- PWWMC will then put job out to bid for contractors
- SPPRCD will contract with contractor
- Contractor will mechanically extract and masticate TRO, following contract specifications

Deliverable

- Completed TRO biomass removal on 186 acres

Task 2 – Phase II - Treatments of TRO re-sprouts and Secondary Invasives: Commercial Applicator/Herbicide (CWCB and partner funds)

Timeline

- Fall 2019
- Fall 2020

Description

- TRO re-sprout and secondary invasive treatments following TRO biomass removal

Method/Procedure

- PWWMC will put job out to bid for contractors
- SPPRCD will contract with contractor
- Contractor will treat TRO re-sprouts and secondary invasives with herbicide, following contract specs

Deliverable

- Completed TRO re-sprout and secondary invasive treatments on 186 acres

Task 3 – Phase III - Monitoring (CWCB funds)

Timeline

- Vegetative monitoring and maintenance activities will occur during the next growing season after treatment and for no less than 2 years post-treatment for monitoring

Description

- Hire Contractor to conduct vegetative monitoring on at least two representative sites

Method/Procedure

- Contractor will conduct vegetative monitoring, mapping and collecting data via GPS
    - Pre-monitoring before phase I begins
    - Post-monitoring the following summer after initial treatments, but before re-sprouts are treated
    - Post monitoring one full year after biomass removal and first round of re-sprout treatments
- Monitoring data will then dictate maintenance and/or revegetation needs. Monitoring data will also be used to determine whether or not project objectives are being achieved.

Deliverable

- Assurance that desired project site conditions are occurring: Enhancement of available water resources within the system by removing non-native, non-beneficial water consuming plants; promotion and enhancement of native vegetation and thus native wildlife populations; protection of communities from risk of wildfire and flooding; and enhancement of agriculture by improving available water resources and promoting native vegetation.

Task 4 – Phase IV - Revegetation Activities (CWCB and partner funds)

Timeline

- Timing of revegetation will vary by site. BMP's will be utilized to determine the best suited revegetation strategy for each site. Most revegetation activities will take place during the following growing season after treatment of invasives, although there might be some exceptions, depending upon the site.
    - Spring 2020
    - Spring 2021
    - Spring 2022

Description

- Developing and implementing revegetation plans by comparing baseline resource inventory data with site conditions after initial control treatments. Monitoring data will determine revegetation needs at project sites.

Method/Procedure

- Following site specific revegetation plans for project sites. This will include activities such as biomass reduction, pole plantings and tall-pot plantings in areas with high water tables, and xeric upland seeding efforts.

Deliverable

- Increasing and establishing native vegetative cover at project sites

Task 5 – Project Maintenance (partner in-kind)

Timeline

- Maintenance activities will occur no less than 5 years after the first year of initial treatment. This is the landowner's responsibility (landowners must agree to five years post-project maintenance to enroll in the program)

Description

- Project participants will conduct maintenance of their project sites for no less than five years following initial treatments.

Method/Procedure

- The following year after initial treatment, landowners will arrange treatment of any TRO re-sprouts or secondary invasives on their project site
- PWWMC will inspect project sites annually and work with landowners to make sure maintenance activities are conducted property and in a timely manner and that maintenance activities are inspected

Deliverable

- Assurance that desired project site conditions are maintained

Task 6 – Project Management and Implementation (CWCB funds and partner in-kind)

Timeline

- Ongoing throughout project

Description

- Overall project management, implementation, fiscal management, grant reporting

Method/Procedure

- Fiscal project/grant management
- Field review of project sites to evaluate and document pre-treatment site conditions
- Development of project management plans, mapping, landowner sign up
- Implementing site specific management plans
- Monitoring
- Grant reporting

Deliverable

- Ensuring all phases of project work are properly planned and implemented

Task 7 – Technical Assistance (partner in-kind)

Timeline

- Ongoing throughout project

Description

- Project partners will assist PWWMC with project guidance as needed

Method/Procedure

- PWP and DU will assist PWWMC as needed with project guidance such as: IPM strategies and BMP's for monitoring, revegetation, wetland specific restoration

Deliverable

- Project work will meet restoration standards and monitoring standards.

Task 8 – Education and Outreach Activities (partner in-kind)

Timeline

- Two land management workshops will be conducted in the spring/summers of 2020 and 2021
- PWWMC will present on the topic of riparian restoration at the Trinidad Water Festival annually from 2019 -2021

Description

- Project partners will plan and implement education and outreach activities.

Method/Procedure

- Specific activities: Land management workshops, youth education events
- Outreach/Marketing: Outreach and marketing strategies will be utilized to educate the public at large about watershed health, such as radio and newspaper spots, and targeted publications

Deliverable

- By increasing public awareness through education and outreach activities, project partners will help promote long-term ecological sustainability of the Watershed by fostering a sense of stewardship and building community support for conservation organizations within the watershed

WATERSHED RESTORATION PROPOSAL

PROJECT PROPOSAL SUMMARY SHEET

Project Title	Hayden Pass Fire & Flood Recovery- Phase II
Project Location	Coaldale, Colorado
Grant Type	Flood Mitigation Grant
Grant Request	$ 143,824
Cash Match Funding	$ 453,850 (DHSEM)
In- Kind Match Funding	$ 28,875 (UAWCD & CCHS)
Project Sponsor	Upper Arkansas Water Conservancy District
Project Fiscal Agent	River Science
Project Contact	Chelsey Nutter projects@uawcd.com (719) 539-5425

The Hayden Pass Fire of 2016 burned approximately 16,520 acres in several basins that drain into the Arkansas River. Homes, businesses, critical transportation infrastructure, habitats to threatened species, and recreational areas exist within these burned areas. Residents in the affected basins continue to experience impacts of post-fire flood events, as demonstrated by a significant flood event in July 2018 on Big Cottonwood Creek. A detailed post-fire Burn Area Emergency Response (BAER) plan was created to characterize fire impacts and identify needs for protection of high-value human and natural assets. An Emergency Watershed Protection (EWP) project was initiated in 2018 for limited areas of Big Cottonwood Creek and a section of Hayden Creek. This EWP project contemplates channel engineering projects and other emergency measures meant to safeguard lives and property from post-fire floods and erosion. However, the EWP project is of limited geographic extent. While the BAER report and EWP are critical and valuable to the recovery of the Hayden Pass fire, stakeholders involved in the project have requested a more thorough assessment of risks and needs across the entire area impacted by the fire. Additionally, enhanced community outreach, coalition building, and monitoring are essential to the overall success of this project.

The Hayden Pass Fire & Flood Recovery Phase I proposal focused on adding support for the EWP efforts conducted on Big Cottonwood Creek. After several meetings with stakeholders of the project, it became apparent that additional work was needed to address the multiple issues surrounding these recovery efforts. The Hayden Fire & Flood Recovery Phase II aims to address these challenges through (1) the development of a Watershed Recovery Coalition and continued support of the Hayden Fire & Flood Recovery (HFFR) Coordinator; (2) analysis and prioritization of all drainages affected by the Hayden Pass fire; (3) development of a Master Drainage Recovery Plan; and (4) community support and monitoring of the project area for up to two years.

WATERSHED RESTORATION PROPOSAL

APPLICATION

Qualifications Evaluation

Project Team

The proposal before you today is building on several current efforts to alleviate issues caused by the 2016 Hayden Pass Fire and subsequent Flooding in Coaldale, Colorado. The Upper Arkansas Water Conservancy District (the District), a statutory organization that covers over 3,000 square miles in the Upper Arkansas River Basin will lead as the project sponsor. Kate Spinelli who lives in Coaldale and has worked with the Arkansas River Watershed Collaborative and San Isabel Land Protection Trust on recovery efforts for the Hayden Fire will lead as the project's Hayden Pass Fire & Flood Recovery Coordinator. Engineering and Hydrologic Modeling for the project will be conducted by River Science, a nonprofit out of Canon City in partnership with Lotic Hydrological a water resources engineering firm out of Salida. Led by River Science, Canon City Highschool will provide 40 student volunteers to help with water quality sampling and monitoring for the project. Lastly, this project builds on work and partnerships already established in Phase I of the project. Current project partners include Fremont County BOD, Otak, Natural Resource Conservation Service, Colorado Division of Homeland Security & Emergency Management, and most important the Citizens and Landowners of Coaldale.

Funding

Matching Cash Funds for the project are provided by the Colorado DHSEM. It is believed that funding provided by DHSEM and NRCS will exceed what is needed to implement Phase I of the project. These additional funds will be utilized to implement projects identified through this grant proposal. Additionally, the District will be providing in-kind Project Management for the duration of Phase II. Canon City Highschool will provide 40 volunteer students who will spend 3 days on site to conduct water quality monitoring. All funding sources listed above are secured. There is potential for additional funding to be acquired through the Rotary Club who has shown interest in the project. CWCB will be notified if such funds become available.

Organizational Capability

Project Sponsor Projects

The District has been highly active in the Basin for over 40 years. The District has worked with the CWCB and partner organizations on multiple projects and studies. The District has been the recipient of several grants and loans provided by the CWCB through various funding categories. Previous and current significant projects of the District include:

1. (2009-Present) The District has been part of the Regional Resource Planning Group since it's inception. The Group (Ark. Basin Water Conservancy Districts and Municipalities) have worked with USGS to conduct multiple water quality studies in the basin.

2. (2011) Telemetry Gauging Project (a network of 22 telemetry gauging stations on multiple upper basin reservoirs and tributaries). Provides real-time data that can be found on the District's website and assists in the administration of water rights.
3. (2000 – Present) The District has worked with the USGS for over 18 years to study the interactions between groundwater and surface water and the potential for alluvial storage. Currently, we are in our 18th year of these studies and have been focusing in the Wet Mountain Valley.
4. (2004 -Present) Multi-Use Projects. The District continues to move forward with two multiuse projects in Chaffee County Colorado. These projects aim to integrate the needs of multiple water users. Each project has six key components that include storage, irrigated agriculture, hydropower, environment and recreation, education, and collaboration.
5. (Present) Monarch Pass Forest and Watershed Health Project- In partnership with the USFS, ARWC, and multiple funding partners, the District is moving forward with a forest mitigation project to treat approximately 600 acres of beetle kill on steep slopes in Chaffee County.

Active Project Team

Chelsey R. Nutter- Project Manager

Joining the Upper Arkansas Water Conservancy District in 2012, Ms. Nutter is responsible for managing the District's portfolio of water projects, grant writing and assisting the General Manager. She also leads the District's education and outreach programming efforts. Ms. Nutter is a member of the Arkansas River Basin Roundtable and is the Chair of the Needs Assessment Committee. She received her B.S. in Land Use and Geographic Information Systems in 2012 from Metro State University and is currently pursuing her Master's in Business Administration from Adams State.

Kate Spinelli- Project Coordinator

From 2016-2018 Kate worked for the San Isabel Land Protection Trust, managing the land trust's portfolio of conservation easements and helping to grow a stewardship services program. Before her work with San Isabel, Kate worked as a Naturalist for Colorado Parks and Wildlife and the Greater Arkansas River Nature Association, expanding ecological literacy programs in the Upper Arkansas Valley. Having earned a Master of Social Work in Community Advocacy and Planning from Washington University, Kate is uniquely positioned to effectively engage and communicate with individuals and groups with diverse backgrounds and perspectives.

Luke Javernick- Project Engineer

Luke is a hydraulic engineer for Lotic Hydrological and the President of the non-profit, River Science. He has a background in civil engineering and has specialized in river restoration and remote sensing. Luke's passion is applying his physical scientific knowledge with the latest available technologies to achieve the greatest preservation, protection, and restoration of healthy river systems. This has been the focus of Luke's Ph.D. research, the Marie Curie Fellowship, and his continued work with River Science and Lotic Hydrological.

Seth Mason, M.S.- Project Hydrologist

Seth is the principal hydrologist for Lotic Hydrological. He received his M.S. in Land Resources and Environmental Sciences from Montana State University and his B.A. in Environmental Studies from the University of Colorado, Boulder. He specializes in hydrological modeling; stream characterization; deployment and operation of data collection and management systems; and the development and coordination of water quality monitoring and assessment activities. Seth works extensively with city and county governments, federal agencies, and 501(c)3 organizations. Seth currently serves on the Board of Directors of Eagle Mine Ltd., a non-profit organization established to monitor and disseminate information about the Superfund cleanup efforts at the Eagle Mine Site near Red Cliff, Colorado.

Project Budget- Please see the attached detailed budget

Proposal Effectiveness

Studies

As previously mentioned, this proposal will build off current work and support multiple project elements to ensure sustainability and success in recovery efforts. Existing and proposed studies that will be utilized for the purposes of this proposal include:

1. BAER Report - A detailed post-fire Burn Area Emergency Response (BAER) plan was created to characterize fire impacts and identify needs for protection of high-value human and natural assets.
2. EWP- An Emergency Watershed Protection (EWP) project was initiated in 2018 for limited areas of Big Cottonwood Creek and a section of Hayden Creek. This EWP project contemplates channel engineering projects and other emergency measures meant to safeguard lives and property from post-fire floods and erosion.
3. OTAK- Engineering and design for flood mitigation on Big Cottonwood Creek
4. Hayden Pass Fire- Big Cottonwood Drainage Recovery Plan (Phase I)

Multiple Complementary Objectives

The primary purpose of this proposal is to assist, support, and expand the recovery efforts currently underway. During Phase I discussions with Stakeholders, it became clear that additional engineering and hydrologic modeling were needed. Current funding (EWP) and associated assistance are focused on only one drainage that was impacted by the Hayden Pass Fire (Big Cottonwood). Big Cottonwood Creek experienced significant catastrophic flooding in 2017-2018, and thus funding has been focused on that drainage. The County and Landowners are highly concerned that even though Big Cottonwood has currently experienced the worse damage, it is only a matter of time before the other drainages experience significant flooding.

This proposal will take the first steps to assess the entire affected area and provide much-needed analysis, prioritization, and recommendations for these other drainages. The overall success and sustainability of this project need to look at the entire watershed and all affected areas. This proposal will provide that analysis which will prepare the citizens of Coaldale and help move towards

implementation of projects in these additional impacted areas. Included in the plan are multiple tools that will help assist the community in the identification, risk analysis, and prioritization of needs. This proposal will also provide guidance and assistance in project development and the identification of funding for project implementation.

Through our stakeholder meetings, we also learned the critical need for a local coordinator to work with landowners and provide a point of contact for all involved. This position will determine the success or failure of the project and essential to managing the projects multiple objectives and diverse stakeholders. This proposal enlists the leadership of Kate Spinelli who is an expert on this type of coordination and lives in the affected area. Kate's role over the next two years will be valuable and will provide the needed guidance, cohesiveness, and group dynamic management that is essential to the project's success.

Monitoring

Another major identified issue that was discovered through the stakeholder meeting process is that following the EWP completion, Fremont County will pass the associated project liability to landowners. One major cause for concern is the lack of tools available to monitor sites following the construction. This proposal will provide much-needed monitoring and support for the community after the completion of the EWP project. River Science in partnership with the Canon City Highschool will provide photographic tracking, water quality analysis, and surveying for the Big Cottonwood drainage as well as all other drainages identified as "high" risk in the report. Kate Spinelli will also continue to provide community support during the monitoring phase of the project. Kate will maintain the point of contact for all landowners and will work with landowners to secure funding, develop plans, and monitor the drainages over the next two years.

The final deliverable of the proposed project will include a Master Drainage Recovery Plan. The Plan will follow the CWCB CWRP model and will guide stakeholders toward consensus-driven prioritization and implementation of stream restoration activities. The plan will define the watershed coalition and stakeholder’s vision for recovery and enhance the community’s understanding of watershed health and risks to the system created by post-fire conditions. The plan will provide recommendations, identify potential projects, discuss monitoring, and assist in the identification of future funding sources and partners. In addition to a technical Master Drainage Recovery Plan, a condensed brochure format of this information will be developed and distributed to better communicate information, recommendations, and findings of the project.

Scope of Work

GRANTEE and FISCAL AGENT
River Science (Fiscal Agent)
Upper Arkansas Water Conservancy District (Project Lead/ Grantee)

PRIMARY CONTACT
Chelsey Nutter, UAWCD Projects Manager

ADDRESS
PO BOX 1090 Salida, CO. 81201

PHONE
719-539-5425

PROJECT NAME
Hayden Pass Fire & Flood Recovery (Phase 2)

GRANT AMOUNT

INTRODUCTION AND BACKGROUND
The Hayden Pass Fire of 2016 burned approximately 16,520 acres in several basins that drain into the Arkansas River. Homes, businesses, critical transportation infrastructure, habitats to threatened species, and recreational areas exist within these burned areas. Residents in the affected basins continue to experience impacts of post-fire flood events, as demonstrated by a significant flood event in July 2018 on Big Cottonwood Creek. A detailed post-fire Burn Area Emergency Response (BAER) plan was created to characterize fire impacts and identify needs for protection of high-value human and natural assets. An Emergency Watershed Protection (EWP) project was initiated in 2018 for limited areas of Big Cottonwood Creek and a section of Hayden Creek. This EWP project contemplates channel engineering projects and other emergency measures meant to safeguard lives and property from post-fire floods and erosion. However, the EWP project is of limited geographic extent. While the BAER report and EWP are critical and valuable to the recovery of the Hayden Pass fire, stakeholders involved in the project have requested a more thorough assessment of risks and needs across the entire area impacted by the fire. Additionally, enhanced community outreach, coalition building, and monitoring are essential to the overall success of this project.

The Hayden Pass Fire & Flood Recovery Phase I proposal focused on adding support for the EWP efforts conducted on Big Cottonwood Creek. After several meetings with stakeholders of the project, it became apparent that additional work was needed to address the multiple issues surrounding these recovery efforts. The Hayden Fire & Flood Recovery Phase II aims to address these challenges through (1) the development of a Watershed Recovery Coalition and continued support of the Hayden Fire & Flood Recovery (HFFR) Coordinator; (2) analysis and prioritization of all drainages affected by the Hayden Pass fire; (3) development of a Master Drainage Recovery Plan; and (4) community support and monitoring of the project area for up to two years.

OBJECTIVES

- Increase community support, transparency, and communication through the development of a Watershed Recovery Coalition let by the HFFR Coordinator that includes all areas affected by the Hayden Pass Fire.
- Expand engineering analysis and risk assessment to include all drainages affected by the Hayden Pass Fire.
- Develop an inclusive approach to identifying additional needs and prioritization of projects in addition to the Big Cottonwood Drainage.
- Create a Master Drainage Recovery Plan to identify needs, guide future projects, identify potential funding, and provide recommendations.
- Develop educational materials that can be shared with Landowners to communicate project phases, findings, and recommendations.
- Provide project monitoring and community support for a period of two years.

TASKS

TASK 1 –Hayden Fire & Flood Recovery Coordinator & Watershed Recovery Coalition

Description of Task

Phase I of the coordination work has begun with landowner outreach and coalition building within the Big Cottonwood drainage to support the EWP efforts. In addition to landowner outreach and education for the implementing the EWP project, the creation of a Watershed Recovery Coalition is underway and will include landowners in each drainage impacted by the Hayden Pass Fire, starting with the Big Cottonwood drainage in Phase I and extending to all affected drainages in Phase II. The Coalition will create local ownership and meaningful engagement throughout the recovery process, making it relevant to local needs and thus, more sustainable. Project partners such as USFS, BLM, State Land Board, Division of Water Resources, Colorado Parks & Wildlife, local watershed-based nonprofits, and recreational fishing and rafting interests will be included in the coalition, positioning the group to create a robust, holistic recovery plan and leverage technical and fiscal resources for the broadest impact on the whole watershed.

The coalition will be a conduit for community watershed education, creating a well-informed group that understands the complexity of holistic watershed health and how different projects impact the overall health and condition of the watershed, especially after a fire. A strong educational foundation will help guide the coalition to prioritize recovery projects that have the broadest benefit to the whole watershed while taking into account local needs and concerns. Coalition building activities will follow models for successful watershed coalition formation provided by the CWCB CWRP.

Method/Procedure

- Create a single point of contact (HFFR Coordinator) answer questions, provide guidance, meet with landowners and coordinate efforts between all parties
- Expand current reach to include all drainages within the affected area

- Continuous communication, engagement, and outreach between HFFR coordinator, landowners, stakeholders, project partners, engineers, and project manager
- Lead the community through the steps needed to form a coalition guided by CWCB's CWRP.
- Hold coalition meetings and events to keep everyone informed and working as a cohesive group
- Provide education materials and updates on project phases, completion, and monitoring

Deliverable

The deliverable for this task will include documentation, photos, and summaries of the education, outreach, and coordination efforts. Six-month progress reports and a final report will be provided to document the successes (or challenges) of the outreach and coordination efforts.

TASK 2 – Mapping Assets and Conditions of Additional Drainages

Description of Task

Available mapping, photography, and GIS data/information will be utilized from multiple agencies and sources to delineate high-value human and natural resources and to map the watershed characteristics relevant to risk characterization. Field visits and a single day of fly-overs in a small plane will also be utilized to identify the extent of post-fire forest recovery, ground-truth delineation of in-tact riparian areas and determine the location of debris dams and other fluvial hazards (e.g., landslides, incision, avulsion potential, etc.). Stakeholder meetings will be held to assign relative valuations to the human and natural resources identified. All datasets and appraisal will build the foundation for further analysis and communication in subsequent tasks.

Method/Procedure

- Spatial data collection (online) photos, maps, GIS shapefiles, etc.
- Field visits and fly-over data collection & mapping
- Stakeholder input of relative ("Low" to "High") valuation of resources
- Develop GIS-based assessment and analysis areas affected by the Hayden Fire

Deliverable

The deliverables for this task will include datasets, photos, GIS characteristic maps, and prioritization valuations.

TASK 3 – Issue Identification and Risk Characterization Mapping

Description of Task

Issue Identification and risk characterization will build on the approaches presented in the BAER report as well as the information produced by the EWP project. Maps of burn severity will be compared directly to terrestrial habitat delineations to understand risks for a reduction in habitat quality/extent following the fire. We will construct and use a model of precipitation-driven soil erosion and sediment transport potential to understand the potential for increased hillslope erosion as a function of changes in land cover produced by the Hayden Pass Fire and

the impacts of burn severity on soil infiltration rates. We will compare model outputs to the locations of human infrastructure (e.g., roads and structures) and assets related to natural resources (e.g., fish passage barriers) to develop a spatial representation of risk severity to those assets. Evaluations of stream network structure concerning hillslope position and erosion, as well as the location(s) of debris dams along the network will provide a pathway for semi-quantitative delineation of reach-scale risks for enhanced sediment delivery and/or erosion.

Method/Procedure

- Map and data comparisons and analyzation
- Soil erosion and sediment transport modeling
- Model output comparison and analysis
- Create natural recovery maps based on the project team and stakeholder input
- Overly natural recovery and risk maps to produce the qualitative mapping of asset vulnerability

Deliverable

The final deliverable for this task will include inputs maps and models and the final qualitative asset vulnerability map.

TASK 4 – Prioritization & Master Drainage Recovery Plan

Description of Task

Deliverables from all previous tasks will be used to facilitate stakeholder meetings designed to prioritize future project needs and assist in the development of a master drainage recovery plan. These efforts will provide recommendations for additional treatments designed to strengthen and reinforce outcomes of the EWP and widen the goals to include the other fire-impacted drainages below the Hayden Pass Fire burn scar.

A master drainage recovery plan will follow the CWCB CWRP model and will guide stakeholders toward consensus-driven prioritization and implementation of stream restoration activities. The plan will define the watershed coalition and stakeholder's vision for recovery and enhance the community's understanding of watershed health and risks to the system created by post-fire conditions. The plan will provide recommendations, identify potential projects, discuss monitoring, and assist in the identification of future funding sources and partners. In addition to a technical Master Drainage Recovery Plan, a condensed brochure format of this information will be developed and distributed to better communicate information, recommendations, and findings of the project.

Method/Procedure

- Hold meetings with primary project Stakeholders (Fremont County, OTAK, NRCS, UAWCD, etc.)
- Hold meetings with the Watershed Recovery Coalition
- Create prioritization maps, documents, etc. that reflect the team and stakeholder input
- Identify project gaps and needs
- Identify potential funding sources and partners to meet those needs

- Develop recommendations and next steps
- Develop Master Watershed Recovery Plan (Technical PDF)
- Develop Brochure and other educational materials to help communicate information to landowners

Deliverable
The deliverables for this task will include educational materials and the Master Drainage Recovery Plan.

TASK 5– Monitoring and Landowner Support

Description of Task
Following completion of the EWP project, Fremont County will pass the associated project liability to landowners. One major cause for concern is the lack of tools available to monitor sites following the construction. Photographic monitoring will be utilized following the EWP project and will be extended to additional locations in the drainages identified as high risk. Photos will be collected quarterly and after flood events for up to two years.

Additionally, EWP engineering projects will be monitored by surveying stream cross-sections at up to five project sites, and water quality data will be collected at 11 tributary locations for a period of two years. Canon City Highschool students will assist with the water quality data collection and monitoring for the duration of the project. Lastly, communication, engagement, and education must continue through this process. The HFFR Coordinator will continue landowner outreach, assist with monitoring and communicate with project stakeholders through the monitoring phase.

Method/Procedure
- Geotag up to 25 locations on Cottonwood Creek
- Geotag up to 25 locations on identified high-risk drainages
- Photos collected quarterly and immediately following two flood events per year
- Survey stream cross sections at up to five project sites following EWP construction
- Establish water quality collection sites
- Work with Canon City Highschool students to collect, monitor, and analyze water quality data
- Continue to provide support and assistance through the HFFR Coordinator Position
- Update the Master Drainage Recovery Plan with new information gained from monitoring

Deliverable
The final deliverable for this task will include an updated Master Drainage Recovery Plan that provides data, analysis, and recommendations following monitoring.

TASK 6 –Grant Administration

Description of Task

Projects Manager (Chelsey Nutter) for the UAWCD will provide overall project management. Project management duties will include coordination between project contractors, stakeholders, and the CWCB; HRM for project engineers, HFFR coordinator, stakeholders, and partners; primary point of contact for CWCB. Responsible for overall task management, reporting, progress reports, and communicating with the grantor.

Method/Procedure

- PM will provide overall project management, task management, and contractor management
- PM will be the primary point of contact for CWCB and will provide six-month progress reports, compile reimbursement documentation, and final reporting
- River Science will work in partnership with UAWCD's PM to provide grant administration as it pertains to Fiscal Agent responsibilities for reimbursement requirements

Deliverable

The deliverables for this task will include six-month progress reports, final project reporting, and reimbursement documentation.

Budget & Timeline Table								
Task	Description	Target Start Date	Target Completion Date	CWCB Funds	Other Funding Cash*	Other Funding In-Kind*		Total
						UAWCD	CCHS	
*	Division of Homeland Security & Emergency Management	Funding for Hayden Pass Fire Recovery Projects			$453,850			$0
1	HFFR Coordinator & Coalition Building	2/1/2019	6/30/2021	$31,432.00		$3,388.00		$34,820
2	Mapping Assets & Conditions	2/1/2019	6/30/2021	$21,751.00		$900.00		$22,651
3	Issues Identification & Risk Charecterization	2/1/2019	6/30/2021	$10,651.00		$1,325.00		$11,976
4	Prioritization & Master Drainage Recovery Plan	2/1/2019	6/30/2021	$17,666.00		$2,626.00		$20,292
5	Monitoring & Land Owner Support	2/1/2019	6/30/2021	$50,924.00		$5,636.00	$15,000.00	$71,560
6	Grant Administration	2/1/2019	6/30/2021	$11,400.00				$11,400
	TOTALS			**$143,824.00**	**$453,850.00**	**$13,875.00**	**$15,000.00**	**$172,699.00**

This table is a guide. Variations may be submitted. For example, if a task includes purchase of materials, a column that identifes cost per unit should be included.

*Please include new columns for different sources of cash and/or in-kind funding sources. Identify the funding source.

COLORADO WATER CONSERVATION BOARD
Colorado Watershed Restoration Grant
RiversEdge West Project Proposal Summary Sheet

Project Title: RiversEdge West (REW) - Collaborative Riparian Restoration

Project Location: Colorado Headwaters Plateau and Dolores River watersheds. See attached maps.

Grant Type: Watershed/Stream Restoration Grant

Grant Request Amount: $152,405
Cash Match Funding: $134,018
In-kind Match Funding: $48,950

Project Sponsor & Fiscal Agent:
Tamarisk Coalition; dba **RiversEdge West (REW)**
PO Box 1907
Grand Junction, CO 81502

Contact Info:
Shannon Hatch (DRC) and David Varner (DRRP)
Restoration Coordinators
970-256-7400
shatch@riversedgewest.org;
dvarner@riversedgewest.org

Cooperating Partners:
The key cooperating partners for the Desert Rivers Collaborative portion of this proposal are Colorado Parks & Wildlife (CPW), US Bureau of Reclamation (BOR), Colorado State Forest Service (CSFS), Mesa County, Colorado State University Ext. (CSU Extension), Natural Resources Conservation Service (NRCS), Mesa County, Halliburton, and Grand Valley Water Users Association (GVWUA). The key cooperating partners for the Dolores River Restoration Partnership portion of this proposal are the Uncompahgre, Tres Rios, and Grand Junction Bureau of Land Management (BLM) Field Offices and Conservation Legacy's Southwest Conservation Corps (SCC).

Brief Description of the Project:
Within western Colorado, REW is the lead for two landscape-scale riparian restoration collaborative efforts, the Desert Rivers Collaborative (DRC) and the Dolores River Restoration Partnership (DRRP). The DRC is focused on improving riparian lands along the Colorado and Gunnison rivers in Mesa and Delta counties, while the DRRP is restoring riparian lands across the Dolores River Watershed in Colorado and Utah.

The combined tasks of these two projects are: 1) restoration of two riparian sites within the DRC focus area impacted by wildfire in 2018; 2) mitigation of hazard fuels at one Colorado Parks & Wildlife riparian parcel within the DRC focus area where wildfire is a risk; 3) treatment and follow-up maintenance on 248 acres of riparian lands in the Dolores River corridor. Activities will include initial tamarisk treatment, tamarisk retreatments, and secondary weed treatments to be conducted by conservation corps crews, conservation corps strike team, private contractors, and volunteers; and 4) REW will coordinate active revegetation, using locally sourced, native seed, container plants, and cuttings, on 21 acres of previously treated tamarisk removal sites. REW will direct and coordinate revegetation site establishment and maintenance actions, including seeding, container planting, pole-cutting installation, and irrigation of recent plantings.

QUALIFICATIONS EVALUATION

Identify the lead project sponsor and describe other stakeholders' level of participation and involvement.

REW, as the coordinator of the DRC and the DRRP, is the lead project sponsor and grant coordinator.

The DRC and DRRP provide platforms for local entities to work together to conduct collaborative restoration efforts for the benefit of overall river health and improved local communities, through enhanced opportunities for recreation, education, and economic benefit. The partners of both partnerships have agreed to a Memorandum of Understanding and collaboratively authored riparian restoration implementation plans which provide guidance on priorities and approaches.

Other stakeholders include:

Colorado Parks & Wildlife (CPW)

- Restoration work will be completed on several properties owned, or managed, by CPW, including Horsethief Canyon State Wildlife Area, Skippers Island, and Island Acres.
- CPW will be contributing in-kind and cash match, in addition to staff time for project implementation and oversight.

US Bureau of Reclamation (BOR)

- Restoration work will be completed at a BOR owned property near Cameo and at Horsethief Canyon State Wildlife Area.
- BOR will be contributing in-kind and cash match, in addition to staff time for project implementation and oversight.

Halliburton

- Restoration work will be occurring on Halliburton's property.
- Halliburton will be providing cash match for seed purchase and will allow BOR to access water for mixing herbicides for weed spraying.

Colorado State Forest Service (CSFS), Colorado State University Ext. (CSU Extension), Mesa County, and Natural Resources Conservation Service (NRCS)

- CSFS, CSU Extension, and NRCS will be providing technical assistance for project implementation.
- Mesa County is providing in-kind weed spraying services.

Grand Valley Water Users Association will provide cash match to support REW's coordinating support and in-kind support to help facilitate on-going discussions with partner organizations and permitting agencies.

Conservation Legacy's Southwest Conservation Corps (SCC) is a 501(c)(3) non-profit based in Durango, CO. SCC operates conservation service programs across Southern Colorado and Northern New Mexico that "empower individuals to positively impact their lives, their communities and the environment".

Bureau of Land Management (BLM) manages the majority of the Dolores River. The DRRP works closely with three Colorado BLM field offices to identify, plan, coordinate, and fund project implementation and monitoring.

National Wild Turkey Federation (NWTF) supports habitat restoration efforts in the region and has been a DRRP partner since 2016.

Private Landowners - The DRRP has worked with over 26 private landowners to conduct restoration on private lands. Outreach to new landowners and follow-up activities with existing partner-landowners continue to be an important aspect of cross-boundary initiatives to treat invasive plants. The DRRP will continue work with private landowners as a part of this proposal.

Specify in-kind services and cash contributions (match) amount for the proposed activities. Discuss whether other funding sources are secured or pending.
See detailed budget provided as Attachment D.

ORGANIZATIONAL CAPABILITY

What is the applicant organization's history of accomplishments in the watershed? Provide several past project or planning examples. List partner organizations and agencies with whom applicant worked to implement past projects or planning efforts.
Since its inception in 1999, REW has supported watershed-wide collaborative partnerships that are comprised of federal, state, and local agencies, community organizations and land owners throughout the West. As part of this effort, REW provides leadership, support, training, and technical assistance to community partnerships, including the DRC and the DRRP, to ensure they have the capacity, technical resources, and information required to carry out and sustain riparian restoration work.

Specific to the DRC focus area, over 1,200 acres of TRO have been treated, in cooperation with myriad partners, since REW's inception. In 2017 alone, the DRC completed 20 acres of initial TRO removal, 83 acres of TRO retreatment, 214 acres of secondary weed control, and 28 acres of revegetation. The proposed work complements and extends restoration efforts funded by previous CWCB grants, including WSRA and IPCP. Under these projects alone, 123 riparian acres were improved.

Additionally, per the Colorado Water Plan, protecting and restoring healthy streams, rivers, lakes and riparian areas, as well as managing invasive species and protecting against natural disasters such as wildfires, are key objectives of the Colorado Basin Roundtable. Such activities are critical to preserving the local economy, which is highly dependent on recreation.

REW has also completed extensive mapping and prioritization planning for the area, and it has provided a number of educational opportunities, including its annual conference, which is held in Grand Junction alternating years.

In 2017, the DRRP completed 175 acres of initial tamarisk removal, 479 acres of tamarisk resprout treatment, 252 acres of secondary weed control, and 29 acres of revegetation.

What level of staff will be directed toward the implementation of the proposed project? Discuss the number of staff and amount of time dedicated for the project. Will volunteers be utilized, and if so, how? Include brief resumes for each member of the active project team.
Shannon Hatch and David Varner, Restoration Coordinators with REW, will be overseeing this project. In addition to overseeing grant administration, Shannon and David will provide project planning and implementation assistance as well as coordination and leadership for their respective partnerships. In addition, REW will provide staff assistance for GIS, monitoring, and maintenance support through Ben Bloodworth, Biocontrol Program Lead.

CPW will provide 151 hours of seasonal staff oversight for post-fire rehab and fire mitigation efforts. Staff will assist with secondary weed spraying, revegetation, TRO removal, and maintenance. BOR will provide 80 hours of in-kind staff support for secondary weed spraying, TRO removal, seeding, and maintenance.

John Rizza, the Small Acreage Specialist for CSU Extension and NRCS will be providing technical assistance and project management expertise, with emphasis on working with private landowners.

Kamie Long, Supervisory Forester with CO State Forest Service, will be providing technical assistance, and Teresa Nees, with Mesa County Noxious Weed & Pest, will provide in-kind spraying services.

While DRC projects typically involve volunteers in some capacity, they will not be used for this project as heavy equipment will primarily be used to conduct removal efforts and to complete seeding on the site.

Resumes for the active project team are provided as Appendix I.

Demonstrate that the project budget and schedule are realistic.
Local government partners for these projects have been working to obtain any necessary permits from the US Army Corps of Engineers and the US Fish & Wildlife Service, with no delays anticipated. All other project components for the state and locally managed sites are shovel-ready, including TRO removal, secondary weed treatment, and revegetation.

CWCB funding will be used to meet the total project budget for each site, which was calculated by each project manager. With generous in-kind support and a substantial cash match, each project budget is realistic and achievable. Costs per-acre varies considerably based on prescribed methodologies and access.

The implementation schedule (provided as an appendix) was planned in accordance with site managers and is based on typical treatment times for invasives species removal and revegetation requirements. As an example, revegetation will not be completed until secondary weed treatment has been largely completed. Once revegetation proceeds, only grass seeding will be used to ensure that any subsequent treatments of herbicide don't negatively impact forbs or shrubs.

PROPOSAL EFFECTIVNESS

What information is the project sponsor using to develop the proposed plan or project? Include any relevant information regarding existing watershed plans, stream management plans, geomorphic assessments, flood studies, fire protection plans, riparian conditions assessments, aquatic/terrestrial habitat conditions, wildlife studies, and/or river restoration reports.
The DRC utilizes a 5-Year Implementation Plan to guide restoration efforts. This plan complements other planning efforts in the Grand Valley; the most pertinent to this effort is the Colorado River Section 206 Aquatic Ecosystem Restoration report, which provides detailed assessment and restoration plans for the Colorado River from Loma to Palisade. Specific to wildfire, the 2012 Mesa County Community Wildfire Protection Plan (MCCWPP) and the 2015 Mesa County Hazard Mitigation Plan assess the risk of wildland fire at the local and county level. A management plan has also been developed for several CPW sites, including Island Acres and Horsethief Canyon SWA.

The work of the DRRP is guided by a scientifically rigorous restoration plan; the Dolores River Restoration Action Plan (DR-RAP), which outlines four shared goals: ecological, social, economic, and adaptive management. One of DR-RAP's guiding principles is to minimize harm to wildlife species. Through collaborative planning that engages partners with a variety of skills and professional backgrounds, use of best available science as well as best-management practices, the DRRP is ensuring the protection of a healthy, viable riparian corridor.

The DRRP Transition Plan for Monitoring and Maintenance outlines the activities that need to take place to ensure this project meets the goals set out in DR-RAP. This guiding document identifies prioritized actions needed (in terms of capacity, governance, funding, communications, and project monitoring and

maintenance) to protect the investments in the Dolores River Watershed and continue building towards its shared goals. As part of the Transition Plan, members of the DRRP signed a new five-year MOU to confirm their commitment to the project and ensure the appropriate human and financial resources are procured to sustain the work of the partnership.

Discuss the multiple objective aspects of the project and how they relate to each other. Describe similar activities in the watershed and how this project or plan complements but does not duplicate those activities. Multiple objectives may include (but are not limited to) channel stabilization, riparian re-vegetation, habitat improvement, recreation opportunity enhancement, natural hazard reduction, flood mitigation, water supply delivery improvement, fish migration improvement, ephemeral/intermittent channel stabilization, and upland erosion mitigation.

Since 2012, the DRC has coordinated riparian restoration and weed management activities throughout the Colorado and Gunnison River regions in Mesa and Delta Counties. This collaboration has resulted in sharing and leveraging of resources, coordinated management, and connected planning efforts. The DRC coordinates efforts with neighboring partnership groups which include the Middle Colorado Watershed Council and the SE Utah Riparian Partnership.

Invasive plant removal, specifically TRO removal, can improve stream channel capacity and flow velocities, which, in turn, can lead to improvements in habitat, especially along cobble islands, secondary channels, and in backwater areas vital to native fishes, including the four endangered Colorado River fish species. Concurrently, flood impacts are mitigated as the channel is widened and as more pliant native vegetation replaces invasives, which do not readily yield during high water.

Improved vegetative cover can assist in the management of selenium and salinity; furthermore, wildfire risk is often reduced through TRO replacement. Among other impacts, riparian fires can contribute to decreased water quality.

Through restoration, refugium and food source diversity for terrestrial and aquatic organisms will likely improve for myriad species, including the threatened Western Yellow Billed Cuckoo, which prefers dense cottonwood forests with a native shrub understory.

Restoration will also increase access to recreational amenities, including the Colorado River and associated riverside recreation (e.g. parks and riverfront trails).

The work of the Dolores River Restoration Partnership (DRRP) directly advances the policies and goals stated above by working to remove invasive plants and restore native fish and wildlife habitat along the imperiled Dolores River, which is identified as a proposed IPP in the SWBIP (ID# 20-DM). Invasive plants such as tamarisk and other aggressive weeds have taken over the Dolores River, displacing native plants, impairing wildlife and fish habitat and forage and diminishing access for recreation and land use as well as the health of the riparian areas that are integral to the health of all aquatic life.

The Dolores River is designated as a Bird Habitat Conservation Area by the Intermountain West Joint Venture, providing important habitat for a variety of resident and migratory bird species. Additionally, three Colorado State Species of Concern (the flannel mouth sucker, bluehead sucker, and roundtail chub) depend on the health of the Dolores River and healthy streamside vegetation. Beyond wildlife, the river corridor is prized for its scenic vistas, unique geology, archaeology, and history - more than 30 miles of the river is traced by the Unaweep-Tabeguache Scenic and Historic Byway, with interpretive signage located along this river-side stretch of the highway. Historic land use such as grazing and

ranching are still mainstays for many families that reside within the watershed. Finally, the river is valued for recreational opportunities, notably camping, hiking, hunting, and rafting.

Describe the proposed monitoring or implementation plan. How will the project or plan measure success of its objectives?

Sites will be managed by CPW and BOR staff that frequently patrol the sites. Staff will look for resprouts and secondary weeds, in addition to monitoring the success of re-seeding efforts. Groundwater monitoring wells are also being established at BOR owned sites to ascertain depth-to-groundwater throughout the year in order to inform restoration activities. As Task 1 of this proposal focuses on post-wildfire reclamation, fire effects monitoring protocols will also be establish, in coordination with CSU Extension.

Photo point documentation and rapid monitoring findings, based on REW protocols, will be included in the annual report to CWCB. All monitoring data is also now being included in a comprehensive geodatabase that compiles treatment and monitoring data for the entire DRC focus area.

DRRP will monitor success by adhering to the plan outlined in the DRRP Monitoring and Maintenance Transition Plan.

Attachments

- Attachment A: Watershed Plan Links
- Attachment B: Scope of Work
- Attachment C: Overall Budget
- Attachment D: Detailed Budget
- Attachment E: Letters of Support
- Attachment F: Pertinent Photos
- Attachment G: Implementation Schedule
- Attachment H: Maps
- Attachment I: Project Lead Resumes

Attachment A: Watershed Plan Links

Desert Rivers Collaborative

- Implementation Plan

Dolores River Restoration Partnership

- Dolores River Riparian Action Plan
- Transition Plan 2015-2019

Colorado Watershed Restoration Grant Program Application
ATTACHMENT B: RiversEdge West Scope of Work

GRANTEE AND FISCAL AGENT:
Tamarisk Coalition; dba RiversEdge West (REW)
PO Box 1907
Grand Junction, CO 81502

PRIMARY CONTACTS:
Shannon Hatch (DRC) and David Varner (DRRP)
Restoration Coordinators
970-256-7400
shatch@riversedgewest.org; dvarner@riversedgewest.org

GRANT AMOUNT: $152,405

INTRODUCTION:
The Colorado and Gunnison Rivers are renowned for their ecological, recreational, aesthetic, cultural, and vital economic values. Unfortunately, many of these values have been negatively affected by the predominance of invasive plant species, including tamarisk and Russian olive (TRO). Proliferation and persistence of these species can result in reduced water quality and quantity, altered river regimes, and reduced ecological systems and habitats.

Building upon decades of partners' experiences, the Desert Rivers Collaborative (DRC) has been collaboratively working with local and regional partners since 2012 to bring a strategic and coordinated approach to riparian restoration such that measurable, landscape-scale improvements can be achieved and sustained.

For the last nine years the Dolores River Restoration Partnership (DRRP) has been working collaboratively with four BLM Field Offices across two states to remove tamarisk on 1,900 acres of the river to improve riparian habitat and restore the overall health of the watershed. To date, 1,849 acres have received initial treatment. Two key components of this project are carrying out active restoration on key sites to ensure native plants replace invasives and monitoring treated sites to treat for tamarisk resprouts and secondary weeds, which can easily dominate a site if unmanaged.

OBJECTIVES:
Intensive restoration work focused on restoring wildfire impacted lands and riparian areas impacted by large stands of tamarisk and/or Russian olive. Treatments are listed below, with totals for each restoration treatment listed. Project implementation objectives are as follows:

1. REW will coordinate invasive weed treatments and revegetation on 245 acres of riparian lands along the Colorado River impacted by wildfire in 2018.
2. REW will coordinate initial and follow-up treatment of tamarisk and/or Russian olive infestations on 24 acres of the Colorado River on lands owned by Colorado Parks and Wildlife.
3. REW will coordinate tamarisk treatment and follow-up maintenance on 248 acres of riparian lands in the Dolores River corridor. Activities will include initial tamarisk treatment, tamarisk retreatments, and secondary weed treatments to be conducted by conservation corps crews, conservation corps strike team, private contractors, and volunteers.

4. REW will coordinate active revegetation, using locally sourced, native seed, container plants, and cuttings, on 21 acres of previously treated tamarisk removal sites. REW will direct and coordinate revegetation site establishment and maintenance actions, including seeding, container planting, pole-cutting installation, and irrigation of recent plantings, on 21 acres of Dolores River riparian corridor restoration sites.

TASKS

- **Task 1 – Restoration of Wildfire Impacted Riparian Areas**
    - Description of Task: REW will coordinate treatment of invasive species resprouts (including tamarisk and Russian olive, or TRO) and secondary weed invasions on 245 acres of wildfire impacted sites in the DRC focus area. Funding will also be used to seed grass species to accelerate the restoration process.
    - Method/Procedure: Agency and contract hand crews will be used to chemically treat TRO resprouts and secondary weeds. Cut-stump and basal bark application, with appropriate herbicide, will be conducted for TRO, depending on the size of the resprouts. Herbicide treatment of secondary weeds will be conducted with a spray rig or with a backpack sprayer, depending on the ease of access, density, and potential impacts to native plant species that remain on site. After invasive species are treated, revegetation of the site will commence. In order to reduce non-target species damage if additional herbicides treatments are required, grass species, which are not impacted by broad-leaf herbicides, will be the focus of revegetation efforts for the first two years. Grasses will be drill seeded where equipment access is possible; broadcast seeding will be used in areas that cannot be accessed. In collaboration with the NRCS and the various land managing agencies, various native grass seed mixes are being developed based on existing soil types and habitats (e.g. wetland vs. riparian).
    - Deliverable: 245 acres of treated habitat at fire impacted sites, to include TRO removal, secondary weed treatment, and revegetation. Vegetation management goals are to: 1) reduce TRO to <5% total cover, 2) reduce secondary weeds to <15% and 3) improve native vegetation cover to > 80%. Ongoing monitoring and maintenance will be completed for a minimum of 5 years past the completion of the project.
- **Task 2 – Hazard Fuels Mitigation**
    - Description of Task: REW will coordinate the removal of TRO from 24 acres of CWP land, with emphasis on treatment of areas near large cottonwood trees and other native plant species. Secondary weed control will also be conducted.
    - Method/Procedure: Invasive TRO will be extracted with a thumb and grapple attached to a mini-excavator. Extracted materials will be piled for mulching and/or habitat piles away from cottonwood trees and other native vegetation. A saw crew will be used along the bank and in wetter areas so as to not jeopardize soil and bank stability. Any resprouts will be sprayed approximately one year after removal to ensure adequate biomass for herbicide delivery to the root system. Due to the number of native species at the site, limited revegetation need is anticipated.
    - Deliverable: 24 acres of treated habitat at fire impacted sites, to include TRO removal, secondary weed treatment, and revegetation. Vegetation management goals are to: 1) reduce TRO to <5% total cover, 2) reduce secondary weeds to <15% and 3) improve native vegetation cover to > 80%. Ongoing monitoring and maintenance will be completed for a minimum of 5 years past the completion of the project.
- **Task 3 – DRRP Tamarisk Treatments and Maintenance**

- Description of Task: REW will coordinate tamarisk treatment and follow-up site maintenance on 248 acres of riparian habitat in the Dolores River corridor (public and private properties).
- Method/Procedure: REW will engage Conservation Corps eight-person crews and two-person Strike Teams, private contractors, and volunteers to perform initial tamarisk treatments, tamarisk retreatments, and secondary weed treatments, and other site maintenance duties on 248 acres of infested riparian lands. Mature tamarisk will be extracted with a thumb and grapple attached to a mini-excavator. Extracted materials will be piled for mulching, burning, or shaped into habitat piles away from native vegetation. Conservation Corps saw crews will be used where site conditions are optimal. Tamarisk resprouts and secondary weeds will be treated over the following seasons for approximately one year after removal to ensure infestation trends are reversed.
- Deliverable - 248 acres of Dolores River riparian corridor habitat and hydrology improved through invasive vegetation treatment and ready for revegetation efforts.

- **Task 4 – DRRP Revegetation of Riparian Restoration Sites with Native Plants**
  - Description of Task: REW will direct and coordinate active revegetation, using native plant propagules and follow-up maintenance activities on 21 acres of riparian habitat in the Dolores River corridor (public and private properties).
  - Method/Procedure: REW will engage Conservation Corps eight-person crews and two-person Strike Teams, private contractors, students, and volunteers. Native, desirable plant seed, container plants, and stem cuttings will be installed at sites where invasive vegetation treatments have occurred to provide temporary and long-term site protection, habitat enhancement, and improved streambank and floodplain hydrology. Select sites will be revegetated, irrigated, and maintained with locally-sourced container plants and pole cuttings, to increase species diversity and foster resiliency that will prevent re-infestation by invasive vegetation. Cottonwood and willow poles will be acquired from a local contractor with stock from the region, and REW is engaged with several native plant nurseries able to supply locally-sourced materials. A stinger bar will be use to punch a hole in the ground until groundwater is met for cottonwood and willow pole installation.
  - Deliverable: 21 acres of revegetated Dolores River riparian corridor habitat and hydrology improved through revegetation efforts.

Colorado Watershed Restoration Grant Program Application
ATTACHMENT C: RiversEdge West Overall Budget

Budget and Timeline Table

Task	Description	Target Start Date	Target Completion Date	CWCB Funds	Other Funding Cash	Source	Other Funding In-Kind	Source	Total
1	DRC - Wildfire Restoration	March 2019	November 2020	$ 31,714	$ 20,950	See detailed budget	$ 30,415	See detailed budget	$ 83,080
2	DRC - Wildfire Mitigation	March 2019	November 2020	$ 16,121	$ 14,420	See detailed budget	$ 3,421	See detailed budget	$ 33,962
3	DRRP Tamarisk Treatments and Maintenance	March 2019	November 2020	$ 68,627	$ 64,425	See detailed budget	$ 10,154	BLM, CCA - see detailed budget	$ 143,206
4	DRRP Revegetation of Riparian Restoration Sites with Native Plants	March 2019	November 2020	$ 35,943	$ 34,223	BLM, NWTF, ROR - see detailed budget	$ 4,960	CCA - see detailed budget	$ 75,126
	TOTALS			**$ 152,405**	**$ 134,018**		**$ 48,950**		**$ 335,374**

Colorado Watershed Restoration Grant Program Application
ATTACHMENT D: RiversEdge West Detailed Budget

Tamarisk Coalition - Detailed Budget by Task

Task 1/Restoration of Wildfire Impacted Riparian Areas									
Staff Time	**# Hours**	**Rate**	**Total**	**CWCB Portion**	**CWCB %**	**Match Portion**	**Match %**	**Match Source**	**Notes**
Restoration Coordinator	120	$ 52	$ 6,251	$ 3,125	50%	$ 3,125	50%	REW, GVWUA	In-kind ($2,125 from REW), $1,000 cash GVWUA
Associate Director	10	$ 56	$ 564	$ 282	50%	$ 282	50%	REW	In-kind
CO State Forest Service Support	216	$ 52	$ 11,232	$ -	0%	$ 11,232	100%	CSFS	In-kind
CSU Extension/NRCS Support	50	$ 50	$ 2,500	$ -	0%	$ 2,500	100%	CSU Extension/N	In-kind
Colorado Parks & Wildlife	151	$ 27	$ 4,044	$ -	0%	$ 4,044	100%	CPW	In-kind
Grand Valley Water Users Association	17	$ 60	$ 1,000	$ -	0%	$ 1,000	100%	GVWUA	In-kind
Mesa County	50	$ 50	$ 2,500	$ -	0%	$ 2,500	100%	Mesa County	In-kind
US Bureau of Reclamation	80	$ 40	$ 3,200		0%	$ 3,200	100%	BOR	In-kind
Subtotal			**$ 31,290**	**$ 3,407**		**$ 27,883**			
Expenses	**Unit Cost**	**# of Units**	**Total**	**CWCB Portion**	**CWCB %**	**Match Portion**	**Match %**	**Match Source**	
Mileage	$ 0.55	118	$ 64	$ 32	50%	$ 32	50%	REW	In-kind; mileage to sites around town
Native grass seed (average of drill and broadcast rates)	$ 145	245	$ 35,525	$ 22,525	63%	$ 13,000	37%	BOR & Halliburton	$10,000 cash match BOR for seed; $3,000 from Halliburton
Drill seeding	$ 850	10	$ 3,500	$ -	0%	$ 3,500	100%	BOR	$2,500 in-kind from BOR for tractor rental, fuel, and other equipment; $1,000 in-kind from CPW
Herbicide	$ 500	15	$ 7,500	$ 3,750	50%	$ 3,750	50%	BOR	Cash match from BOR
Herbicide application	$ 2,000	2	$ 4,000	$ 2,000	50%	$ 2,000	50%	CPW	Cash - CPW can pay for $2,000 for application by contractor (consider pending)
Contract work to clear fence	$ 1,200	1	$ 1,200	$ -	0%	$ 1,200	100%	CPW	Cash - CPW can pay for $1,200 for application by contractor (consider pending)
Subtotal			**$ 51,789**	**$ 28,307**		**$ 23,482**			
Task total			**$ 83,080**	**$ 31,714**		**$ 51,365**			
Task 2/ Hazard Fuels Mitigation at CPW Site (29 Rd)									
Staff Time	**# Hours**	**Rate**	**Total**	**CWCB Portion**	**CWCB %**	**Match Portion**	**Match %**	**Match Source**	**Notes**
Restoration Coordinator	120	$ 52	$ 6,251	$ 3,125	50%	$ 3,125.40	50%	REW	In-kind
Associate Director	10	$ 56	$ 564	$ 282	50%	$ 282	50%	REW	In-kind
Subtotal			**$ 6,815**	**$ 3,407**		**$ 3,407**			
Expenses	**Unit Cost**	**# of Units**	**Total**	**CWCB Portion**	**CWCB %**	**Match Portion**	**Match %**	**Match Source**	**Notes**
Mileage	$ 0.55	50	$ 27	$ 14	50%	$ 14	50%	REW	Mileage based on GSA, around project area (70 mi/ 24 days avg.)
Herbicide treatment	$ 2,000	1	$ 2,000	$ -	0%	$ 2,000	100%	CPW	Cash match; spoke w Pete on 10/29; paying for herbicide spray on property this week
Contractor for TRO removal	$ 1,700	5	$ 8,500	$ 8,500	100%	$ -	0%		Includes mini-excavator and skidsteer
Contact hand crew	$ 800	5	$ 4,000	$ 4,000	100%	$ -	0%		
Mobilization	$ 200	1	$ 200	$ 200	100%	$ -	0%		

Revegetation	$ 2,000	1	$ 2,000	$ -	0%	$ 2,000	100%	CPW	Pending CPW cash match
One week of WCCC time	$ 10,420	1	$ 10,420	$ -	0%	$ 10,420	100%	CPW	Pending CPW cash match from GOCO grant
Subtotal			**$ 27,147**	**$ 12,714**		**$ 14,434**			
Task total			**$ 33,962**	**$ 16,121**		**$ 17,841**			
Task 3/ DRRP Tamarisk Treatments and Maintenance									
Staff Time	**# Hours**	**Rate**	**Total**	**CWCB Portion**	**CWCB %**	**Match Portion**	**Match %**	**Match Source**	**Notes**
Restoration Coordinator	460	$ 43	$ 19,743	$ 9,872	50%	$ 9,871.60	50%	BLM	In-kind
Associate Director	10	$ 56	$ 564	$ 282	50%	$ 282	50%	CCA	In-kind
Subtotal			**$ 20,307**	**$ 10,154**		**$ 10,154**			
Expenses	**Unit Cost**	**# of Units**	**Total**	**CWCB Portion**	**CWCB %**	**Match Portion**	**Match %**	**Match Source**	**Notes**
Mileage	$ 0.55	2560	$ 1,395	$ 698	50%	$ 698	50%	BLM	Cash - Mileage based on GSA, number of trips to/from remote project areas.
Conservation Corps crew-week	$ 7,500	10	$ 75,000	$ 37,500	50%	$ 37,500	50%	DOI, BLM	Cash - cost per week
Herbicide for Conservation Corps crews	$ 300	10	$ 3,000	$ 1,500	50%	$ 1,500	50%	BLM	Cash - cost per week
Materials for CC crews	$ 225	10	$ 2,250	$ 1,125	50%	$ 1,125	50%	BLM	Cash - cost per week
Contractor for TRO removal	$ 1,300	10	$ 13,000	$ 6,500	50%	$ 6,500	50%	BLM	Cash - cost per day
Equipment rental for chipping woody mate	$ 850	3	$ 2,550	$ 1,275	50%	$ 1,275	50%	CCA	Cash - cost per week
Restoration site maintenance Strike Team	$ 1,800	6	$ 10,800	$ 5,400	50%	$ 5,400	50%	ROR	Cash - cost per week
Herbicide for Strike Team	$ 500	6	$ 3,000	$ 1,500	50%	$ 1,500	50%		Cash - cost per week
Treatment Site maintenance equipment	$ 48	248	$ 11,904	$ 2,976	25%	$ 8,928	75%	ROR	cost per acre; $6500 in-kind from DRRP UTV use; $2428 cash from ROR; e.g., signage, fuel, UTV use, fencing
Subtotal			**$ 122,899**	**$ 58,474**		**$ 64,426**			
Task total			**$ 143,206**	**$ 68,627**		**$ 74,579**			
Task 4/ DRRP Revegetation of Riparian Restoration Sites with Native Plants									
Staff Time	**# Hours**	**Rate**	**Total**	**CWCB Portion**	**CWCB %**	**Match Portion**	**Match %**	**Match Source**	**Notes**
Restoration Coordinator	218	$ 43	$ 9,357	$ 4,678	50%	$ 4,678	50%	CCA	In-kind
Associate Director	10	$ 56	$ 564	$ 282	50%	$ 282	50%	CCA	In-kind
Subtotal			**$ 9,920**	**$ 4,960**		**$ 4,960**			
Expenses	**Unit Cost**	**# of Units**	**Total**	**CWCB Portion**	**CWCB %**	**Match Portion**	**Match %**	**Match Source**	**Notes**
Mileage	$ 0.55	2560	$ 1,395	$ 698	50%	$ 698	50%	BLM	Cash - Mileage based on GSA, number of trips to/from remote project areas.

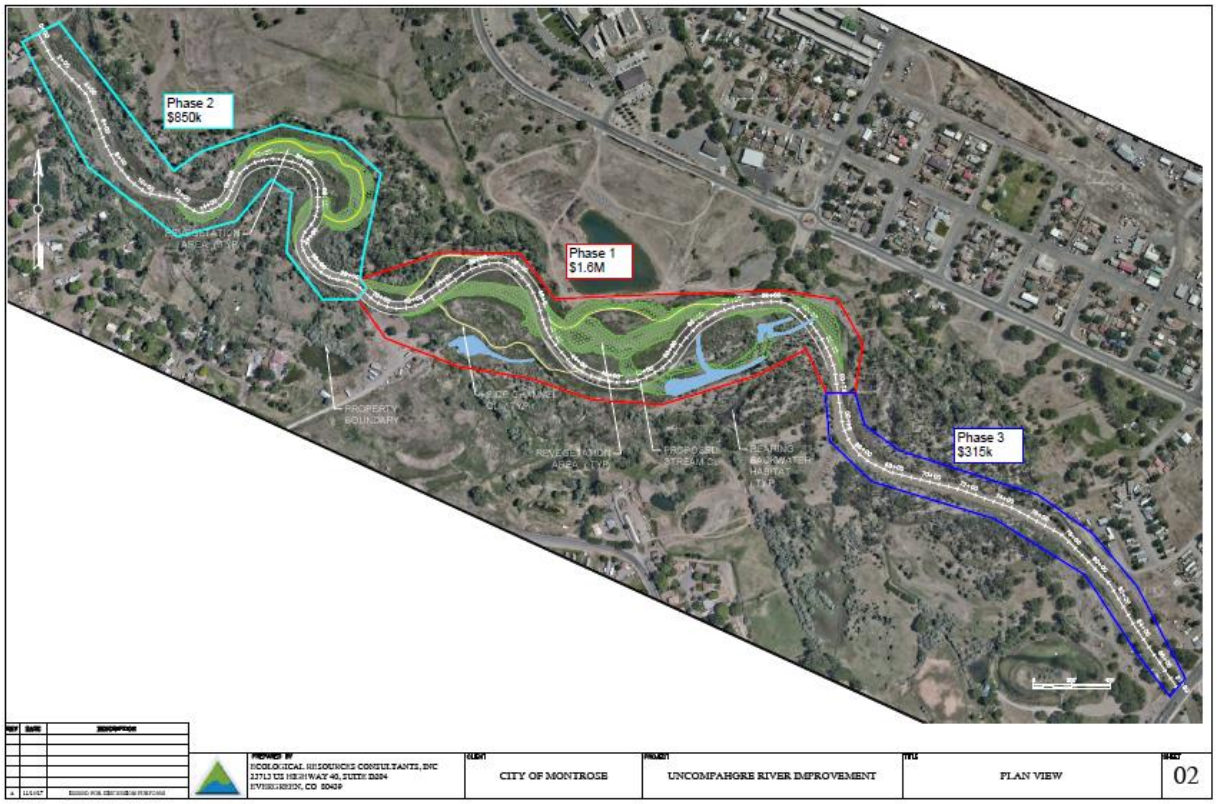
Tamarisk Coalition - Detailed Budget by Task

Conservation Corps crew-week	$ 7,500	2	$ 15,000	$ 7,500	50%	$ 7,500	50%	BLM	Cash - cost per week
Restoration Site Maintenance Strike Team	$ 1,800	6	$ 10,800	$ 3,780	35%	$ 7,020	65%	NWTF	Cash - cost per week
Irrigation equipment	$ 225	6	$ 1,350	$ 675	50%	$ 675	50%	ROR	Cash - cost per week
Revegetation site maintenance equipment	$ 220	21	$ 4,620	$ 2,310	50%	$ 2,310	50%	ROR	Cash - cost per acre; e.g., fencing
Native vegetation seeds	$ 1,250	7	$ 8,750	$ 4,375	50%	$ 4,375	50%	BLM	Cash - cost per 50 lb bag
Native vegetation container plants	$ 11	850	$ 9,350	$ 4,675	50%	$ 4,675	50%	BLM	Cash - cost per container (averaged for long-stem and other)
Native vegetation cuttings	$ 36	40	$ 1,440	$ 720	50%	$ 720	50%	BLM	Cash - cost per 20 count bundle
Contractor to install cuttings	$ 1,250	10	$ 12,500	$ 6,250	50%	$ 6,250	50%	BLM	Cash - cost per day
Subtotal			**$ 65,205**	**$ 30,983**		**$ 34,223**			
Task total			**$ 75,126**	**$ 35,943**		**$ 39,183**			
			Task 1 - 4 Totals:	**$ 335,373**	**$ 152,405**	**45%**	**$ 182,968**	**73%**	cash
								27%	in-kind

Match Totals	**In-kind**	**Cash - Secured**	**Cash - Pending**
RiversEdge West	$ 5,860	$ -	$ -
GVWUA	$ 1,000	$ 1,000	$ -
Colorado Parks and Wildlife	$ 5,044	$ 2,000	$ 15,620
Halliburton	$ -	$ 3,000	$ -
US Bureau of Reclamation	$ 5,700	$ 13,750	$ -
Colorado State Forest Service	$ 11,232	$ -	$ -
CSU Extension/NRCS	$ 2,500	$ -	$ -
Mesa County	$ 2,500		
CO Collaboration Award (CCA)	$ 5,242	$ 1,557	
Restore Our Rivers Fund (ROR)		$ 16,550	
US Bureau of Land Management	$ 9,872	$ 41,021	
US Dept. of Interior DARP (DOI)			$ 32,500
National Wild Turkey Federation (NWTF)		$ 7,020	
Total	**$ 48,950**	**$ 85,898**	**$ 48,120**
	Total	$	182,968

City of Montrose Uncompahgre River Improvements Project

Project Location: City of Montrose



Grant Type: Watershed/Stream Restoration/ and/or Protection (Restoration) Grants
Grant Request Amount: $400,000
Cash Match Funding: $1,200,000 (Provided by City)
In-kind Match Funding: 42 acre land donation - $657,228 (per recent appraisal)
Project Sponsor: City of Montrose
Contact Person: Kendall Cramer, Grant Coordinator, (970) 497-8531, kcramer@ci.montrose.co.us

Project Description:

The City of Montrose plans to complete Phase 1 of 3 of river restoration improvements on 0.65 miles (3,400 feet) of the Uncompahgre River traversing through Montrose. River restoration includes reestablishing a resilient channel alignment, creating an active channel width which is balanced with flow and sediment load, connecting the river to its floodplain, creating a stable riparian zone adjacent to the channel, improving fish and other aquatic habitat, stabilizing the river banks, and providing river access to the public. The design contract for the project was awarded to Ecological Resource Consultants (ERC) in 2017 and the project is currently 70% designed. The City anticipates construction to begin in winter 2019-2020. The project complements a multi-million dollar mixed-use development project, the Montrose Urban Renewal Authority Development (MURA), which includes nearly 42 acres of new, donated, public open space along the river and the extension of the river trail, partially funded by a $2 million Great Outdoors Colorado Grant.

Qualifications Evaluation (Maximum of 20 points)

The City of Montrose is the lead project sponsor. Montrose is a home-rule community on the Western Slope of the Rocky Mountains in Colorado, located approximately 296 miles southwest of Denver (via Interstate 70) in Montrose County. One of the City's greatest assets is the Uncompahgre River which meanders along the west side of the City. Once neglected, the importance of the river as a community asset is now being recognized. See Attachment A for project location map and coordinates.

This project is being driven by a diverse group of organizations which meet on a regular basis as part of the River Restoration Committee to provide the design firm with valuable feedback on the restoration's design. See Attachment B for letters of support. The group includes the following stakeholders: Ecological Resource Consultants, Colorado Parks and Wildlife, Gunnison Gorge Anglers, Friends of the River Uncompahgre, Mayfly Outdoors, and local outfitters. Other stakeholders include: US Army Corps of Engineers, US Fish and Wildlife Service, Colorado State Historical Preservation Office, and adjacent landowners. Mayfly Outdoors is a major stakeholder in the project. The company which is currently building their new fly-fishing reel manufacturing facility within the MURA Development, will be donating nearly 42 acres to the City to be used as public open space. The most recent appraised value of this property was $657,228. The land donation is pending, but is expected to take place by the end of the December 2018.

With the technical expertise required for a large scale river restoration project, there isn't a significant amount of opportunity to provide volunteer labor or other in-kind services. There is potential for materials such as rocks, boulders, and other materials to be donated. The City will match the grant with $1.2 million in local dollars using tax increment funding through the MURA. This funding has been secured. The City will also apply for an additional $200,000 in grants to offset this match by submitting applications for Great Outdoors Colorado Habitat Restoration Grant and the Colorado Parks and Wildlife Fishing is Fun grant in 2019.

The City hired Ecological Resource Consultants Inc. (Evergreen, CO) to complete the initial design and intends to hire ERC to oversee construction for this project. ERC has completed approximately 60 stream restoration projects throughout Colorado including two past projects on the Uncompahgre River. Their expertise in water resources, geomorphology, ecology, permitting and construction practices will help the City ensure the final restoration project is one which results in a sustainable, resilient stream system which optimizes environmental potential of the system. Please see Attachment C for examples of ERC's past stream experience and view ERC Proposal.

Organizational Capability (Maximum of 30 points)

The City of Montrose has a long-standing record of work to preserve, protect, and enhance the Uncompahgre River Corridor, beginning with the acquisition of land along the river to build Riverbottom Park in the early 1970s. In 2006, the City received a Fishing is Fun grant from Colorado Parks and Wildlife for fish habitat development and riverbank stabilization along a 1.3 mile section of the river adjacent to Cerise Park. The fish habitat enhancement involved placing boulders and structures along the river at strategic locations. Unsightly materials, steel pipe, and concrete which had been used for bank stabilization were removed and replaced with natural materials and vegetation. The project aimed to enhance the appearance and stability of the river corridor while also improving access to the river and increasing angler-fishing opportunities. ERC completed the design, permitting and implementation of this project. In the winter of 2013/2014 the City completed additional stream restoration on 0.3 miles of the river again designed and constructed by ERC. The success of the former project and the relationship between the City and ERC speaks to our confidence in implementing the proposed project. In 2015, the

City completed the Montrose Water Sports Park at Riverbottom Park. The park included the construction/installation of six precast concrete and native stone "wave stimulator" structures to create waves, eddies, jets, and recovery areas. Terraced stone spectator areas, beach areas, rock-climbing boulders, plentiful green space, and ADA-accessible put-in and take-out ramps allow a broad range of users to safely enjoy the river in a variety of ways. The water sports park has brought awareness to the river corridor and has helped build momentum for the proposed river restoration project.

The City of Montrose has dedicated the City engineer to implement the proposed project with the support of several City staff members. ERC will provide project management and field guidance for the construction team. See Attachment D for descriptions of personnel involved. The construction of the project is subject to the City's procurement policy and will be competitively bid. The City will select a contractor through a best value process, evaluating both the bidders price and qualifications to perform the work. The project budget was developed by ERC as part of its 70% design level process. As a design/build group, ERC has over a decade of experience with all aspects of restoration, including cost estimating. Cost estimates provided in the table were developed by ERC using actual costs from past projects and, as a result, are expected to contain a high degree of accuracy (Attachment E).

Proposal Effectiveness (50 points)

The river restoration project is currently being designed by Colorado-based Ecological Resources Consultants, Inc. (ERC). The firm was selected through the City's competitive procurement process. The current design plan is provided as Attachment F. The current plan was based on detailed evaluation of stream corridor conditions, including the critical parameters of flow, sediment loading and historic channel evolution. Flows in the Uncompahgre through Montrose are highly altered due to irrigation. These flows were evaluated and have been factored into the bankfull channel and connection of flood flows to the floodplain. Review of past channel conditions, sediment deposition and stream alignments were also very influential in the current design plans. The stream has taken on dramatically different alignments through the project area over the past 60 years. Most of the alignment changes can be tied directly to flow alterations and historic encroachments in the floodplain.

Channel evolution was evaluated and used to define meander wave lengths, amplitude and bend radii which are appropriate for the flow and sediment load. Hydraulic evaluations were performed to define channel geometries and ensure the constructed system will interact with its floodplain in a manner which sustains the riparian corridor and uses the natural floodplain function. Evaluation of existing vegetation was helpful in defining the native species which will be utilized to create the large riparian/floodplain terraces which are part of this project.

In addition to work on the design of the channel and riparian area, the City has been working towards completing other tasks and studies which are imperative to the ultimate success of the project. Property acquisitions are underway as well as the FEMA Conditional Letter of Map Revision (CLOMR) process to determine if the project will impact the hydrology of the river and the existing floodplain/floodway. Permitting with the U.S. Army Corps of Engineers will be initiated this fall. Both processes are expected to be complete by March of 2019.

The Uncompahgre River is a tributary of the Gunnison River which runs approximately 75 miles starting at Lake Como in the San Juan Mountains and heading northward through the towns of Ouray, Ridgway, Montrose, Olathe, and Delta before joining the Gunnison River. The Uncompahgre provides field irrigation to the valley and supports a robust agriculture economy. The history of Montrose is connected to the Uncompahgre River corridor. Camps and ranches settled in the area to support area

mining operations. With completion of the Gunnison Tunnel in 1909, the valley supported extensive agriculture. The current condition of the river varies in response to historic and current land uses.

Development within the valley and floodplain constrictions along the river have affected the river by altering flows, flood elevations and patterns, changed the mineral content, impacted the channel structure, and reduced the permeability and vegetated cover of the drainages within the watershed. See the Uncompahgre River Watershed Plan. The Uncompahgre Valley Water Users Association completed the Gunnison Tunnel in 1909 which supports 575 miles of irrigation canals and laterals which irrigate agricultural lands in the Uncompahgre Valley. The effect of the agricultural system irrigating the Mancos shale soils is increased pH, salinity and specifically selenium levels in water bodies, creeks, ditches and the River. Additionally, Ridgway Reservoir, completed in 1987, regulates flows from the Uncompahgre headwaters. The regulation removes some flooding which could affect the adjacent vegetation and sediment/nutrient loading. The reservoir potentially settles out heavy metals and other contaminants leached from mining operations upstream and releases significantly cooler water, which is a benefit to native fish offsetting the warming effect caused by loss of much of the canopy along the corridor which shaded the river.

The Uncompahgre River through Montrose consists of both channelized, relatively stable reaches of about 60-70 feet wide and meandering, dynamic reaches of up to 500 feet in width. Flow through the project area primarily consists of contributions from the Gunnison Tunnel/South Canal, releases from Ridgway Reservoir, and tributary stormwater flows. The Ridgway Reservoir provides relatively consistent flows on the river between April and September. A variety of land use practices, flow modifications, and encroachment have impacted the Uncompahgre River and resulted in an overly wide channel, bank stabilization issues, and lack of aquatic and riparian habitat. Within the project area, approximately two-thirds of the river contains what would be considered marginal fish habitat; the remainder is generally devoid of any suitable fish habitat. Approximately 2,850 linear feet of the project area is also currently experiencing lateral bank retreat. Aerial imagery indicates the river's channel has moved by approximately 400 feet over the past 50+ years (see Attachment G).

The value of the Uncompahgre River as an economic, recreational, and natural asset was not realized for many years. Activities in and along the river drastically changed the quality of the river and led to many undesired consequences. According to ERC, the firm selected to design the Uncompahgre River Improvements Project, "The project presents an opportunity to address these issues, improve access and recreation in and adjacent to the stream, and create a highly functional ecosystem that greatly benefits the community." The Uncompahgre River Improvements Project addresses many of the issues caused by past land uses.

The project is being designed to develop a stream and riparian corridor which are resilient and appropriate for the altered flow regime and high sediment load which occurs in the Uncompahgre River. The intent of the project is to mitigate the following observed issues in the project reach: Unstable active channel, active bank erosion and lateral migration, limited number of riffle/pool sequences, suboptimal overall aquatic habitat, limited off-channel backwater habitat, overly wide active channel area, sediment imbalance (aggradational areas within project reach), high shear stresses against banks, and minimal riparian habitat through significant stretches.

The project will address these issues using a natural restoration design approach. The active channel has been sized based on an evaluation of the altered stream hydrology and is more consistent with upstream channel shape, which will encourage sediment conveyance through this aggrading reach. Areas outside of the bankfull channel will be graded to act as flood terraces and vegetated using appropriate

native riparian vegetation. The size of the bankfull channel will allow overbank flooding onto these terraces to help reduce shear stresses in the channel and replicate natural floodplain connectivity.

The channel profile, which is largely a low gradient riffle, will be shaped to create a riffle pool bedform which is appropriate given the channel type. Riffle features will oxygenate the stream, encourage macro invertebrate production and establish grade control for the stream. Pools will be located below riffles and will provide habitat and refuge which are particularly important during winter months when flows are low. Transitional glides and micro habitat features constructed using boulder and wood will mimic a natural stream and provide habitat variety and complexity in the system. The design also includes secondary channels and off-channel backwater features for added diversity. Secondary channels will offer critical diversity and refuge at high flow conditions while backwater areas will serve as rearing areas for young-of-the-year fish and other aquatic life which is challenged to thrive in the artificially high flows which exist in the Uncompahgre River during the main irrigation season.

Bank stabilization is another important component of the project. Areas of current active bank erosion are generally the result of floodplain encroachment and the unstable channel alignment. Areas will be stabilized be realigning the river to decrease meander bend radii and actively treating unstable areas. A variety of bank stabilization methods ranging from more structural work with rock and vegetation will be used in areas where instability is severe and the potential for future issues are greatest. Non-structural approaches including cobble toes with vegetated overbanks and root wad stabilization will be used where feasible such that banks are stabilized in a manner which also enhances the overall river environment.

The improvements will provide recreational opportunities for both locals and visitors. Creating improved fishing habitat and access to the river will attract more anglers and boaters to Montrose. It's been noted the Uncompahgre River is a little known treasure on the Western Slope, but its reputation as being an excellent fishery is quickly spreading. A May 2018 article on Flyfisherman.com by Doug Dillingham titled "A Colorado Gem: The Uncompahgre River" states, "...the Uncompahgre River is unquestionably the least known and most unheralded tailwater in the Centennial State." The article credits upstream mine cleanups and habitat restoration efforts following the construction of the Ridgway Dam and Reservoir with creating a tailwater which supports a variety of stocked and wild trout including Snake River cutthroats, rare Colorado cutthroats, rainbows, and browns. The article notes the stretch of river slated for improvements in Montrose is home to wild rainbows and browns.

Coinciding with the river improvements, the soon-to-be constructed Connect Trail will invite people to take a walk or jog along the river, have a picnic, and enjoy nature in newly established open space. Outdoor recreation in Colorado is a major economic driver contributing more than $28 billion to the state's economy in consumer spending, $9.7 billion in wages and salaries, and $2 billion in state tax revenues annually, while also supporting 229,000 direct jobs, according an outdoor economic contribution report by the Outdoor Industry Association. More than 71% of Colorado residents participate in outdoor recreation each year. Colorado's surge in population growth can partially be attributed to individuals seeking the outdoor lifestyle which provides unlimited recreational opportunities. Investing in outdoor recreation projects is a worthwhile endeavor to attract new families and employers, while contributing to a high quality of life for Coloradans.

Colorado is booming with population growth, particularly on the Front Range. While growth on the Western Slope isn't as robust, the opposite could be said for the impact of outdoor recreation. Montrose is located in Colorado's 3rd Congressional District, which spends approximately 2.19 billion on outdoor recreation each year and is home to more than 241 outdoor companies. Camping, trail sports, and

fishing are the most popular outdoor activities in the district, according to a report compiled by the Outdoor Industry Association.

The Colorado Outdoors project will have a multi-faceted impact on the local and regional economy. The Uncompahgre River, and its potential, is the catalyst for the development and thus, is already providing economic benefits. The mixed-use development, which will include new homes, businesses, and recreational amenities is anticipated to have a $200+ million impact once complete. The restoration of the Uncompahgre River will spawn further economic benefits.

The project will be implemented through hiring of a stream-restoration contractor through the City's competitive bidding process. ERC will serve as the on-site project manager throughout the project and will work closely with the contractor to ensure the plans are implemented as designed and intended. The overall restoration project will be implemented over three phases and take place in winters 2019/2020, 2020/2021, and 2021/22. Phase 1, which is the subject of this grant application, will be completed over the 2019/2020 winter when flows on the river are significantly lower.

Pre and post project monitoring are critical components of assessing ultimate project success. While it is expected the ultimate monitoring program will evolve as the design and construction is complete, critical project components and the conceptual plan for their monitoring are described below.

Channel Profile – The stream profile is an indicator of whether designed bedform is sustainable and whether the stream is vertically stable. Longitudinal profiles will be generated for pre-project and as-built conditions. The profile survey will be repeated annual for a period of three years to evaluate adjustments and stability.

Stable Channel Width – The width of the bankfull channel and geometry of the overbanks provide an indicator of lateral channel stability. Four representative cross sections will be established in the project area. These sections will be surveyed pre-project, in as-built conditions and for a period of three years post project to evaluate adjustments and stability.

Riparian Vegetation – The health of the riparian vegetation established as part of this project is important to the overall health and function of the riverine corridor. Four representative vegetative monitoring plots will be established for repeated assessments. Percent cover, percent cover by native material and percent weed infestation will be quantified within each plot. Plots will be evaluated in their as-built condition and for a period of three subsequent years to quantify the degree of success in plantings.

Bank Stability – Stable banks are a sign of less erosion loss and a stable channel alignment. The linear footage of unstable banks within the project area will be quantified for pre-project, as-built and three years after the project is complete. Trends in the amount of stable and unstable banks will be used to evaluate success of this restoration component.

Sediment Transport – Instream sediment sizes provides an indicator of overall sediment transport in the system. To quantify material movement pebble counts will be completed at four riffles throughout the project reach. The range, gradation and D50 of sediment at each of the four riffles will be measured as part of the annual monitoring program and compared to prior surveys to evaluate changes in substrate material sizes which may be occurring.

Photo Points – Photo points are a means of visually determining evolution of the channel corridor. Permanent photo points will be established at key constructed features including riffle/pool sequences, bank stabilization areas, riparian zones and backwater areas. Photos from each monitoring period will be compared with past photographs to illustrate changes which are occurring and determine success of the project.

SCOPE OF WORK

GRANTEE and FISCAL AGENT (if different): City of Montrose

PRIMARY CONTACT: Kendall Cramer, Grant Coordinator

ADDRESS: 433 South First Street, Montrose, CO 81401 / P.O. Box 790, Montrose, CO 81402

PHONE: (970) 497-8531

PROJECT NAME: Uncompahgre River Improvements Project

GRANT AMOUNT: $400,000

INTRODUCTION AND BACKGROUND

The City of Montrose plans to complete Phase 1 of 3 of river restoration improvements on 0.65 miles of the Uncompahgre River. The Uncompahgre River Improvements Project includes re-establishing a resilient channel alignment, creating an active channel width which is balanced with flow and sediment load, connecting the river to its floodplain, creating a stable riparian zone adjacent to the channel, improving fish and other aquatic habitat, stabilizing the river banks, and providing river access to the public. The project complements the Montrose Urban Renewal Authority Development, a 164-acre, mixed-use development which includes approximately 42 acres of open space along the river (under construction) and the Connect Trail - partially funded by a $2 million grant from Great Outdoors Colorado slated for 2019.

The Uncompahgre River provides field irrigation to the valley and supports a robust agriculture economy. A variety of land use practices, flow modifications, and encroachment have impacted the Uncompahgre River and have resulted in an overly wide channel, bank stabilization issues, and lack of aquatic and riparian habitat. Aerial imagery indicates the river's channel has moved by approximately 400 feet over the past 50+ years.

The City of Montrose now recognizes the value of the river for its environmental, recreational, and economic benefits. The city successfully completed prior river restoration upstream in 2006 and 2014. The proposed project is 70% designed. The city selected Ecological Resources Consultants (ERC) to complete the design. A diverse group of approximately 30 community stakeholders have provided feedback throughout the design process. The three- phased project is slated to begin in winter 2019/2020 and continue the following two winters. The total 1.5 mile river restoration project is estimated to cost $2.7 million.

OBJECTIVES

List the objectives of the project. Please include objectives for all aspects of the project whether funded by the CWCB or not.

The vision of the river restoration project is multi-faceted. It aims to improve habitat for aquatic and riparian wildlife, stabilize banks to protect adjacent properties, and improve the functionality of the river for recreation users. Listed below are several objectives behind the vision for the project.

- Improve fish habitat through the project area by adding new habitat, enhancing existing habitat, and performing any channel reconstruction necessary to produce a sustainable (no stocking) catch-and-release, artificial flies and lures only trout fishery to the extent practicable.
- Stabilize river banks where necessary to prevent lateral retreat.
- Design/construct river improvements in such a manner as to maintain a natural, user friendly, and inviting feel for the river system (i.e., use natural materials wherever possible, no concrete structures).
- Design/construct river improvements in such a manner as to maintain functionality during both high and low flows to the extent practicable.
- Design/construct river improvements in such a way as to allow boaters to pass through the project area with relative ease while not encouraging whitewater surfing.
- Avoid adverse impacts to neighboring properties along the river.
- Avoid causing a rise in water levels on the Uncompahgre River.

TASKS

Provide a detailed description of each task using the following format. Detailed descriptions are only required for CWCB funded tasks. Other tasks should be identified but do not require details beyond a brief description.

TASK 1 – Stream Excavation – Cut to Fill

Description of Task – The new, stable channel configuration will be excavated as shown on the conceptual design plans. Material that is excavated will be screened on site to generate different sized materials that will meet the specifications for use in riffle construction, cutoffs, mineral soil for riparian areas and cobble toe bank stabilization. Materials that is excavated and not required for these features will be used to fill in the existing channel alignment.

Method/Procedure – It is anticipated that the contractor will use excavators, loaders and haul trucks to accomplish this task.

Deliverable – This task will generate the major shape of the new channel as well as establish areas for riparian revegetation.

TASK 2 – Riffle Pool Features – Main Channel

Description of Task – Riffle/pool features will be constructed within the main channel. This will be accomplished by fine in-channel grading to accomplish desired slopes. The coarser fraction of material excavated from the channel as part of Task 1 will be utilized to form the riffles. Pools and glides will be constructed downstream of the riffles to complete the sequences.

Method/Procedure - It is anticipated that the contractor will use excavators, loaders and haul trucks to accomplish this task.

Deliverable – This task will result in completed riffle/pool sequences within the main channel.

TASK 3 – Riffle Pool Features – Side Channel

Description of Task – Riffle/pool features will be constructed within the side channels. This will be accomplished by fine in-channel grading to accomplish desired slopes. The coarser fraction of material excavated from the channel as part of Task 1 will be utilized to form the riffles. Pools and glides will be constructed downstream of the riffles to complete the sequences.

Method/Procedure - It is anticipated that the contractor will use excavators, loaders and haul trucks to accomplish this task.

Deliverable – This task will result in completed riffle/pool sequences within the side channel.

TASK 4 – Fine Grading at Backwater Areas

Description of Task – Designated areas away from the main channel are intended to serve as backwater rearing habitat. As part of this task areas between the main channel and the designated backwater areas will be graded to allow water to fill these areas through a direct surface water connection to the main channel. Minor excavation within the backwater areas themselves will also occur to help ensure these areas provide high quality habitat.

Method/Procedure – It is expected that the contractor will utilize an excavator to complete the grading that connects the main channel to the backwater areas. Connections will generally be made upstream of riffle features such that the riffles can serve as hydraulic grade controls to force water into the backwater areas.

Deliverable – This task will result in a direct surface water connection between the main channel and the backwater habitat areas.

TASK 5 – Grade Controls at Side Channels and Backwater Areas

Description of Task – The long-term sustainability of the side channels and backwater areas is contingent on water flow. To help control flows to these areas, grade control structures will be built using larger cobble material recovered from the channel excavation. This coarser rock will be placed and compacted such that the top of these grade control features force flows to the side channels and backwater areas.

Method/Procedure – It is anticipated that the contractor will use haul trucks to transport cobble to these areas and then utilize an excavator to place and grade the grade control features to the appropriate elevations.

Deliverable – Completed structures to control grades into and out of side channels and backwater areas.

TASK 6 – Type A Bank Stabilization

Description of Task – Bank stabilization will be utilized to control active lateral bank retreat and mitigate erosion. Type A stabilization is the most structure stabilization to be used. It will be used where there is the greatest potential for future bank erosion, existing banks are high, protection of property and/or infrastructure is required and there is not room to lay banks back in order to achieve the stabilization required.

Method/Procedure – Type A stabilization includes use of large rock that will be stacked to create a structural, stable bank. Rock will be stacked above bankfull elevation and tie directly into the adjacent slope.

Deliverable – Type A bank stabilization work will result in stabilized sections where room is limited and property and/or infrastructure needs protection.

TASK 7 – Type B Bank Stabilization

Description of Task – Bank stabilization will be utilized to control active lateral bank retreat and mitigate erosion. Type B stabilization is a combination of structural control and bank revegetation. It is the second most structure stabilization to be used. It will be used where there is high potential for future bank erosion but sufficient room is available to only require rock stabilization for a short height above bankfull.

Method/Procedure – Type B stabilization includes use of large rock that will be stacked just above bankfull to create a structural, stable bank. Areas above this rock will be graded to allow a revegetated terrace that incorporates softer, bioengineering into the stablization design.

Deliverable – Type B bank stabilization work will result in stabilized sections where property and/or infrastructure needs protection but sufficient room exists to allow the use of bioengineering techniques and grading above channel bankfull.

TASK 8 – Type C Bank Stabilization

Description of Task – Bank stabilization will be utilized to control active lateral bank retreat and mitigate erosion. Type C stabilization is a soft approach that utilizes native cobble to form the channel bank in areas where shear stresses are expected to be low and there is limited potential for impacts to property and infrastructure.

Method/Procedure – Type C stabilization includes use of larger cobble that was excavated as part of the channel creation. Cobbles will be placed and compacted up to the bankfull channel elevation. A vegetated riparian area will be constructed above bankfull allowing higher flows to move out of the active channel into the adjacent terrace.

Deliverable – Type C bank stabilization work will result in stabilized sections where there is low risk of further property and/or infrastructure and a natural approach to restoration is appropriate.

TASK 9 – Type D Bank Stabilization

Description of Task – Bank stabilization will be utilized to control active lateral bank retreat. mitigate erosion and provide aquatic habitat. Type D stabilization is a soft approach that utilizes native cobble in combination with large logs and root mass to form the channel bank and develop submerged habitat features. Type D stabilization will be used in areas where shear stresses are expected to be low and there is limited potential for impacts to property and infrastructure.

Method/Procedure – Type D stabilization includes use of larger cobble that was excavated as part of the channel creation. Cobbles will be placed and compacted up to the bankfull channel elevation. Large woody debris will be incorporated in the design. Logs will provide both stability and habitat structure. A vegetated riparian area will be constructed above bankfull allowing higher flows to move out of the active channel into the adjacent terrace.

Deliverable – Type D bank stabilization work will result in stabilized sections and improved bank habitat where there is low risk of further property and/or infrastructure and a natural approach to restoration is appropriate.

TASK 10 – Micro Habitat Features

Description of Task – Micro habitat features will be incorporated into the channel design to add diversity and complexity to the channel and improve the overall aquatic habitat.

Method/Procedure – Larger boulders and woody debris will be placed at strategic locations within the channel. Materials will likely be installed using and excavator. Features will be set in riffles, pools and glides to provide localized flow changes that result in pocket water, eddies and snags. Features will be located in both the main and side channels.

Deliverable – The constructed micro habitat features will generate specific locations within the main and side channels.

TASK 11 – Vegetation of Riparian Areas

Description of Task – Areas outside of the active main channel, side channels and backwater areas will be reclaimed as natural floodplain areas. These vegetated areas will be set at elevations above bankfull and vegetated with native grasses and shrubs.

Method/Procedure – Material excavated when digging the new channel will be sorted. Material not utilized in riffles, grade control features and bank stabilization will be placed in areas to be reclaimed as riparian zones. Loaders will likely be used to haul material to the appropriate location. Excavators and grading equipment will spread the material to the intended contours. Mineral soil will be mixed into the final graded material. Grass seed will be spread and thickets of shrub pockets will be planted.

Deliverable – Finished riparian areas will provide habitat, add shading for the river, improve water quality by filtering flood flows and minimize flooding risks by retarding peak flows.

TASK 12 – Mobilization and Demobilization

Description of Task – Equipment and material necessary to complete the river and riparian restoration will be brought in and then removed from site after the work is completed.

Method/Procedure – Equipment will be brought in and removed by the contractor.

Deliverable – Equipment and supplies necessary for the work will delivered.

TASK 13 - Water Control

Description of Task – Work will be completed during the winter season when flows are lowest. Given that work entails creating a new channel and constructing side channels, work will have to move the existing active channel to allow all channel and associated work to be completed.

Method/Procedure – At times flows will be diverted around work areas. At other times in the project flows will be allowed to run through the active work zone and work will be completed

"in the wet". At the end of the work all flows will be directed such that it flows through the new channel, side channels and backwater areas. Water control will be accomplished by the use of grading equipment and excavators.

Deliverable – Water will be managed throughout the project.

TASK 14 - Erosion Control and Reclamation

Description of Task – Work will be accomplished within the sensitive environment of the Uncompahgre River. Sediment both from within the channel itself and from existing eroding banks will be managed to minimize turbidity and loss of soil. Areas outside of the channel that are impacted such as access roads and staging areas will be reclaimed.

Method/Procedure – Temporary sediment containment berms will be constructed in the channel downstream of the active work zone. Oil absorbent booms will be placed across the river as a preventative measure to capture organics that could potentially be released. Silt fence and/or sediment control logs will be installed out of the channel downgradient from active work areas to capture disturbed soils. After the work is completed all land areas that were disturbed during construction activities will be seeded and stabilized.

Deliverable – Construction activities will minimize impacts to water quality and disturbed land areas will be stabilized.

TASK 15 - Construction Oversight

Description of Task – During the course of construction the design team will be involved in the construction process to ensure that the built conditions achieve the intended restoration goals.

Method/Procedure – Members of the design team will work with the contractor throughout the restoration process.

Deliverable - None

Brief Resumes

Scott Murphy, PE (City Engineer): City of Montrose engineer Scott Murphy, with the support of on staff inspectors, will provide all project management for the implementation of the project. Since joining the City in 2013, Scott has managed the design, bidding, and construction of more than $30 million in public infrastructure projects, many of which have included DOLA funding. Scott holds a Bachelor of Science degree and a Master of Engineering degree in Civil Engineering from Utah State University. Prior to joining the City, Scott worked as a consulting project engineer in Salt Lake City. Scott serves as the project manager for the river restoration project and has been instrumental in the design process.

Kendall Cramer (Grant Coordinator): Kendall will be responsible for administering the grant. He has more than six years of experience in administering state and federal grants, with a primary emphasis on applying and administering Community Development Block Grants. He has extensive familiarity with grant processes and ensuring regulatory compliance. Kendall has been with the City of Montrose since July 2017. In his time with the city, Kendall has helped secure $1.6M in grants and is responsible for their administration. Kendall also drafted the City of Montrose Grant Management Policy outlining the city's grant priorities and processes. He understands the importance of strengthening collaboration between the City, other units of government, and community organizations to improve the quality of life for Montrose residents. Prior to accepting his position, he was the community development coordinator for a council of governments in north central Illinois.

Shani Wittenberg (Finance Director): Shani will provide financial oversight of the grant. She has worked in the City's finance department for 21 years, serving as the finance director since 2005. Prior to being promoted to the Finance Director position, she performed the payroll function as well as support for the budget document. Currently Shani manages all functions of the finance department, including fund accounting, accounts payable and receivable, payroll, sales and use tax accounting and auditing, utility account management, budgeting, investing and debt management functions. Shani has a Bachelor of Arts degree in Accounting from Western State College, Gunnison, Colorado, and currently serves on the education committee for the Colorado Chapter of the Government Finance Officers Association.

Virgil Turner (Director of Innovation and Citizen Engagement): Virgil will provide additional grant oversight. He has been with the City for over 27 years and began as a police officer and public safety information system administrator. In 1991, Virgil began working in the City's information services department as a programmer/analyst and later served as the network manager and information technology manager. Virgil was named the administrative services director in 2005, with responsibilities over information technology, geographic information services, facilities and City clerk. Virgil has served as the director of innovation and citizen engagement since August 2012. He is responsible for developing innovative approaches to improve the value proposition in the provision of municipal services to our citizens.

Bill Bell, MPA (City Manager): Bill is responsible for the daily management of the city and the authorized signee of contracts on behalf of the city. He has worked in public administration for approximately 17 years and is the immediate past president of the Colorado City & County Managers' Association

(CCCMA) and immediate past president of the Colorado Municipal League (CML). Bill attended the University of Wyoming and earned a Bachelor's Degree, double majoring in Psychology and Criminal Justice. He also holds a Master's Degree in Public Administration from the University of Wyoming. Bill's first position as a City Administrator was with Grant, NE. He then moved to Wisconsin and served as Page 21 of 26 the village administrator of Turtle Lake, WI before taking the position of City Administrator in Rhinelander, WI, which is where he was working prior to assuming the Montrose City Manager role in 2011. Bill's strong vision and effective management is a huge reason why the future of Montrose looks so bright.

Troy Thompson, PE (Co-founder of ERC): Troy will serve as the project manager for the design/built team and lead the sediment transport and stream morphology efforts for this project. Troy has a Bachelor's Degree in water resource engineering from Cornell University, a Master's Degree in Civil Engineering from the University of Colorado, over 25 years of experience and is a registered professional engineer. His expertise includes hydrology, hydraulics, stream restoration and geomorphology. Troy has completed detailed stream morphology studies throughout Colorado and the western United States. His project experience runs the gamut from field data collection and sediment transport modeling for multi-basin evaluations to detailed hydraulic and sediment evaluations specific to restoration designs. He ensures that ERC's stream designs are based on fundamental fluvial geomorphologic principles such that finished restoration behaves as a natural stream system. His experience establishing stable channel configurations and defining sediment transport loading and mitigation measures will be particularly beneficial for this project as this will form much of the basis for a resilient design. Troy has been involved in all of ERC's stream restoration projects from planning through implementation and was involved in the two projects on the Uncompahgre that ERC has completed for the City.

Dave Blauch (ERC): Dave will serve as the Senior Ecologist and Environmental Consultant for the design/build team. Dave will use his expertise in regulatory compliance, aquatic biology, fisheries science and wetland and riparian systems to ensure that the restoration design is completed in a way that maximizes environmental benefits using native, non-obtrusive measures. Dave will use his knowledge of existing site conditions and sensitive areas to ensure that the restoration project minimizes unwanted impacts and the ultimate plan is compatible with the ecological setting. Dave has a Bachelor's degree in Environmental Resource Management from Pennsylvania State University, is a Certified Professional Wetland Scientist (PWS# 2130) and has specialized training and practical experience in high-altitude aquatic, wetland and riparian ecology of the Rocky Mountain region. He has over 22 years of experience in stream restoration, wetland and riparian ecology and restoration implementation. He also has extensive experience with local regulatory representatives of the US Army Corps of Engineers (USACE), Colorado Division of Parks and Wildlife (CPW), US Fish and Wildlife Service (USFWS) and the US Forest Service (USFS). Dave has personally been involved in all aspects of restoration planning, design and implementation for ERC's projects. Dave served in these same roles and oversaw construction in the two Uncompahgre projects that ERC has done for the City.

City of Montrose River Improvements Project - Budget & Timeline Table

Task	Description	Target Start Date	Target Completion Date	CWCB Funds	Other Funding Cash*	Other Funding In-Kind*	Total
1	Stream Excavation - Cut to Fill	Nov-19	Jan-20	$ 250,000.00	$ 320,000.00		$ 570,000.00
2	Riffle/Pool Features, Main Channel	Nov-19	Feb-20	$ 25,000.00	$ 17,000.00		$ 42,000.00
3	Riffle/Pool Features, Side Channel	Dec-19	Feb-20	$ 10,000.00	$ 15,000.00		$ 25,000.00
4	Fine Grading at Backwater Areas	Dec-19	Feb-20	$ -	$ 29,000.00		$ 29,000.00
5	Grade Controls at Side Channels & Backwater Areas	Dec-19	Feb-20	$ -	$ 20,000.00		$ 20,000.00
6	Type A Bank Stabilization	Dec-19	Feb-20	$ 20,000.00	$ 101,000.00		$ 121,000.00
7	Type B Bank Stabilization	Dec-19	Feb-20	$ 25,000.00	$ 156,000.00		$ 181,000.00
8	Type C Bank Stabilization	Dec-19	Feb-20	$ 15,000.00	$ 54,000.00		$ 69,000.00
9	Type D Bank Stabilization	Dec-19	Feb-20	$ 5,000.00	$ 18,000.00		$ 23,000.00
10	Micro Habitat Features	Dec-19	Feb-20	$ -	$ 24,000.00		$ 24,000.00
11	Vegetation of Riparian Areas	Feb-20	Mar-20	$ 50,000.00	$ 136,000.00		$ 186,000.00
12	Mob/Demob	Nov-19	Mar-20	$ -	$ 124,000.00		$ 124,000.00
13	Water Control	Nov-19	Mar-20	$ -	$ 62,000.00		$ 62,000.00
14	Erosion Control and Reclamation	Nov-19	Mar-20	$ -	$ 37,000.00		$ 37,000.00
15	Construction Oversight	Nov-19	Mar-20	$ -	$ 87,000.00		$ 87,000.00
	Totals			**$ 400,000.00**	**$ 1,200,000.00**	**$ -**	**$ 1,600,000.00**

Engineer's Opinion of Probable Cost		Quantity	Unit	Subtotal	Increased to Account for Contingency and Escalation
Stream Gage Installation	Each	0	20000	$ -	
Stream Excavation - Cut to Fill	Cubic Yards	21500	23	$ 494,500.00	$ 568,675.00
Riffle/Pool Features, Main Channel	Each	8	4500	$ 36,000.00	$ 41,400.00

Attachment E

Riffle/Pool Features, Side Channel	Each	11	2000	$ 22,000.00	$ 25,300.00
Fine Grading at Backwater Areas	Lump Sum	1	25000	$ 25,000.00	$ 28,750.00
Grade Controls at Side Channels and Backwater Areas	Each	5	3500	$ 17,500.00	$ 20,125.00
Type A Bank Stabilization	Linear Feet	350	300	$ 105,000.00	$ 120,750.00
Type B Bank Stabilization	Linear Feet	950	165	$ 156,750.00	$ 180,262.50
Type C Bank Stabilization	Linear Feet	1200	50	$ 60,000.00	$ 69,000.00
Type D Bank Stabilization	Linear Feet	200	100	$ 20,000.00	$ 23,000.00
Habitat Units in Upstream and Downstream Reaches	Each	0	2500	$ -	$ -
Micro Habitat Features	Each	27	750	$ 20,250.00	$ 23,287.50
Revegetation	Acres	5.4	30000	$ 162,000.00	$ 186,300.00
Mob/Demob (10%)	Lump Sum	1	111900	$ 111,900.00	$ 123,090.00
Water Control (5%)	Lump Sum	1	56000	$ 56,000.00	$ 61,600.00
Erosion Control and Reclamation (3%)	Lump Sum	1	33600	$ 33,600.00	$ 36,960.00
Construction	Lump Sum	1	78300	$ 78,300.00	$ 86,130.00
Contingency (10%)	Lump Sum	1	111900	$ 111,900.00	
Assumed Cost Escalation for Splitting Projects (5%)	Lump Sum	1	75500	$ 75,500.00	
Total				**$ 1,586,200.00**	**$ 1,594,630.00**

Attachment E

Project Title	Science, Stewardship, and Restoration in Left Hand Creek Watershed
Project Location	Left Hand Canyon (see map – Attachment A)
Grant Type	Watershed/Stream Restoration and/or Protection (Restoration)
Grant Request/Amount	$216,412
Cash Match Funding	$1,868,935
In-kind Match Funding	$24,488
Total Match Funding	$1,894,423
Project Sponsor(s)	Lefthand Watershed Oversight Group
Contact person	Jessie Olson; jolson@lwog.org; 303.746.7937
Brief description of the project	

The purpose of this multi-objective project is to continue adaptive restoration experiments and test new approaches for watershed stewardship. Our goal is to improve future restoration and stewardship efforts for Left Hand Creek and other Front Range watersheds through a combination of scientific methods, collaboration, and pilot-testing new approaches. To achieve this goal, we will:

- Continue adaptive restoration experiments focused on examining ecological processes that connect land and water to help inform and improve future watershed restoration efforts, including collaboration with University of Colorado – Boulder to help bridge knowledge gaps between researchers and practitioners of stream restoration;
- Partner with Boulder County on adaptive management (with focus on weed control and revegetation) in new and gap areas of the watershed (including both public and private properties) to connect watershed-wide stewardship and data collection efforts, including pilot-testing new adaptive restoration and outreach approaches; and
- Start a new pilot-test partnership with Left Hand Fire Protection District and Wildfire Partners focused on upland watershed health and wildfire mitigation efforts to incorporate upland stewardship into watershed restoration and explore new assessment tools that relate wildfire mitigation directly to watershed health. Information learned from this pilot project will provide proof of concept for future regional planning efforts.

With coalition-based leadership at the helm of these highly collaborative efforts, this project is well-aligned with Colorado Water Plan recommendations regarding coalition-based partnership plans, projects, monitoring, and adaptive management strategies. This project also builds on momentum created through complete and ongoing restoration work by strengthen existing partnerships (e.g. Boulder County), testing new partnerships (e.g. Left Hand Fire Protection District and Wildfire Partners), and incorporating partners with diverse interests and expertise (e.g. CU-Boulder) to achieve greater benefits for the watershed through collaboration and holistic thinking (e.g. riparian and uplands, connecting land and water, linking science and practice) that transcend jurisdictional and political boundaries. A critical aspect of this project is collaborative outreach and education, so that project partners can learn from each other, test new methods to leverage each other's unique expertise, and achieve a greater level of broad based involvement to restore and protect the watershed. Lastly, we are starting a new pilot partnership with the St. Vrain Creek Coalition to explore ways to join forces, grow together, and utilize our staff and programs at a more regional scale in the St. Vrain Creek Watershed.

BASIC APPLICANT QUALIFICATIONS

- Our commitment to collaborative approaches is demonstrated by our diverse project partners, including CU-Boulder, Boulder County, Left Hand Fire Protection District, Wildfire Partners, and St. Vrain Creek Coalition that are all providing cash or in-kind match, as well as our mission to "assess, protect, and restore the quality of our watershed, and to serve as a hub for watershed issues through the fostering of stakeholder collaboration."
- Our commitment to restoration and protecting ecological processes while also protecting life and property is demonstrated by our project goal to improve watershed health and resiliency. This is accomplished by implementing stewardship and restoration efforts on private property throughout the watershed, and adjacent to dwellings. In addition, the project will pilot test new approaches in an adaptive restoration context. For example, within our adaptive restoration project, we are restoring a stage zero stream, with beaver dam analogs, and this is one of the few example of this type of restoration in the Front Range.
- Our commitment to multi-objective approaches is demonstrated by holistic focus on stewardship of both upland and riparian areas of the watershed, as well as incorporating sound science into stewardship and restoration so that we can learn from our methods and identify ways to improve future projects. This is also demonstrated in our efforts to pilot-test new partnerships and collaborative outreach approaches to extend the impact of our coalition.
- Broad based support for this application and appropriate match are demonstrated by the diverse letters of support and detailed budget table provided in the attachments.

Qualifications Evaluation (Maximum of 20 points)

Identify the lead project sponsor and describe the other stakeholders' level of participation.
The lead project sponsor is Lefthand Watershed Oversight Group and direct project partners include CU-Boulder, Boulder County, Left Hand Fire Protection District (LHFPD), Wildfire Partners (WFP), and St. Vrain Creek Coalition (SVCC). CU-Boulder will partner on aspects of the project related to adaptive restoration and continuation of experiments, particularly related to stage zero restoration and floodplain wood. Boulder County, LHFPD, and WFP will partner on stewardship aspects of the project related to weed control, revegetation, and upland forest health. For example, our staff will lead outreach efforts needed to obtain support and interest from private property owners and partners such as Boulder County, LHFPD, and WFP will be closely involved to provide expertise and lead implementation of stewardship efforts. Lastly, our direct partnership with SVCC means that aspects of this project that are scalable and applicable to the St. Vrain Creek Watershed (e.g. weed control with Boulder County or wildfire planning to include both watersheds) may be implemented regionally. Lastly, as a coalition of watershed stakeholders, we partner with many additional individuals and organizations with an interest in watershed resources along Left Hand Creek. Some of our most significant relationships are with the landowners and residents in the watershed, Left Hand Water District (LHWD), Boulder County, City of Longmont, St. Vrain and Left Hand Water Conservancy District, Town of Jamestown, Town of Ward, James Creek Watershed Initiative, U.S. Forest Service, and Left Hand Ditch Company. All of these entities are represented on our Board and are attending meetings, commenting on project plans, and coordinating our efforts with their own related efforts.
Specify in-kind services and cash contributions (match) amount for the proposed activities.

Project partners are contributing significant cash and in-kind contribution towards this project. Further details are included in Attachment B - Budget Table and Schedule.

Type	Source	Amount	Status
Cash	Boulder County	$35,000	Committed
Cash	Wildfire Partners Program	$37,500	Pending – Cost Share Program
Cash	St. Vrain Creek Coalition	$4,400	Committed
Cash	CDBG-DR Legacy Grant – Canyons Restoration	$1,754,200	Received
Cash	LWOG Board Partners	$18,078	Received
Cash	CDBG-DR Capacity Grant	$10,757	Received
Cash	Patagonia Grant	$9,000	Pending
In-Kind	CU-Boulder	$20,488	Committed
In-Kind	Left Hand Fire Protection District	$5,000	Committed

Organizational Capability (Maximum of 30 points)

What is the applicant organization's history of accomplishments in the watershed?

Lefthand Watershed Oversight Group has obtained funding for diverse projects across our four core programs – Watershed Science, Restoration, Stewardship, and Outreach & Education. As mentioned, our Board of Directors includes many diverse partners that contribute to all of our projects. Below we highlight some of our ongoing and complete projects including key project-specific partners.

**Completed projects; ** Recently awarded projects*

	Description	Partners
Fish Passage & Education**	Fish passage and feasibility study and education initiative about the realities and complexities of Left Hand Creek as a working river ($78,000)	Left Hand Ditch Company, Left Hand Water District, St. Vrain & Left Hand Water Conservancy District, and others TBD.
Community Science (ongoing)	Citizen science program using mobile and web platforms for collection, management, and sharing of data ($143,500).	TBD (Project is in initiation stage)
Upper Left Canyon (ongoing)	Adaptive restoration experiments, as well as channel grading, floodplain grading, asset protection, and bank protection at eight project sites ($2,000,000).	US Forest Service, Boulder County, Left Hand Fire Protection District, Left Hand Ditch Company, Left Hand Water District, and 20 private landowners.
Stewardship (ongoing)	Stewardship of recently completed creek restoration project areas ($384,271)	>100 private landowners and Citizen Scientists.
Adaptive Management Plan*	Development of framework, conceptual model, and guide for watershed adaptive management ($46,500).	Boulder County, City of Boulder, US Forest Service, and landowners.
Foothills & Plains*; 63rd Street Ext.*; and Reach 3B*	Channel grading, floodplain grading, asset protection, and bank protection at eleven project sites (over $8,750,000).	Boulder County, Left Hand Ditch Company, Left Hand Water District, CDOT, and >100 private landowners.
Stewardship Handbook*	Educational resource for private landowners to engage in creek stewardship. ($200,000).	Full list of collaborators in available in the handbook.

What level of staffing will be directed toward the implementation of the proposed project?

Lefthand Watershed Oversight Group staff will allocate the equivalent of 64% of one person's staff time over two years to this project, including field work, data analysis, outreach, education, partner coordination, and project management. Below we provide brief resumes for each team member.

- **Jessie Olson, Executive Director:** Jessie is a restoration ecologist who has worked professionally in the field of ecological restoration since 2003, overseeing restoration and land management projects with non-profits, land trusts, and in the private sector. She is experienced with outreach, non-profit leadership, and long-term land management plans.
- **Yana Sorokin, Project Manager:** Yana is an ecosystem ecologist with eight years of experience. She holds a Master's degree in Plant Ecology from the University of Wyoming and she is a skilled project manager with background in ecological research, data analysis, experimental design, and all aspects of managing restoration projects.
- **Deb Hummel, Project Coordinator:** Deb is a fish biologist with experience working on fish and wildlife habitat restoration and mitigation projects. She received her Master's degree in Fisheries Biology and coordinates watershed science and stewardship projects from data collection and weed management to community engagement and education.

Our direct project partners bring additional expertise and experience to the project team. Key team member resumes and roles are included below. Staffing level details are included in Attachment B.

- Katherine Lininger, Assistant Professor at CU-Boulder specializes in river and floodplain dynamics and the interactions between geomorphic processes and ecological processes. She will partner on adaptive restoration experiments and provide technical expertise.
- Karla Brown, Board President of St. Vrain Creek Coalition, will partner on efforts to utilize our staff and programs at a more regional scale in the St. Vrain Creek Watershed.
- Boulder County Parks and Open staff will coordinate stewardship, adaptive management, and outreach efforts in new and gap areas of the watershed, and will oversee contractors implementing weed control and revegetation.
- Russell Leadingham, Fire Chief and Chris O'Brien, Assistant Fire Chief, at Left Hand Fire Protection District will partner on outreach, planning, and implementation related to upland forest health and wildfire mitigation, as well as updating the existing Community Wildfire Protection Plan to incorporate watershed health.
- Jim Webster, Wildfire Partners (WFP) Program Coordinator, will partner on all aspects of wildfire mitigation and cost-sharing with the WFP.

Demonstrate that the project budget and schedule are realistic.

Please see attached budget and timeline table, including assumptions. In summary, the budget is believed to be a realistic estimate of cost based on quotes received for similar work, number of restoration experiment plots, number of locations for wildfire mitigation, cost of previous wildfire plan updates, and acres for proposed weed control and revegetation. The budget is also believed to be a realistic estimate of cost based on outreach and project management experience on watershed restoration projects completed in the past three years by staff at more than 100 private properties. The schedule is believed to be a realistic estimate based on time required to collect and analyze sufficient data for adaptive restoration experiments, initiate and implement the upland health pilot

project/partnership, and implement weed control and revegetation in gaps area of the watershed. This estimate was based on the experience of both staff and project partners in implementing similar project in Left Hand Creek Watershed and other areas. However, the team recognizes that stewardship efforts are a process rather than a destination, and anticipates that these efforts may need to continue beyond the initial two-year period.

Proposal Effectiveness (50 points)

What information is the project sponsor using to develop the proposed plan or project?

The proposed project will be informed by numerous resources to guide and prioritize activities. Design plans, as-builts, protocols, and project-specific adaptive restoration experiment plans will be used to continue adaptive restoration experiments set up as part of the Canyons Restoration Project. Our Adaptive Management Guide, Stream Stewardship Handbook, and Watershed Master Plan will be used to guide activities related to watershed-wide stewardship in new and gap areas. A Community Wildfire Protection Plan, assessment by Left Hand Fire Protection District, and guidance documents and assessments by Wildfire Partners will be used to inform upland health and wildfire mitigation activities.

Discuss the multiple objective aspects of the project and how they relate to each other.

A multi-objective approach is inherent to this project because all of our watershed restoration and stewardship efforts are designed to meet multiple objectives. These include improving the ecology, water quality, fluvial-geomorphic function, and aquatic habitat. Further, the project provides improved water delivery reliability for farmers and ranchers through bank stability (planting) efforts. In addition, the project provides improvements to health, safety, and quality of life for private landowners within project areas (e.g. improved protection of homes, improved flood protection, and reduction of hazards). This project takes this multi-objective concept one step further by incorporating upland forest health and increased collaboration. We have added these additional objectives because upland areas capture all of our water and are vulnerable to wildfire, thus inherently impact watershed health. We have learned through past efforts that stewardship is most successful when diverse community members and stakeholders come together and collaborate for the greater good of the watershed.

With this in mind, this project includes multiple interrelated objectives,: (1) identify specific watershed restoration practices or treatments which lead to the highest functioning sites as related to state zero restoration, riparian revegetation, habitat improvement, and flood mitigation, among others; (2) improve watershed health and resiliency through watershed-wide stewardship and adaptive management, including weed control and riparian revegetation activities (which are inherently related to habitat improvement and erosion mitigation) in new and gap areas; (3) improve watershed health and resiliency through upland forest heath and wildfire mitigation planning and implementation efforts (which are inherently related to natural hazard reduction, upland erosion mitigation, and water quality); and (4) engage our community in watershed stewardship (which is inherently related to riparian re-vegetation, habitat improvement, natural hazard reduction, flood mitigation, water supply delivery improvement, and upland erosion mitigation) through cooperative and collaborative efforts with watershed diverse partners.

Generally, the multiple objectivity of this project is also well summarized in the project title, 'Science, Stewardship, and Restoration.' We are achieving our objective to improve restoration and stewardship practices in our watershed through science-based adaptive restoration while simultaneously improving stewardship in our watershed through collaboration with diverse partners and pilot-testing of new partnerships.

Similar activities in our watershed includes independent work by Lefthand Watershed Oversight Group, Boulder County, and the state focused on adaptive management and stewardship of restored areas of the watershed. This project complements those efforts by adding adaptive management to new and gap areas of the watershed that are in need of weed control and revegetation but are not included in currently funded efforts. This project will provide great benefit to overall watershed health by extending the reach of our efforts and contributing to a holistic, watershed-wide approach to stewardship. Additional similar work includes the CDBG-DR funded Canyons Watershed Restoration project which sets up the adaptive management experiments but does not include continuation of the experiments beyond implementation. This project would complement that work by continuing adaptive restoration experiments through data collection, analysis, and reporting.

Lastly, Lefthand Watershed Oversight Group developed an adaptive management plan, including framework, conceptual model, and guide, as part of a CDBG-DR planning grant. Implementation of this plan, including field work, data analysis, and reporting is funded as part of our CWCB Watershed Restoration Grant in 2017. Our request for this grant is to update this framework, conceptual model, and guide with new information and lessons learned so that it may be more scalable, repeatable, and useful for other watersheds (e.g. add a stage zero future scenario to our conceptual model, update guide to show more quantitative performance standards based on data collected, or include actual examples of learning and adjusting rather than hypothetical examples in the guide).

Describe the proposed monitoring or implementation plan.

The success of our project will be measured by our ability to complete and/or continue restoration experiments and leverage new and pilot partnerships to increase and improve stewardship in our watershed. We will use the following quantifiable measures of success:

- Number of adaptive restoration experiments completed and report of results. Implementation is currently underway and final count of experiments will be determined by December 2018.
- Number of new landowners engaged and acres of properties weeded or revegetated in new and gap areas of the watershed (this may also include the St. Vrain Creek Watershed) versus number of existing gap areas. Our initial goal is to reduce gap areas by 40% but will be refined in the first stages in collaboration with Boulder County and/or the St. Vrain Creek Coalition.
- Number of landowners engaged and extent of mitigation measures (e.g. number of trees removed, cubic yards of brush removed, etc.) versus initial goal. Our current initial goal of 25 properties (this may also include the St. Vrain Creek Watershed) will be refined in the initial stages of the project and through the process of updating the Community Wildfire Protection Plan with Left Hand Fire Protection District and Wildfire Partners.

LEFTHAND WATERSHED
oversight group

Science, Restoration, and Stewardship in Left Hand Creek Watershed - Summary Budget

Task No.	Task Description	Start Date	End Date	Grant Funding Request	Match Funding	Total
1	Task 1 – Adaptive Restoration	5/1/2019	5/1/2021	$ 96,677.00	$ 1,770,488.00	$1,867,165.00
2	Task 2 – Watershed-Wide Adaptive Management	5/1/2019	5/1/2021	$ 56,989.00	$ 61,189.00	$118,178.00
3	Task 3 – Upland Watershed Stewardship	5/1/2019	5/1/2021	$ 50,257.50	$ 50,257.50	$100,515.00
4	Task 4 – Project Management and Planning	5/1/2019	5/1/2021	$ 12,489.00	$ 12,489.00	$24,978.00
			Total	**216,412.50**	**1,894,423.50**	**2,110,836.00**

LEFTHAND WATERSHED oversight group

Science, Restoration, and Stewardship in Left Hand Creek Watershed - Detailed Budget

				LWOG Staff				Other Direct Costs												Assumptions
	Consultant or University Researcher			Executive Director	Project Manager	Project Coordinator		Field Instruments & Supplies	Wildfire Mitigation	Annual Fish Survey	Planting	Weed Control	Office supply, printing, and poster board	Design-Build		TASK TOTALS	CWCB Request	Other Funds - Cash	Other Funds - In Kind	TOTAL Other Funds - Cash & In-Kind	
	$ 145		Subtotal	$ 57.00	$ 42.00	$ 35.00	Subtotal	Lump sum	Lump sum	Lump sum	$15	$450	Lump Sum		Subtotal						
				Estimated Hours				Estimated Cost Per Task													
Task 1 – Adaptive Restoration																					
1.1 Canyons Design-Build Adaptive Restoration			$ -				$ -							$1,750,000	**$1,750,000**	$ 1,750,000.00					
1.2 Field work	$ 71,570.00	50	**$ 7,250.00**	100	110	200	**$ 17,320.00**	$10,000		$12,000	$25,000				**$ 47,000.00**	$ 71,570.00					Assuming 50 experiment plot locations, including vegetation, geomorphology, and biological/habitat experiments. Instruments and supplies includes RTK rental, piezometers, structure promotion analysis/drone flights, data loggers and sensors, and other field supplies. Assuming two annual fish surveys at four sites including permitting, electroshocking, and identification. Assuming average unit rate (including labor) for container stock and cuttings. Estimate of appx. 60 hours per month on field work during May-Nov.
1.3 Data analysis, processing, reporting	$ 45,595.00	195	**$ 28,275.00**	100	110	200	**$ 17,320.00**								$ -	$ 45,595.00					Estimate of appx. 35 hours per month on data processing and reporting annually.
Task Subtotal	**$ 117,165.00**		**$ 35,525.00**				**$ 34,640.00**								**$ 1,797,000.00**	**$ 1,867,165.00**	**$ 96,677.00**	**$ 1,750,000.00**	**$ 20,488.00**	**$ 1,770,488.00**	
Task 2 – Watershed-Wide Adaptive Management																					
2.1 Boulder County Weed Control			$ -				$ -					$35,000			**$ 35,000.00**	$ 35,000.00					
2.2 Adaptive Mangement, Weed Control, and Outreach in New and Gap Areas	$ 83,178.00	160	**$ 23,200.00**	54	757	300	**$ 45,378.00**				$7,100	$7,100	$400		**$ 14,600.00**	$ 83,178.00					Periodic maintenance of habitat by mechanical or chemical means as necessary. Assuming weed control and/or replanting would occur on new gap areas (15 acres total). Market research conducted to determine per-acre cost weed control and revegetation costs. Assuming average unit rate (including labor) for container stock and cuttings. Assuming hourly rate for graphic design and consultant support based on quotes recieved. Estimate based on appx. 45 hours per month of field and office work annually.
Task Subtotal	**$ 83,178.00**	**160**	**$ 23,200.00**				**$ 45,378.00**								**$ 49,600.00**	**$ 118,178.00**	**$ 56,989.00**	**$ 61,189.00**	**$ -**	**$ 61,189.00**	
Task 3 – Upland Watershed Stewardship																					
3.1 Wildlife Mitigation and Planning	$ 100,515.00	84	**$ 12,180.00**	55	150	100	**$ 12,935.00**		$75,000				$400		**$ 75,400.00**	$ 100,515.00					Assuming 15 homes or equivalent matched through the Wildfire Partners Program and plan update. Estimated appx. 15 hours per month for coordination and outreach. Outside consultant technical expertise estimate based on quotes recieved.
Task Subtotal	**$ 100,515.00**		**$ 12,180.00**				**$ 12,935.00**								**$ 75,400.00**	**$ 100,515.00**	**$ 50,257.50**	**$ 45,257.50**	**$ 5,000.00**	**$ 50,257.50**	
Task 4 – Project Management and Planning																					
4.1 PM, Outreach, and Partnerships	$ 24,978.00	21	**$ 3,045.00**	254	115	75	**$ 21,933.00**								$ -	$ 24,978.00					Estimate based on appx. 20 hours per month of project management, coordination, and planning annually. Assuming hiring one strategic planning meeting consultant, estimated based on quotes received.
Task Subtotal	**$ 24,978.00**		**$ 3,045.00**				**$ 21,933.00**								$ -	**$ 24,978.00**	**$ 12,489.00**	**$ 12,489.00**	**$ -**	**$ 12,489.00**	
TOTAL			$ 73,950.00				$ 114,886.00								$1,922,000	**$ 2,110,836.00**	**$ 216,412.50**	$ 1,868,935.50	$ 25,488.00	**$ 1,894,423.50**	

LEFTHAND WATERSHED oversight group

Science, Restoration, and Stewardship in Left Hand Creek Watershed - Detailed Budget

	TASK TOTALS	CWCB Request	Other Funds - Cash	Other Funds - In Kind	TOTAL Other Funds - Cash & In-Kind	CU-Boulder	Boulder County	CDBG-DR Legacy Grant - Restoration	LWOG Partners	CDBG-DR Capacity Grant	St. Vrain Creek Coalition	Wildfire Partners Program	Patagonia Grant	Left Hand Fire Protection District
						In-Kind	Cash	Cash	Cash	Cash	Cash	Cash	Cash	In-Kind
						Committed	*Committed*	*Received*	*Received*	*Received*	*Committed*	*Pending (Cost-Share Program)*	*Pending*	*Committed*
Task 1 – Adaptive Restoration														
Task Subtotal	**$ 1,867,165.00**	**$ 96,677.00**	**$ 1,750,000.00**	**$ 20,488.00**	**$ 1,770,488.00**	$ 20,488.00	$ -	$ 1,750,000.00	$ -	$ -	$ -	$ -	$ -	$ -
Task 2 – Watershed-Wide Adaptive Managemer														
Task Subtotal	**$ 118,178.00**	**$ 56,989.00**	**$ 61,189.00**	**$ -**	**$ 61,189.00**	$ -	$ 35,000.00	$ 4,200.00	$ 8,589.00	$ -	$ 4,400.00	$ -	$ 9,000.00	$ -
Task 3 – Upland Watershed Stewardship														
Task Subtotal	**$ 100,515.00**	**$ 50,257.50**	**$ 45,257.50**	**$ 5,000.00**	**$ 50,257.50**	$ -	$ -	$ -	$ -	$ 7,757.50	$ -	$ 37,500.00	$ -	$ 5,000.00
Task 4 – Project Management and Planning														
Task Subtotal	**$ 24,978.00**	**$ 12,489.00**	**$ 12,489.00**	**$ -**	**$ 12,489.00**	$ -	$ -	$ -	$ 9,489.00	$ 3,000.00	$ -	$ -	$ -	$ -
TOTAL	**$ 2,110,836.00**	**$ 216,412.50**	$ 1,868,935.50	$ 25,488.00	**$ 1,894,423.50**	$ 20,488.00	$ 35,000.00	$ 1,754,200.00	$ 18,078.00	$ 10,757.50	$ 4,400.00	$ 37,500.00	$ 9,000.00	$ 5,000.00

Scope of Work

GRANTEE: Lefthand Watershed Oversight Group

PRIMARY CONTACT: Jessie Olson

ADDRESS: jolson@lwog.org

PHONE: 303.746.7937

PROJECT NAME: Science, Stewardship, and Restoration in Left Hand Creek Watershed

GRANT AMOUNT $216,412.50

INTRODUCTION AND BACKGROUND

The purpose of this multi-objective project is to continue adaptive watershed restoration experiments and test new approaches for stewardship in Left Hand Creek Watershed. Our goal is to improve future restoration efforts for Left Hand Creek and other Front Range watersheds through a combination of scientific methods, collaboration, and pilot-testing new approaches. To achieve this goal, we will:

- Continue adaptive restoration experiments focused on examining ecological processes that connect land and water to help inform and improve future watershed restoration efforts, including collaboration with University of Colorado – Boulder to help bridge knowledge gaps between researchers and practitioners of stream restoration;
- Partner with Boulder County on weed control, revegetation, and adaptive management in new and gap areas of the watershed (including both public and private properties) to connect watershed-wide stewardship and data collection efforts, including pilot-testing new adaptive restoration and outreach approaches; and
- Start a new pilot-test partnership with Left Hand Fire Protection District and Wildfire Partners focused on upland watershed health and wildfire mitigation efforts to incorporate upland stewardship into watershed restoration and explore new assessment tools that relate directly to watershed health. Information learned from this pilot project will provide proof of concept for future regional planning efforts.

A critical aspect of this project is collaborative outreach and education, so that project partners can learn from each other, test new methods to leverage each other's unique expertise, and achieve a greater level of broad based involvement to restore and protect the watershed. Lastly, the project includes a new pilot partnership with the St. Vrain Creek Coalition in which we will be exploring ways to join forces, grow together, and utilize our staff and programs at a more regional scale in the St. Vrain Creek Watershed.

OBJECTIVES

1 **Identify specific watershed restoration practices or treatments which lead to the highest functioning sites** by continuing collaborative adaptive restoration experiments.
2 **Improve watershed-wide weed control, revegetation, and adaptive management** by partnering with stakeholders on adaptive management and outreach efforts at new and gap sites in the watershed, and also potentially the St. Vrain Watershed.
3 **Improve upland watershed stewardship** by pilot-testing new partnerships with stakeholders to support upland forest health and wildfire mitigation planning, outreach, and implementation efforts in the watershed.
4 **Engage our community in watershed stewardship** by maximizing outreach and collaborative partnerships efforts to implement stewardship in new areas of our watershed, and beyond.

TASKS

Task 1 – Adaptive Restoration Experiments

Description of Task

Our Canyons Design-Build Adaptive Restoration project was set up in an adaptive restoration context – meaning as an experiment (or series of experiments) to test hypothesis associated with various design and implementation restoration methods. The purpose of this task is to continue data collection, analysis, and interpretation required to complete these experiments and share results with others. Experiments were set up as part of a stage zero stream restoration site, as well as other restoration sites, to test hypotheses associated with design and construction decisions to determine which approaches lead to highest functioning sites. Examples include channel dimensions and form, plant pallets, plant placement, planting methods, wood revetment installation methods, native fish habitat structures and more. Research efforts will be coordinated with fluvial geomorphologists and riparian ecologists from University of Colorado – Boulder to help bridge knowledge gaps between researchers and practitioners of stream restoration. Implementation of experiments is still in progress and will include additional experiments (pending grant receipt by CU-Boulder) related to floodplain wood led by researchers at CU-Boulder and completed in collaboration with Lefthand Watershed Oversight Group staff. The following subtasks are included:

1.1 Canyons Design-Build Adaptive Restoration (Not CWCB-funded)
1.2 Field Work: This subtask includes field data collection for vegetation, geomorphology, and biological/habitat experiments. This include deployment of instrumentation such as RTK rental, piezometers, structure promotion analysis/drone flights, data loggers and sensors, and field supplies. This also assumes two annual fish surveys. This task also includes revegetation in the fall using adaptive restoration methods to compare planting methods and timing (e.g. success of fall versus spring planting).
1.3 Data Analysis, Processing, and Reporting: This subtask includes all non-field work associated with data analysis and reporting, including data entry, developing graphs and visual representation of results, and reporting for technical and non-technical audiences.

Method/Procedure

- Partner with university professors and students to develop and implement plans for post-restoration project data collection and analysis, as well as interpretation and reporting.
- Develop non-technical summary reports to share results with diverse audiences.

Deliverable

- Research reports summarizing experimental design, methods, results, and interpretation of results for future restoration projects.

Task 2 – Watershed-Wide Adaptive Management

Description of Task

The purpose of this task is to extend stewardship and adaptive management efforts to new and gap areas in the watershed. Recent restoration efforts throughout Left Hand Creek Watershed have resulted in an assortment of discrete project locations designed and implemented to meet goals related to improving ecology, health, safety, and quality of life within the project areas. However, new and gap areas located outside of these restoration project sites can negatively impact restored areas, in some cases simply due to proximity. Many of the these new and gap areas were identified as low priority and therefore not included in restoration efforts. Others were restored previously with no follow up monitoring, adaptive management or weed control. Weeds and small areas of active erosion in new and gap areas are impacting recently restored project sites. Therefore, this task aims to achieve a watershed-wide weed control and revegetation effort to address these new and gap areas. Additionally, this task involves implementation of Lefthand Watershed Oversight Group's adaptive management plan on new project sites throughout the watershed to expand the extent of the watershed being adaptively managed using similar methodology. This will result in a more comprehensive data set, collected using the same methods and managed using the same performance standards and management triggers. The impact will be encompassing and robust understanding of adaptive management in Left Hand Creek Watershed are more properties and beyond jurisdictional and political boundaries. The following subtasks are included as part of this task:

2.1 Boulder County Weed Control (Not CWCB-funded)

2.2 Adaptive Management, Weed Control, and Outreach in New and Gap Areas: This effort will focus specifically on new and gap properties located in Left Hand Canyon. All weed control, revegetation, and adaptive management completed as part of this task will be done on private and public properties that are either unrestored or are currently unmonitored as part of the Emergency Watershed Protection Program or warranty obligations (e.g. Central Federal Lands project sites, Brewbaker-Sorenson, and adjacent private properties).

A key aspect of this task is a collaboration between Left Hand Watershed Oversight Group and Boulder County on outreach and education. Through this partnership Lefthand Watershed Oversight Group and Boulder County staff will leverage each-others' strengths for the greater benefit of the watershed to engage and educate landowners about weed control, obtain access to private properties, hosts one-on-one landowner meetings, and host 1-2 community workshops.

This task also includes a collaboration with St. Vrain Creek Coalition to implement weed control efforts on their Emergency Watershed Protection project site at Apple Valley – South and potentially

consider additional gap areas in the St. Vrain Watershed where additional weed control, revegetation, and adaptive management may be possible.

Lastly, this task includes updates to Lefthand Watershed Oversight Group's Adaptive Management Plan and Citizen Science Program. The adaptive management plan was developed at part of a CDBR-DR Planning grant. Since that time Lefthand Watershed Oversight Group has used a CWCB Watershed Restoration grant (as well as other funding) to implement the adaptive management plan, completing tasks related to field work, data analysis, and outreach. This tasks includes a new and separate effort to update the adaptive management plan based on lessons learned through completed field work, data analysis, and outreach. This includes examples such as updating the conceptual model to include a stage zero potential future scenario, updating actual lessons learned in the guide so that it may serve as an improved scalable and repeatable resource for other watersheds in Colorado, and creating other educational tools for watershed adaptive management education.

Method/Procedure

- Conduct an assessment of potential work areas to evaluate conditions and develop prioritization criteria.
- Prioritize areas with Boulder County staff for weed control and revegetation based on need and budget; working to maximize connectivity to existing stewardship/adaptive management project sites, working upstream to downstream. 15 acres of new and gap areas are targeted.
- Implement monitoring methods described in Lefthand Watershed Oversight Group's adaptive management plan at selected sites.
- Coordinate planting and weed control methods with the Boulder County staff and other stakeholders to ensure proper sequencing of treatment/removal and native riparian plantings.
- Lead outreach efforts to engage landowners through one-on-one meetings and workshops with Boulder County providing technical expertise.
- Develop conceptual planting and revegetation plans for each priority area.
- Assist Boulder County with implementation efforts.
- Implement adaptive management in the Apple Valley South project area and explore potentials for extending efforts to new and gap areas of the St. Vrain Watershed
- Work with stakeholder and graphic designer to update adaptive management plan.
- Work with university professor as needed to update citizen science protocols and tools, and continue program implementation.

Deliverable

- At new and gap project sites in Left Hand Canyon, project reports documenting progress, including photos and as-built documentation (e.g. number of plants planted, acres weeds pulled, targeted noxious weed species removed, etc.).
- At new adaptive management project sites, a database with all complied data collected according to frequencies established in the adaptive management framework; numerical and graphical summaries of data, when appropriate; and analysis and discussion report leading to recommendations for management actions when needed.

- Updated Adaptive Management Plan.
- Updated protocols, tools, and continued implementation results.

Task 3 – Upland Watershed Stewardship

Description of Task

The purpose of this task is to extend stewardship efforts to upland areas of the watershed which serve as the catchment for the entire watershed and directly impact watershed health and recently restored project sites. Lefthand Watershed Oversight Group will partner with Left Hand Fire Protection District (LHFPD) and Wildfire Partners (WFP) to address needs related to watershed health through upland forest health and wildfire mitigation.

Pilot-testing this partnership is a key aspect of this task. Lefthand Watershed Oversight Group has been keenly focused on the needs of stakeholders and community members impacted by floods. Through this pilot partnership we will expand our focus to include upland forest health and help stakeholder such as LHFPD and WFP continue and help expand their efforts to protect these vulnerable upland areas of the watershed. This pilot partnership provides an opportunity for partners to leverage each-others' strengths and relationships in the community to identify how we can help each other for the greater benefit of the watershed, and regionally.

Work will include a combination of mitigation, outreach/education, and planning. As part of the mitigation efforts, we will work with homeowners, LHFPD, and WFP to implement wildfire mitigation measures at private properties by creating and linking defensible space to achieve landscape scales. Lefthand Watershed Oversight Group will work in partnership with the WFP program, matching the cost-sharing funding provided by the WFP for linked defensible space within the watershed.

LHFPD currently has an accepted Community Wildfire Protection Plan (CWPP) and other mitigation documents in place to prioritize wildfire mitigation needs in Left Hand Canyon. We will use these documents as well as assessment by WFP and LHFPD staff to reach out to property owners about implementing mitigation recommendations on their properties and work with LHFPD staff to implement projects.

Currently, some homeowners are hesitant to accept the extent and cost of necessary mitigation measures. As part of the outreach/education efforts, this task includes hosting community outreach meetings and events recommended in the CWPP to build homeowner support for implementing the full extent of appropriate and necessary mitigation measures in key areas.

Lastly, as part of the planning effort, we will update the CWPP to reflect work completed in the last four years and incorporate recent watershed restoration efforts into mitigation plans. Part of this effort will include exploring assessment tools that will provide information about critical areas for mitigation that relate directly to watershed health and future projects. This project will directly complement the regional planning efforts lead by Fourmile Watershed Coalition, by providing on-the-ground proof of concept and a test of partnership at a smaller scale.

Method/Procedure

- Conduct outreach to individual property owners about the needs and benefits of mitigation measures

- Conduct outreach and events recommended in the CWPP focused on wildfire education and mitigation and develop educational materials
- LHFPD staff will implement mitigation measures at properties
- Work with LHFPD staff and others to update the CWPP

Deliverable

- Report documenting landowner outreach efforts, map of areas where mitigation measures were implemented and linked, the positive effect on the watershed and forest health, description of mitigation measures (e.g. number of trees removed, cubic yards of brush removed, etc.). Updated Community Wildfire Protection Plan (CWPP).

Task 4 – Project Management and Planning

Description of Task

The purpose of this task is to track project progress, deliverables, reports, budget, and scope compliance. To ensure the longevity of these efforts, as well as our organization, additional planning and organizational growth is needed to maintain an effective and financially stable organization that is able to continue to provide high-quality programs and thrive over the long-term. Work includes project management, planning, and continued tasks related to organizational viability such as grant writing, fundraising, business plan development etc. This task also includes organizational planning efforts to identify opportunities for partnership, collaboration, and growth.

Method/Procedure

- Implement all project tasks by coordinating with project teams, partners, and staff during regular meetings.
- Continue refinement of organizational fundraising plan to ensure resilient watershed-wide stewardship continues.
- Identify and develop 3-4 grant applications.
- Implement 2-3 outreach and fundraising campaigns to increase organizational awareness in the community and raise unrestricted funds to further our mission.
- Hire facilitator to conduct one strategic planning meeting to discuss partnership, collaboration, and organization growth.
- Complete final project report

Deliverable

- Timesheets and reimbursement requests demonstrating time spent on project management and planning.
- Six-month status reports detailing progress and accomplishments.
- Final report

Project Proposal Summary Sheet

Project Title:	La Plata County Post-416 Fire Watershed Restoration Project
Project Location:	Hermosa Creek Watershed/Animas River (see attached maps)
Grant type:	Watershed Restoration Grant
Request Amount:	$500,000
Cash Match Funding:	$5,341,000
In-kind Match:	$148,000
Project Sponsor:	La Plata County
Contact:	Chuck Stevens, chuck.stevens@co.laplata.co.us, 970-382-6220

Description of the project:

La Plata County (LPC) and USDA Natural Resource Conservation Service (NRCS) are collaborating to provide assistance through NRCS' Emergency Watershed Protection Program (EWP) and to engage, coordinate and educate property owners, partner agencies, community groups and other stakeholders impacted by flooding following the 416 Fire, which burned approximately 54,000 acres in the Hermosa Creek Watershed beginning June 1, 2018. The 416 Fire's impacts are continuing for residents who live below the burn scar. Lost vegetation and changes to soil composition increase the risk of flooding and debris flow. Many properties have been affected already by these events, and more are likely to see flooding in the months and years to come.

La Plata County seeks to assist in the watershed recovery by facilitating the removal of debris and installing measures to reduce hazards and prevent future flooding disasters. La Plata County intends to holistically address the Hermosa Creek /Animas River watershed to repair damage caused by the flooding and take preventative measures to reduce the potential for future flood damage to occur. The La Plata County Post-416 Fire Watershed Restoration Project will be a parallel project working in consonance with the NRCS EWP. La Plata County has applied to serve as the lead project sponsor for the EWP program and is seeking this grant to augment the restoration and mitigation activities that will be undertaken.

This grant would enable La Plata County to mitigate the damage caused by the 416 Fire, restore watershed health and protect the watershed from future damage. By protecting the watershed health, the County would be acting in a manner consistent with effective watershed management practices in order to maintain the quality of life in this region and accommodate the development and maintenance of flows, including domestic supplies, environmental needs, agriculture, recreation, and commercial/industrial needs to provide for further economic development.

The objective of this project is to engage, educate and coordinate impacted property owners, neighborhoods and other stakeholders to implement the NRCS EWP program to deploy mitigation actions throughout affected or threatened areas so as to maximize the effectiveness of the program for reducing threats to life and safety, protecting from future flooding, and restoring the hydraulic capacity of historic and natural drainages to pre-event conditions with the overarching objective of improving the health of the Hermosa Creek and Animas River watersheds following the 416 Fire and its ongoing impacts.

Qualifications

La Plata County has applied to be the local sponsor administering the NRCS Emergency Watershed Protection Program to assist with mitigation and restoration following flooding and debris flow events below the 416 Fire burn scar. In this capacity, La Plata County serves as coordinating entity working with property owners, neighborhoods and community stakeholders affected by flooding and debris flow to

seek solutions and resources that protect and restore private property and benefit the Hermosa Creek and Animas River watersheds, and specific drainages therein. This project will convene affected individuals and organizations to ensure that the EWP treatments are designed and implemented to maximize their function in protecting private property on site as well as resources downstream. LPC will contract with a project manager to oversee and implement this effort, with emphasis on the role of community coordination to extend the project's benefits throughout the affected watershed. Stakeholders will include the Animas Consolidated Ditch Company, Hermosa Company Ditch, Animas River Community Forum, City of Durango, San Juan Basin Public Health, Southwest Water Conservation District, Southwest Basin Roundtable, Animas Watershed Partnership and Mountain Studies Institute.

The La Plata County Post-416 Fire Watershed Restoration Project cost is estimated at $6,106,500 and will combine resources from the NRCS EWP, which has estimated its contribution to be $5,310,000 in financial assistance for implementing restoration and mitigation solutions and $796,500 in technical assistance to LPC for design, engineering and coordination efforts that will precede construction. La Plata County will provide $150,000 in matching funds. The Colorado Department of Homeland Security and Office of Emergency Management (DHSOEM) has indicated it will provide additional funding to assist with both direct and indirect project costs. CWCB Watershed Restoration funds would be used to assist in covering remaining project costs.

In-kind services and cash contributions: La Plata County will provide $150,000 cash, plus an estimated $38,000 in County staff resources. Additionally, an estimated $110,000 in community partner and property owner construction services performed to protect the watershed. In-kind construction services include costs associated with materials, equipment, and labor.

Organizational Capability

La Plata County has a long-held commitment to watershed protection, improvement and restoration in the Hermosa Creek and Animas River watershed. The county participated in the stakeholder process that resulted in Congressional designation of the Hermosa Creek Special Management Area, and supported that legislation. The county is an active participant in the Animas River Community Forum, which came together following the Gold King Mine Spill in 2015 to promote communication, coordination and collaborative action; foster public confidence; support resiliency in our communities; and enhance planning, improved public safety and health for the future.

LPC has supported restoration and mitigation efforts in the headwaters of the Animas River watershed to address hard rock mining impacts on water quality. This has included active participation in the region-wide effort to secure Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) resources to address mine drainage in San Juan County that affects communities and watersheds downstream in Colorado and New Mexico, working with the Animas River Stakeholder Group, Trout Unlimited, U.S. Environmental Protection Agency and a far-reaching consortium of individuals and stakeholder groups. LPC has supported efforts to reform hardrock mining legislation so as to improve watershed health in the Animas River basin.

As this project will work in consonance with the NRCS EWP, the protection of life and the preservation of property and infrastructure will be the highest priorities; accordingly, LPC is committed to providing the requisite staff and resources as necessary to ensure project goals and objectives are met. LPC intends to contract with a project manager to implement this project. LPC prides itself on collaboration with the community and will require that the project manager coordinate with local stakeholder organizations including Animas Consolidated Ditch Company, Hermosa Company Ditch, Animas River Community Forum, City of Durango, San Juan Basin Public Health, Southwest Water Conservation District,

Southwest Basin Roundtable, Animas Watershed Partnership and Mountain Studies Institute and others that may emerge as the project develops. Those organizations will undoubtedly rely upon volunteer assistance; however the numbers of volunteers will not be known until the project manager has been identified and has developed the community engagement and outreach plan. Finally, once the project manager is under contract, resumes of the project team members can be provided. Please see attached project timeline for milestones and estimated completion date.

Proposal Effectiveness

The objective of this project is to engage, educate and coordinate impacted property owners, neighborhoods and other stakeholders to implement the NRCS EWP program to deploy mitigation actions throughout affected or threatened areas so as to maximize the effectiveness of the program for reducing threats to life and safety, protecting from future flooding, and restoring the hydraulic capacity of historic and natural drainages to pre-event conditions with the overarching objective of improving the health of the Hermosa Creek and Animas River watersheds following the 416 Fire and its ongoing impacts.

While the specific project work will be conducted on private properties below the 416 Fire burn scar, the mitigation and restoration work contemplated will deliver significant benefit to downstream properties and community resources. Specifically, ditch companies, public utilities, county and state roads, riparian areas and wetlands will be protected and improved by work that addresses and responds to debris flow and flood events that have compromised historic channels, specifically in the Hermosa Creek, Animas River, Tripp Creek, Dyke Canyon and Mitchell Lakes drainages. By restoring damage and mitigating against future flood and debris flow events, the La Plata County Post-416 Fire Watershed Restoration Project will protect life safety, private property and help improve and restore the Animas and Hermosa Creek watersheds.

The NRCS EWP Damage Survey Reports (DSRs) will function as the primary tool for inventorying properties affected by flooding and debris flows, and informing the scope of mitigation and restoration solutions. Additionally, the U.S. Forest Service's interdisciplinary Burned Area Emergency Response (BAER) team, deployed to assess the potential downstream impacts resulting from changes to the soil composition, produced a report that analyzes soil burn severity in the burn scar and identified areas most susceptible to flooding and debris flow. This report and its associated mapping provide invaluable information regarding risk and impacts to drainages, property and community resources. The project will utilize mapping created for the BAER team report, including data indicating significantly elevated probability and volume for flooding and debris flow events below the burn scar in the Hermosa Creek, Animas River, Tripp Creek, Dyke Canyon and Mitchell Lakes drainages. Additionally mapping will be conducted using county GIS capacity, incorporating FEMA flood plain data and historic debris flow data. This information, along with professional engineering services, will be used to develop project treatments that address existing damage, prevent future life and property risk, improve natural hazards and protect downstream assets in the Hermosa Creek and Animas River watersheds. A critical component of ensuring that the multiple objectives of this project are achieved will be stakeholder coordination and coalition building to assist with prioritizing mitigation and restoration projects that maximize life and safety for the community as well as achieve long-term benefits to the affected watersheds. While the DSRs will provide the inventory and conceptual treatment for property and watershed protection and restoration, the design and engineering phases of this project will consider options that address erosion, sedimentation, and mitigate flood and debris flow hazards and impacts on agricultural water delivery systems – including the Animas and Hermosa ditches – and water users downstream from impacted/treated properties – including the City of Durango, which draws some of its drinking water from the Animas River.

Monitoring will be completed pre-treatment, immediately after treatment, and annually following

treatment for up to three years. This will include water quality monitoring in the Animas River and Hermosa Creek. This project will design a unified operation and maintenance plan that will incorporate the goals and objectives of the EWP program along with the engineered solutions. LPC will work with partners to train landowners to execute their operation and maintenance plan for their specific property as well as in concert with neighbors and other stakeholders to achieve long-term flood protection and watershed restoration and will coordinate field assessments to ensure the continued effectiveness and functionality of restoration and mitigation projects. Results will be compiled annually into a report.

Attachments

- Scope of Work
- Budget and Timeline
- Maps
  1) Watershed Impacts
  2) USGS Combined Probability and Volume Predicted Debris Flow Potential and NRCS Project Parcels
- Photos
  1) Hermosa Creek debris dam
  2) Silt deposits in Animas River
  3) Debris flow on Whispering Pines Drive
  4) Tripp Creek debris flow
  5) Debris in home
  6) Soils issues in Hermosa Creek watershed
- Letters of Support
  1) Animas Consolidated Ditch Company
  2) Animas River Community Forum
  3) Animas Watershed Partnership
  4) Animas River Stakeholders
  5) City of Durango
  6) Hermosa Ditch Company
  7) Mountain Studies Institute
  8) Southwest Basins Roundtable
  9) Southwestern Water Conservation District
  10) Trout Unlimited 5 Rivers Chapter

SCOPE OF WORK

PROJECT NAME: La Plata County Post-416 Fire Watershed Restoration Project

PRIMARY CONTACT: Chuck Stevens, Assistant County Manager, chuck.stevens@co.laplata.co.us

ADDRESS: 1101 E. 2nd Ave., Durango CO 81301

PHONE: 970-382-6220

GRANT AMOUNT: $500,000

INTRODUCTION AND BACKGROUND

La Plata County (LPC) and USDA Natural Resource Conservation Service (NRCS) are collaborating to provide assistance through NRCS' Emergency Watershed Protection Program (EWP) and to engage, coordinate and educate property owners, partner agencies, community groups and other stakeholders impacted by flooding following the 416 Fire, which burned approximately 54,000 acres in the Hermosa Creek Watershed beginning June 1, 2018. Following the fire, the U.S. Forest Service deployed an interdisciplinary Burned Area Emergency Response (BAER) team to assess the potential downstream impacts resulting from changes to the soil composition. The BAER team's report analyzed soil burn severity in the burn scar and identified areas most susceptible to flooding and debris flow. There have since been multiple flooding events affecting private property owners, community resources, and water quality in drainages within the Hermosa Creek and Animas River watersheds; these events are likely to continue in the years to come.

OBJECTIVES

The objective of this project is to engage, educate and coordinate impacted property owners, neighborhoods and other stakeholders to implement the NRCS EWP program to deploy mitigation actions throughout affected or threatened areas so as to maximize the effectiveness of the program for reducing threats to life and safety, protecting from future flooding, and restoring the hydraulic capacity of historic and natural drainages to pre-event conditions with the overarching objective of improving the health of the Hermosa Creek and Animas River watersheds following the 416 Fire and its ongoing impacts.

This project will **(1) map, inventory, and prioritize areas for mitigation and restoration** projects on private property to reduce threats to life and safety, protect from future flooding, and restore the hydraulic capacity of historic and natural drainages; **(2) develop and implement a comprehensive outreach and education program** to coordinate private landowners and other community stakeholders in the Hermosa Creek and Animas River watersheds to maximize mitigation and restoration project effectiveness; **(3) design, engineer and implement mitigation projects** that achieve the watershed restoration objectives; **(4) operate and maintain projects** as necessary, and **(5) coordinate, administer, and report** project outcomes. These actions will serve to improve and restore the health of the Hermosa Creek and Animas River watersheds, aligning with La Plata County's role as a partner in protecting and restoring these critical reaches that are essential to the health of the community.

TASK 1 – MAP AND INVENTORY AREAS FOR MITIGATION AND RESTORATION

Description of Task: We will map affected properties in the Hermosa Creek and Animas River watersheds, inventory the damage and flood hazards rendered by the loss of vegetation and soil composition changes resulting from the 416 Fire, and establish priorities for mitigation and restoration.

Method/Procedure: Mapping will be conducted using county GIS capacity, incorporating FEMA flood plain data and historic debris flow data. Additionally, the project will utilize mapping created for the U.S. Forest Service Burned Area Emergency Response report for the 416 Fire, which indicates probability and volume for flooding and debris flow events. The NRCS EWP Damage Survey Reports (DSRs) will function as the primary tool for inventorying properties affected by flooding and debris flows.

Deliverable: GIS shapefile of floodplain, historic debris flows and affected properties. Individual DSRs for affected or threatened properties. Information will be stored at La Plata County.

TASK 2 – EDUCATE, OUTREACH AND COORDINATE LANDOWNERS

Description of Task: We will develop and implement an outreach, education and coordination plan to engage property owners and stakeholders in effective participation in watershed restoration efforts.

Method/Procedure: LPC will engage and coordinate with stakeholders to facilitate outreach to several levels of the community: neighbor, neighborhood, homeowner associations, ditch companies, utilities, and other community partners. We will work with affected property owners and stakeholders to notify them of the EWP program and opportunity to participate, coordinate neighborhoods to participate in the project to maximize the work's effectiveness in protecting and restoring for private properties, community assets and watershed health.

Deliverables: Power point presentation materials, web page, and permission forms that reach approximately 170 affected property owners; 5 presentations; 4 articles in regional print media; website; neighborhood representatives activated to coordinate project work, operation and maintenance in discreet areas throughout the Animas River and Hermosa Creek watersheds.

TASK 3 – DESIGN, ENGINEER, PRIORITIZE AND IMPLEMENT MITIGATION PROJECTS

Description of Task: We will coordinate design, engineering and construction of mitigation and restoration projects identified in the DSRs.

Method/Procedure: Services will include oversight necessary to insure compliance with the program and applicable Code of Federal Regulations. Project management will include day to day project administration of design, engineering, procurement/financial, legal, and permitting to insure program compliance during implementation of the EWP preferred alternatives. This will comprise preliminary and final design consistent with the DSR preferred alternative, coordination with property owners for program compliance, securing required federal, state, and local permitting, construction administration/management/inspection of program improvements identified in the plans, insure a safe work environment, quality assurance and compliance with permitting requirements, and management of all construction documents, pay requests, project schedules, and recording of drawings.

Deliverables: Pre-construction design conference meeting minutes. Schedule with time lines (Gantt Chart) of major items to be completed. Program prioritization; prioritize DSRs based on threat to life and property and maximum benefit to reaches within the Hermosa Creek and Animas River watersheds. Acquire needed real property rights, easements, and permits (prior to start of construction. Secure necessary Federal, State, Local permits. Completion of necessary engineering and or property surveys. Completion of preliminary engineering plans, details, and specifications for NRCS review. Completion of final engineering plans, details, and specifications. Completion of quality assurance/quality control plan. Bidding and contract documentation. Record drawings, final certifications. Close out permits and record maintenance schedule if required.

TASK 4 – OPERATE AND MAINTAIN PROJECTS

Description of Task: Monitoring will be completed pre-treatment, immediately after treatment, and annually following treatment. Secondary infestations from a treated area will be retreated as they are discovered.

Method/Procedure: A unified operation and maintenance plan will be designed as part of Task 3 that will incorporate the goals and objectives of the EWP program along with the engineered solutions. LPC will work with partners to train landowners to execute their operation and maintenance plan for their specific property as well as in concert with neighbors to achieve long-term flood protection and watershed restoration.

LPC will coordinate field assessments to ensure the continued effectiveness and functionality of restoration and mitigation projects. Maintenance will performed, if necessary, to remediate any projects. Forms will be submitted digitally or in hard copy to the LPC. Results will be compiled annually into a report.

Deliverable: Operation and maintenance plan (2019), operation and maintenance summary (annually), GIS layers, photo documentation, and operation report (2020 as Final Report).

TASK 5 – COORDINATE, ADMINISTER, AND REPORT PROJECT OUTCOMES

Description of Task: LPC will lead the EWP team to coordinate the activities of the grant, administer the CWCB funds and matching funds, and report on project outcomes. LPC will maintain financial records of all expenditures, in-kind contributions, and cash contributions.

Method/Procedure: LPC will review CWCB grant management guidelines and all matching grant requirements. LPC will manage funding and grant reporting using county financial software and tracking mechanisms.

Deliverables: Bi-annual progress reports to CWCB beginning spring of 2019, Annual Monitoring Reports (2019, 2020, 2021), and Final Report (January 2020). The progress reports shall describe the completion or the partial completion of the tasks identified in the statement of work including a description of any changes in direction or other corrective action that may be taken to address potential issues. At the completion of the project, LPC will submit a final report summarizing the method for the operation and maintenance, GIS layers, photos, outreach materials, and a description of accomplishments in terms of acres, number of partners, and number of landowners involved in the project.

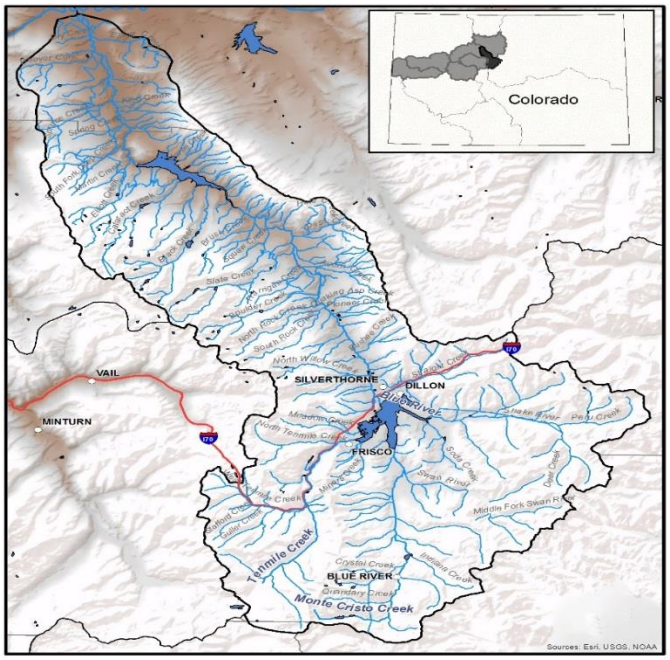
Colorado Watershed Restoration Program
Budget & Timeline Table

Task	Description	Target Start Date	Target Completion Date	CWCB Funds	Other Funding Cash				Other Funding In-Kind			Total
					La Plata County	Cost Share - NRCS Grant	Cost Share - DOLA & DHSEM	Property Owner Cost Share	La Plata County	Local Partners & Non-Profits	Property Owner	
1	Map and Inventory Areas for Mitigation and Restoration	1/14/2019	1/31/2020	10,000	10,000	-	-	-	5,000	-	-	$ 25,000
2	Educate, outreach and coordinate landowners	8/1/2018	1/31/2020	10,000	10,000	-	-	-	10,000	10,000	-	$ 40,000
3	Design, engineer, prioritize and implement mitigation projects	1/14/2019	12/27/2019	470,000	120,000	4,513,500	663,750	13,750	13,000	-	60,000	$ 5,854,000
4	Operate and Maintain Projects	12/30/2019	12/23/2022	-	-	-	-	-	5,000	20,000	20,000	$ 45,000
5	Coordinate, administer, and report project outcomes	12/1/2018	12/27/2019	10,000	10,000	-	-	-	5,000	-	-	$ 25,000
		Total		$ 500,000	$ 150,000	$ 4,513,500	$ 663,750	$ 13,750	$ 38,000	$ 30,000	$ 80,000	$ 5,989,000

Colorado Water Conservation Board-Colorado Watershed Restoration Program Grant Application.

Summary Sheet

Project Title: Blue River Integrated Water Management Plan.
Project Location: Blue River Basin in Colorado. See (Map 1) below.
Grant Type: Stream Management Plan Grant
Grant Request/Amount: $126,819.00
Cash Match Funding: $63,110.00
In-kind Match Funding: $63,710.00
Project Sponsor(s): Trout Unlimited and Blue River Watershed Group (TU will act as fiscal agent).
Contact Information: Richard Van Gytenbeek r.vangytenbeek@tu.org (307) 690-1267 and/or Dan Omasta DOmasta@tu.org (720) 354-2647.



(Map 1) The Blue River Basin

Project Description

Trout Unlimited (TU) and the Blue River Watershed Group (BRWG) are working together to produce a basin-wide integrated water management plan (IWMP) for the Blue River basin in Summit and Grand Counties in Colorado. The long-term goal of the IWMP will be to enable consumptive and non-consumptive water users to understand and quantify current and future use and integrate those uses for the maximum benefit of all users while protecting the existing water resource.

The initial scope of work for this grant request (IWMP-Phase One) has two primary objectives to be completed through four main tasks. The two objectives are to: 1) work in parallel with the Blue River Enhancement Workgroup (BREW) to understand the reasons for the declining Blue River trout fishery; and 2) compile current research, management plans, and stakeholder input to inform the IWMP-Phase Two. Tasks include: 1) the formulation of an advisory team along with broad stakeholder outreach; 2) determination of the causes for the declining fishery between Dillon and Green Mountain Reservoirs; 3) compilation and analysis of existing data-information-studies; and 4) the development of "next steps" focusing on the formulation of IWMP-Phase Two implementation goals and objectives.

Applicant Qualifications

The lead project sponsor and fiscal agent is Trout Unlimited (TU), represented by Dan Omasta and Richard Van Gytenbeek. Trout Unlimited is the nation's largest cold-water conservation organization, with 250,000 members dedicated to conserving, protecting, and restoring North America's trout and salmon fisheries and their watersheds. Colorado Trout Unlimited has 11,000 grassroots members across the state. Trout Unlimited believes that conservation should be a true partnership between landowners, agencies, municipalities, and all stakeholders. TU manages millions of dollars in grants from private foundations, state and federal agencies and is well-positioned to act as fiscal agent.

TU will be working closely with the Blue River Watershed Group (BRWG) board and staff throughout the project. The BRWG was formed in 2004 and received its 501(c) (3) status from the IRS on September 8, 2005. BRWG is managed by a volunteer board of directors who have expertise in various fields related to water, land use and environmental stewardship and represent a number of vital stakeholders. The BRWG has experience managing grant funding from a variety of private and public sources including the Summit Foundation, Vail Resorts, Cliff Bar Flowing Rivers Campaign, the Colorado Water Conservation Board, the Environmental Protection Agency, Colorado Department of Public Health and Environment, and the National Forest Foundation

Both TU and BRWG have extensive water-related experience in the basin and will be providing substantial staff time to the project for the purposes of restoring and protecting basin natural resources through this integrated approach (see below for more information). Our growing list of project stakeholders are also committed to the purposes of restoring and protecting basin natural resources and have expressed their written support for this integrated multiple objective approach (see attached letters). Many of these supporters have expressed interest in financially supporting this effort, as well as the future programs, projects and management changes that result.

Organizational Capacity

Projects and Planning.

Both TU and BRWG have been, and continue to be, involved in many Blue River basin water planning efforts and projects.

Trout Unlimited:

- Recently completed a four-year project with Summit County Open Space, Town of Breckenridge, USFS and EPA to mitigate water quality impacts from the Mountain Pride mine in Illinois Gulch.
- Ongoing involvement with Snake River Task Force.
- Assisted NWCOG on water quality sampling in Peru Creek to determine reclamation actions for the Penn Mine.
- Partnering with Summit Open Space to clean up the Manila Lode Claim.
- TU staff were also involved in the crafting of the Colorado River Cooperative Agreement.

Colorado Trout Unlimited-Gore Range Chapter:

- Swan River Restoration Project participant.

- Greenback Cutthroat stocking efforts in Dry Gulch and Herman Gulch.
- Assist CPW in Swan River fishery surveys.
- Summit County High School-Trout in the Classroom project.
- Plan and host the TU Western Regional Meeting in Keystone.
- Project Healing Waters-Support for disabled veterans.
- Designed and implemented the Blue River Explorer Hike.

Blue River Watershed Group:

- Received an EPA grant to produce the Snake River Basin Watershed Plan. The plan identified mine remediation projects in the basin and prioritized the worst problems.
- In partnership with NWCOG, Co. Dept. of Reclamation Mining and Safety, BRWG facilitated three remediation projects at the Silver Spoon Mine, Delaware Mine and the Cinnamon Gulch realignment.
- Swan River Restoration-partner in restoring 2.3 miles of river and 100 riparian acres of surrounding land.
- Tenmile Creek-Partnering with USFS and Copper Mt. Ski Resort restored 2800 LF of the creek and 6 acres of adjacent bank and floodplain.
- Ongoing partnership with the Colorado River District's State of the River sessions covering a host of topics including water law, snowmaking, water and land trusts, Snake River Watershed Plan and water conservation.

The BRWG also lists among its board members, individuals that have worked on a variety of different Blue River basin projects.

This record of involvement in local water projects and planning demonstrates that the project sponsors have a clear understanding of the local water resource.

Project Staffing

TU and BRWG are collectively committed to provide staff (Project Staff) support at a .70 FTE annual equivalent level (1400 Hrs.). This responsibility will be shared among three staff members: R. Van Gytenbeek (TU-National staff at .35 FTE), Dan Omasta (Colorado TU staff at .25 FTE) and Jennifer Hopkins (BRWG staff at .10 FTE). This collective commitment means that project sponsor staff members will be dedicating a total of 18.6 hours per week to project management for the proposed 18-month grant period. While this average will vary from week to week, the sponsors believe that a high level of oversight is necessary to keep stakeholders vested in the project through public outreach (local and Front Range media outlets), project stakeholder updates and coordination, attendance at public and project-focused meetings. We anticipate that much of this staff time will be dedicated to public outreach during the initial months of the project. Project sponsors' experience with mountain recreation-based communities is that consistent and constant messaging is necessary to compete with the wide diversity of programs and issues that permeate daily life in these complex communities.

In addition to Project Staff, the local Gore Range TU Chapter and BRWG members will be available as volunteer labor. We anticipate their help during the community meetings and during some data collection efforts associated with Task 2.

Key Proposal Components

Existing Information Resources

The development of the Blue River IWMP Phase One Project scoping was guided by the CBRT-IWMP Framework - specifically focused on the information compiled in the Colorado Headwaters Sub-regions (Summit Region) page on basin organizations, projects and studies (Available: http://uppercoloradoriver.org/co-river-headwaters/colorado-headwaters-sub-regions/). To date, the initial stakeholder engagement process also revealed additional critical studies, projects, and resources that have helped to inform and define the IWMP-Phase One Objectives and Tasks.

During the execution phase of the Blue River IWMP Phase One effort, Project Staff and the project consultant(s) (Consultant) will be contacting and researching additional sources of information that may exist from private studies, state and federal agencies, the Colorado Headwaters Sub-regions data portfolio, and local organizations and individuals. Project Staff and Consultant will also work closely with the Blue River Enhancement Workgroup (BREW) - a coalition of stakeholders on the middle reach of the Blue River that are focused on identifying and correcting causes of the declining fishery to ensure collaborative results and avoid duplicative actions.

Project Objectives

There are two project objectives within Phase One of the Blue River IWMP. Beginning in May of 2018, these objectives have evolved through numerous stakeholder meetings with local municipalities, Summit County, state agency personnel, federal agency personnel, Front Range water providers, local AG producers, recreation and ski industries, and other community groups and individuals. We believe that these two objectives will provide the foundation for on-the-ground projects and innovative water management techniques that will be identified in Phase Two. A more detailed discussion of project objectives can be found in the "Scope of Work-Objectives" section.

Objective 1. To understand the potential causes of the declining fishery between Dillon and Green Mountain reservoirs and determine whether (and how) the decline can be reversed or mitigated.

Objective 2. To compile, review and integrate existing basin studies, plans and other information regarding physical and biological aspects of the Blue River basin water resources for the purpose of formulating objectives and goals that will guide future water management decisions in Phase Two.

Monitoring and Implementation

Monitoring and Implementation for both objectives is as follows. Detailed discussions of both these project components can be found in the "Scope of Work-Tasks" section.

Objective 1. Monitoring the physical, biological, hydrologic, and user components of the Blue River fishery between Dillon and Green Mountain reservoirs is essential to understand the reasons for its decline. While some information has been generated to identify potential causes of the declining fishery, a definitive diagnosis remains unknown. In order to better understand the impacts of certain variables under different environmental conditions, many of these studies will be continued beyond one season and ideally involve a three-year monitoring study where appropriate. The results of these studies are intended to guide the efforts of the Blue River Enhancement Workgroup and the implementation of a plan to reduce and mitigate the causes of the declining fishery in "Phase Two" of the Blue River IWMP.

Objective 2. The effort to compile, review and integrate existing water resource information will effectively comprise the monitoring component for Objective 2. Implementation will manifest as the effort to translate that information into effective future water management decisions and projects during Phase Two. There will also be limited field-based data collection associated with Phase One implementation under this objective.

Budget, Match and Schedule.

The Blue River IWMP-Phase One project is valued at $253,639.00. The project sponsors are requesting 50% of the cash funding from the Stream Restoration Program grant, Stream Mgt. Plan category in the sum $126,819.00. The project sponsors will submit applications to the CWCB-Colorado Water Plan implementation fund in the Environmental/Recreational Projects and/or Education/Outreach categories and the CWCB-WSRF program (state and basin funds) for 25% of the cash funding in the amount $63,110.00. The project sponsors are providing the remaining 25% of the grant through dedicated staff hours as in-kind services in the sum of $63,710.00.

Table 1: Blue River IWMP Phase One General Project Budget

Task	Description	Target Start Date	Target Completion Date	CWCB Funds	State Grants*	Other Funding In-Kind	Total
1	Stakeholder Outreach and Advisory Team Development	1-Feb-19	31-Jul-20	$14,300		$15,700	$30,000
2	Assess Declining Fishery between Dillon and Green Mtn Reservoirs	14-Nov-19	31-Jul-20	$63,965	$36,755	$25,810	$126,530
3	Compile and Review Existing Available Data, Information and studies	1-Jun-19	31-Jul-20	$28,950	$13,390	$15,560	$57,900
4	Develop BRIWMP Goals and Objectives for Phase 2	1-May-20	31-Jul-20	$6,780	$140	$6,640	$13,560
-	General Grant Administration and Management	1-Jun-19	31-Jul-20	$12,824	$12,825		$25,649
	Totals			**$126,819**	**$63,110**	**$63,710**	**$253,639**

* Funds pending.

At this time, the project sponsors have not requested direct cash funding from local municipalities, Summit County, Front Range water providers, and other interests in this first phase. Based on initial stakeholder outreach, we believe that Phase One will identify and catalyze critical real-time projects and water management techniques that will inspire greater community investment in Phase Two. Many project sponsors must rely on their annual budgeting processes and community support in order to commit funding to water projects – which requires advanced planning and data to justify

such expenses. We foresee this IWMP Phase One plan as that guiding document, which will enable community planners and water managers to leverage funding (including CRCA funds) in the Basin.

The project budget has been carefully assembled by the project sponsors using real time billing rates and detailed staff-hour estimates. These numbers are summarized in the attached budget and timeline as Attachment B.

Attachment B: Detailed Budget and Timeline

Table 2: Blue River IWMP Phase One Detailed Project Budget

	TaskDescription	Estimated Hours	Total Labor Costs	Total Other Direct Costs	Task Totals
TASK 1	**Stakeholder Outreach and Advisory Team Development**				
a	Develop core advisory team, document all meetings, manage RFPs and data	112	$ 4,800	$ -	$ 4,800
b	Community stakeholder meetings w/ hired facilitator (3 meetings)	184	$ 17,200	$ 1,500	$ 18,700
c	Advisory team meetings (6 meetings)	158	$ 6,500	$ -	$ 6,500
	TASK 1 TOTAL:		**$ 28,500**	**$ 1,500**	**$ 30,000**
TASK 2	**Assess Declining Fishery between Dillon and Green Mtn Reservoirs**				
a	Coordinate with BREW, develop assessment program	88	$ 3,600	$ 500	$ 4,100
b	Stream temperature monitoring (3 sites upper, 7 middle, 3 lower Blue)	206	$ 12,700	$ 4,000	$ 17,150
c	Assess benthic invertebrate populations; diet, growth rates, and periphyton	448	$ 58,080	$ 4,000	$ 62,080
d	Creel Survey	141	$ 7,470	$ 500	$ 7,470
e	Review studies on potential contamination from upstream sources	118	$ 13,600	$ 200	$ 13,800
f	Analyze history of fish populations in relation to environmental data	78	$ 8,040	$ 200	$ 8,240
g	Review records on fish abundance, size distribution, population characteristics	70	$ 7,440	$ 200	$ 7,840
h	Coordination with BREW; prepare report and recommendations	82	$ 5,800	$ 200	$ 6,000
	TASK 2 TOTAL:		**$ 116,730**	**$ 9,800**	**$ 126,680**
TASK 3	**Compile and Review Existing Available Data, Information and studies**				
a	Collect and review existing data	112	$ 11,000	$ 200	$ 11,200
b	Assess and compile water operations	156	$ 12,000	$ 200	$ 12,200
c	Inventory recreational water uses	86	$ 6,000	$ 200	$ 6,200
d	Meetin with producers and inventory agricultural needs	96	$ 6,960	$ 200	$ 7,160
e	Synthesize data, summarize and identify critical needs	196	$ 20,940	$ 200	$ 21,140
	TASK 3 TOTAL:		**$ 56,900**	**$ 1,000**	**$ 57,900**
TASK 4	**Develop BRIWMP Goals and Objectives for Phase 2**				
a	Advisory committee meetings to analyze results and set goals (2)	108	$ 8,020	$ 200	$ 8,220
b	Draft and complete IWMP goals and objectives	88	$ 5,340	$ -	$ 5,340
	TASK 4 TOTAL:		**$ 13,360**	**$ 200**	**$ 13,560**
GEN					
	Grant Administration and Management	-	$ 25,649		$ 25,649
	GEN TOTAL:		**$ 25,649**	**$ -**	**$ 25,649**
	TOTAL, PHASE 1		**$ 241,139**	**$ 12,500**	**$ 253,639**

1.0 PROJECT PROPOSAL SUMMARY SHEET

Project Title:	*Upper Gunnison Basin Watershed Assessment and Management Planning Phase II: Final Planning for Ohio Creek, East River, and the Lake Fork Sub-basins and Assessment for Cebolla, Taylor, and the Gunnison Mainstem*
Project Location:	Ohio Creek, East River, Lake Fork, Cebolla, Taylor and Gunnison Mainstem Sub-basins of the Upper Gunnison Basin
Grant Type:	Watershed Restoration Program: Stream Management Planning
Grant Request Amount:	$300,000
Cash Match Funding:	$283,000
In-kind Match Funding:	$51,450
Project Sponsor:	Upper Gunnison River Water Conservancy District
Contact:	Frank Kugel 210 West Spencer, Suite B Gunnison, CO 81230 Phone: (970) 641-6065 Email: fkugel@ugrwcd.org

Project Summary:

The Upper Gunnison Watershed Assessment and Stream Management Plan is intended to improve water security for all water uses in the Upper Gunnison Basin, by protecting existing uses, meeting user shortages, and maintaining healthy riverine ecosystems in the face of growing future demands and permanent water supply reductions due to climate change, as laid out in the Gunnison Basin Roundtable Implementation Plan (GBIP) and the Colorado Water Plan (CWP). Baseline and future needs assessment information will be compiled from the eight sub-basins, resulting in a comprehensive watershed management plan for the Basin that recognizes the complex interactions between environmental, agricultural, municipal, and recreational uses of water.

Phase I of the planning effort covered issues identification and assessment in three sub-basins: East River, Ohio Creek, and the Lake Fork of the Gunnison. Work to be completed as part of this funding request includes prioritizing options and developing implementation plans for the first three sub-basins, including the start of demonstration projects in these watersheds. In addition, we plan to conduct issues identification and assessment for three additional sub-basins: Cebolla, Taylor, and the Gunnison mainstem, specifically:

1) stakeholder outreach to gather the range of water user needs and values;
2) initial sub-basin mapping and data compilation;
3) identification of informational gaps in non-consumptive and consumptive uses;
4) assessment of stream health and modeling of historic and current water uses to address gaps.

Total budget for Phase II, including all grants and in-kind contributions is $634,450. Requested amount from the CWCB Watershed Restoration Program is $300,000.

2.0 PROJECT BACKGROUND

2.1 Target Basin and Water Uses

The Upper Gunnison River Basin is an important headwaters area of the Gunnison River, a major tributary of the Colorado River (Figure 1). Major watersheds within the Upper Gunnison Basin include the East River, Ohio Creek, Taylor River, Tomichi Creek, Cochetopa Creek, Cebolla Creek, and the Lake Fork of the Gunnison, along with other smaller tributaries to Blue Mesa Reservoir. In addition, about twenty heavily-used miles of the Gunnison River mainstem, from Almont to Blue Mesa Reservoir, are included as a sub-basin. Each of these sub-basins have unique qualities, a distinct set of uses, and specific needs for a future defined by water scarcity. All of them have environmental needs that – being headwaters streams – are important to the entire Colorado River Basin. Primary water uses in the Upper Gunnison Basin include the following:

- *Agriculture* - primarily for irrigated hay and pasture meadows with rights to approximately 95% of the of the Basin's water resources;
- *Water-based recreation* - such as rafting, kayaking, flat water boating, fishing, and skiing.
- *Domestic - uses* that include towns and cities, housing subdivisions, private wells, and public service utilities;
- *Traditional industrial uses* - such as mining and hydropower energy production, and nontraditional geothermal water use in the Upper Gunnison Basin. Blue Mesa Dam hydropower rights are a factor in basin-wide planning;
- *Watershed ecosystems* - that require a certain quantity and quality of flowing water to sustain healthy ecosystem functions.

2.2 The Need for Watershed Assessment and Management Planning

This proposal represents the desire of the Upper Gunnison River Water Conservancy District (UGRWCD) and its partners to continue watershed planning work as laid out in the GBIP and the CWP. The Upper Gunnison Watershed Assessment and Management Plan is intended to improve water security for all water uses in the Upper Gunnison Basin, by protecting existing uses, meeting user shortages, and maintaining healthy riverine habitats in the face of growing future demands and permanent water supply reductions due to climate change. Once baseline and future needs assessment information is compiled from the eight sub-basins, planning partners will approach watershed and stream management planning holistically, acknowledging the complex interactions between environmental, agricultural, municipal, and recreational uses of water. Resulting watershed management plans will be adaptive by nature, recognizing the importance of accommodating existing and future consumptive use needs, incorporating emerging climate factors, while striving to maintain or improve the current state of aquatic ecosystem health.

Each sub-basin is unique enough to warrant its own needs assessment for incorporation into a comprehensive Upper Gunnison Watershed Management Plan. The following factors need to be accounted for in each sub-basin needs assessment:

- *Current Use and Identified Conservation, Efficiency or Other Projects and Processes (IPPs)*
- *Anticipation of Future Population Growth* - State Water Supply Initiative (SWSI) projections indicate that the human population of the Upper Gunnison Basin will grow from approximately 16,000 to an estimated 24,000 by mid-century (50% increase), depending on numerous geographic, economic and cultural factors.
- *Water Supply Losses from Climate Change* - Existing research reveals that impacts of climate change to our basin may be significant. Impacts already being experienced include earlier

peaks in spring runoff, lower summer flows due to higher evapotranspiration rates, and a decrease in water supplies of 20 percent by 2050.

- *Geopolitical Colorado River Basin Issues* - Another dry period in the Colorado River Basin equivalent to the 2000-2006 drought would bring strong pressure from large junior water users (Denver Water's Roberts Tunnel, the Fry-Ark Project, etc.) upon agriculture to lease or sell water senior to the 1922 Colorado River Compact, to meet urban and Lower Basin needs, with implied threat of administration if the water is not forthcoming. Such procedures are already in public discussion as 'demand management' by state and Upper Colorado River Basin water management agencies. This creates a need for water managers and other stakeholders in basins such as the Upper Gunnison to determine the true value of water, both for economic and ecological needs, and plan for the effects and costs of interrupted supply scenarios.

3.0 GOALS AND OBJECTIVES

3.1 Long-term Goals and Objectives

The long-term goal of this effort is to enhance resilience and stability of agricultural, municipal, and recreational water uses and to improve stream ecosystems in the Upper Gunnison Basin. The Upper Gunnison Basin watershed planning process (to be finished beyond this funding request) has two broad objectives:

1) Assess and quantify environmental, agricultural, municipal, recreational, and industrial needs/uses, and when and where those needs are not met.
2) Develop watershed management and implementation plans that can be used to manage shortages, sustain existing uses, and maintain healthy stream ecosystems in the face of increased demands and climate uncertainty.

The long-term planning and implementation effort will result in the following benefits upon completion:

1) *Better understanding of spatial and temporal water availability gaps* - under existing water management conditions.
2) *Development of specific models for each major tributary of the Upper Gunnison Basin* - for managing future water use in a way that best protects existing uses, ecological function, and sub-basin-specific priorities and adapts to future changes in the hydrological cycle.
3) *Access to funding for infrastructure improvement* - by identifying infrastructure needs in the assessment process, stakeholders will be more readily able to access sources of funding from the UGRWCD, Gunnison Basin Roundtable, State Water Supply Reserve Fund, and other resources that become available for CWP implementation.
4) *Greater grassroots determination of how we manage our watershed resources* - working collaboratively to improve watershed health will maximize our self-determination in watershed use, avoiding Endangered Species Act and Clean Water Act enforcement issues.
5) *High functioning riparian areas and forage* - high functioning riparian areas increase water storage and percolation, elevate saturation zones, dissipate storm energy, and enhance vertical and lateral channel stability.
6) *Improved fisheries that will enhance recreation and increase angling opportunities* - enhancing these fisheries could provide additional recreational economic opportunities on both private and public lands.

7) *Healthy ecosystems* - protecting watershed health provides a range of ecosystem services, including cleaner drinking water, fertile soils, productive nutrient cycles, and intangible benefits.

3.2 Long-term Planning Timeline

The following table summarizes the timeline for completion of the Upper Gunnison Basin Watershed Management Assessment and Planning process, by sub-basin (a portion of which is beyond the scope of this funding request):

Sub-Basin	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Ohio Creek	A	A	O& P	O& P		
East River	A	A	O& P	O& P		
Lake Fork	A	A	O& P	O& P		
Cebolla			A	A	O& P	
Taylor			A	A	O& P	
Gunnison mainstem			A	A	O& P	
Tomichi					A	O& P
Cochetopa					A	O& P
Planning Phase I						
Planning Phase II						
Planning Phase III						
A= Assessment			O&P: Options and Planning			

3.3 Objectives for this Funding Request

This grant request to CWCB is for the second phase of the planning process described above, initially focusing on completion of planning for Ohio Creek, East River, and the Lake Fork of the Gunnison, and assessment for Cebolla, Taylor, and the Gunnison mainstem. Once these tasks are complete, assessment and planning will be completed for Tomichi and Cochetopa in Phase III (contingent on future funding sources).

Specific objectives for Phase II (2019-2021) are the following:

1) Create a prioritized list of watershed best management practices based on assessment, demonstrations, and stakeholder input, to be used for subsequent sub-basin and basin-wide planning in the East River, Ohio Creek, and the Lake Fork.
2) Demonstrate water use efficiency or other watershed best management practices with on the ground pilot sites in all Phase I sub-basins.
3) Develop implementation plans for each of the Phase I sub-basins.
4) Identify key stakeholders and their values and uses of watershed resources in the Phase II sub-basins of Cebolla, Taylor and Gunnison mainstem.
5) Working with stakeholders, identify data gaps to determine assessment needs for Phase II sub-basins, including stakeholder ideas for water use efficiencies and other watershed management best practices.
6) Address information gaps through consumptive and non-consumptive assessments.
7) Secure funding to complete Phase III of the planning process.

3.4 Planning Progress to Date in Phase I Sub-basins

The following items were completed during the first two years of the planning process:

1) The Sub-basin coordinators conducted extensive stakeholder outreach to understand the range of water users' needs and values;
2) The consultant, Wilson Water Group, has completed an inventory of existing data to create maps and identify data gaps. A major effort has gone into correcting ditch assignments and links to irrigated acreage in the sub-basins;
3) Alpine Environmental Consultants completed field assessments of river flows and habitat quality and evaluated other environmental data;
4) The consultants and sub-basin coordinators have used these field surveys, models and/or stakeholder input to address data gaps in non-consumptive and consumptive uses;
5) Initial studies are being planned to determine feasibility of possible demonstration projects.

3.5 Description of Phase II Sub-basins

Cebolla Creek: Cebolla Creek flows into the southeastern portion of Blue Mesa Reservoir. The sub-basin encompasses over 390 square miles and is sparsely populated. The Cebolla Creek sub-basin has large areas of irrigated pasture land as its residents are primarily ranchers. Population is concentrated around the community of Powderhorn. Ranchlands in this area are increasingly being bought up and subdivided, increasing pressure on existing water uses. In addition, a large titanium mine is proposed in the lower valley just upstream of Powderhorn. The upper watershed is primarily US Forest Service and US Bureau of Land Management land and has extensive spruce beetle kill which may influence runoff dynamics and creates a high fire danger. The Lake Fork Valley Conservancy, a partner to the UGRWCD, has added the Cebolla Creek sub-basin to its focal area and this watershed planning effort will be the basis for its work here.

Taylor River: The Taylor River is one of the Colorado River's wettest headwater watersheds, draining the western slopes of the Collegiate Range and portions of the Sawatch Range, two of the highest ranges in the entire Continental Divide, as well as the easternmost portions of the Elk Mountains and the northwesterly slopes of the Fossil Range. Several tributaries collect the river's flow in a large high-altitude park before the river drops into a spectacular canyon region approximately 20 miles long, to its confluence with the East River in Almont. The head of the canyon was dammed in the 1930s to create the 106,230 acre-foot Taylor Park Reservoir in the lower portion of Taylor Park to provide late-season storage for the Uncompahgre Project in the Montrose-Delta area. In addition to water for that project, the Taylor River and Taylor Park Reservoir are used and managed locally for whitewater recreation including commercial operations, lake and stream fishing, agricultural irrigation, and flatwater recreation. Taylor Park and a smaller open area in the canyon have several established guest resorts and high-end real estate developments with alluvial wells.

Gunnison River Mainstem: The Gunnison River mainstem begins at the confluence of the East and Taylor rivers in Almont. After several miles of widening canyon, it emerges into a broad and extensive floodplain, in the center of which sits the City of Gunnison, the most densely populated area of the Upper Gunnison Basin, with a population of 6,500 people. The town is surrounded by agricultural land primarily in hay production, and a number of real estate developments that are converted agricultural land. Ohio Creek joins the mainstem just northwest of Gunnison; Tomichi Creek flows into the mainstem just southwest of Gunnison. Further west of Gunnison, the river is again contained in a short canyon which opens up again into a former ranching valley which is now

almost completely inundated by the 945,000 acre-foot Blue Mesa Reservoir. The Lake Fork of the Gunnison River, Cebolla, Soap, Elk, Dry, Steuben and Beaver creeks all flow into Blue Mesa Reservoir, along with other smaller streams, from the West Elk Mountains to the north and the Alpine Plateau to the south. The mainstem is primarily used for agriculture and urban-suburban alluvial supplies (municipal and private wells). The City of Gunnison also has an early decree for direct flows for a municipal ditch system. The mainstem, especially the canyon reaches, is also heavily used by fishermen, and the commercial rafting industry extends to the Reservoir. Blue Mesa Dam, at the beginning of the deeper and wilder Black Canyon region, is considered the outlet of the Upper Gunnison River Basin.

All the Upper Gunnison Basin rivers and streams are currently over-appropriated and water shortages are evident. The need to identify collaborative management solutions is urgent throughout the basin to address environmental, recreational, agricultural, and municipal water needs considering changing hydrology, increasing population, development, and recreational use.

4.0 ORGANIZATIONAL CAPACITY

UGRWCD will be the project applicant, providing oversight of the assessment and planning process, and assisting in the coordination of representatives from the agricultural, municipal, industrial, recreational, and environmental water interests. UGRWCD is uniquely positioned to serve in this capacity because its primary mission is to be an active leader in all issues affecting the water resources of the Upper Gunnison Basin. The UGRWCD Board of Directors formally sanctioned a Watershed Management Planning Committee (WMPC), composed of UGRWCD board members, staff, and additional watershed partners. The Committee prepared and approved a framework for watershed management planning which this proposal is based upon. The framework is consistent with action directives in the CWP and the GBIP. In addition, UGRWCD has made substantial financial commitments in the past two years for the initial phase of assessment and planning work and will continue to commit funds throughout the planning and implementation process.

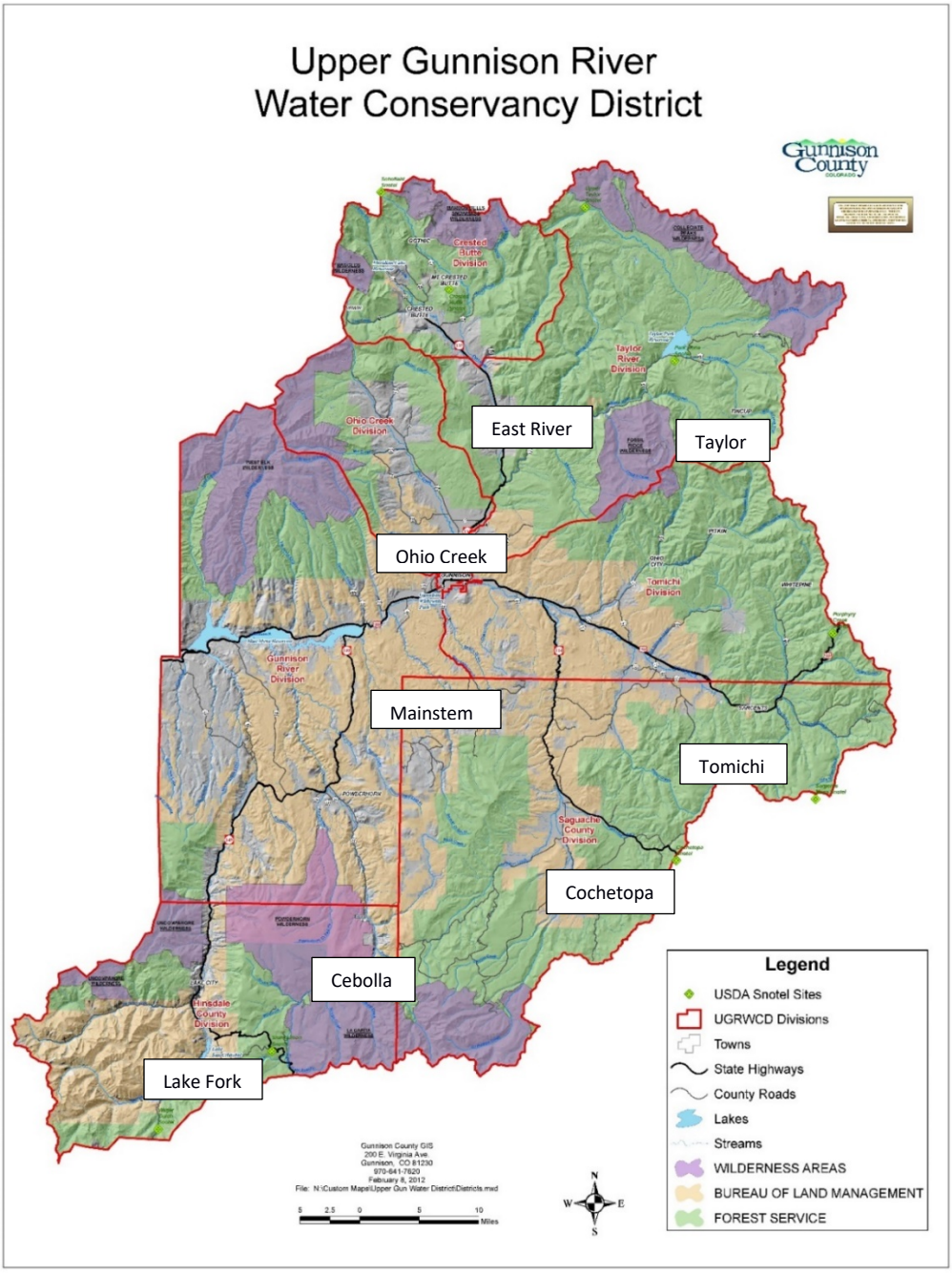
The WMPC will provide technical and fiduciary oversight for all phases of the project. UGRWCD has appointed sub-basin coordinators who are people familiar with the sub-basin and its inhabitants and who interact with the major water users. A complex sub-basin may warrant more than one coordinator – i.e., one to work with agricultural users, another to work with municipal and industrial users, etc. For Phase II, key implementation partners will be Trout Unlimited, High Country Conservation Advocates, and the Lake Fork Valley Conservancy, each serving as liaison in their respective sub-basins of interest. For this Phase, Julie Nania from HCCA will be the main coordinator for the East River, Taylor River, and Gunnison mainstem. Jesse Kruthaupt from Trout Unlimited will continue to be the main coordinator for Ohio Creek, and will assist in the Taylor River and Gunnison mainstem. Camille Richard, LFVC, will coordinate work in the Lake Fork of the Gunnison and Cebolla, and will also assist the UGRWCD with project administration and grants.

UGRWCD will work closely with local, state and federal agencies and local organizations working in the Basin, including the basin municipalities, counties, NRCS, USFS, BLM, CPW, the Gunnison Conservation District, the Gunnison Basin Climate Working Group, the Gunnison Sage Grouse Working Group, Coal Creek Watershed Coalition, Lake Fork Valley Conservancy, the Crested Butte Land Trust, and other relevant entities. These partners will help provide data and information relevant to the assessment effort and will also participate in stakeholder forums to include their perspectives in the assessment and planning process. Graduate students from local universities (Western Colorado University and Colorado Mesa University) will also assist in the process as appropriate, through coursework and research.

5.0 BUDGET AND MATCH

Total cost for Phase II described in the Scope of Work is estimated to be $634,450 with final assessment and demonstration project costs dependent on data gap identification and design specifications. UGRWCD has budgeted $298,000 for fiscal years 2019-21, of which $15,000 is staff in-kind. Other match commitments include 300 hours of staff time from High Country Conservation Advocates and 510 hours from Trout Unlimited, valued at a total of $36,450. A detailed project budget is in Attachment A.

Figure 1. Map of Upper Gunnison River Basin and its Sub-Basins



SCOPE OF WORK

GRANTEE:	Upper Gunnison River Water Conservancy District
PRIMARY CONTACT:	Frank Kugel
ADDRESS:	210 West Spencer, Suite B Gunnison, CO 81230
EMAIL:	fkugel@ugrwcd.org
PHONE:	(970) 641-6065
PROJECT NAME:	*Upper Gunnison Basin Watershed Assessment and Management Planning Phase II: Final Planning for Ohio Creek, East River, and the Lake Fork Sub-basins and Assessment for Cebolla, Taylor, and the Gunnison Mainstem*
GRANT AMOUNT:	$300,000

INTRODUCTION AND BACKGROUND

The Upper Gunnison River Water Conservancy District (UGRWCD) seeks to improve water security for all water uses in the Upper Gunnison Basin by protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems in the face of growing future demands and permanent water supply reductions due to climate change, as laid out in the Gunnison Basin Roundtable Implementation Plan (GBIP) and the Colorado Water Plan (CWP). Work to be completed as part of Phase II of the Upper Gunnison Basin Watershed Management Planning process (UGBWMP) will include baseline and future needs assessment and data compilation, resulting in a comprehensive watershed management plan for the Basin that addresses the protection and sustainable continuity of existing water uses - agricultural, municipal, environmental, and recreational. Related goals include maintenance and improvements to water quality, improvement of relationships between consumptive and non-consumptive water users, improvement and maintenance of water-use infrastructure, and conservation and efficiency among all users.

GOALS AND OBJECTIVES

Long-term goals of the Upper Gunnison Basin Watershed Management Plan are to enhance resiliency of agricultural, municipal, and recreational water uses and improve stream ecosystems in the Upper Gunnison Basin, in anticipation of permanent reductions in the water supply from Climate Change and from significant demand increases in the Colorado River region. The UGRWCD, relying on the expertise of the Project Team outlined below, will identify and work with key stakeholders to understand their values and uses of watershed resources, identify and develop recommendations for future efforts to address data gaps and assessment needs, implement pilot projects to temporarily test the viability of water-use efficiency or flow enhancement alternatives, and provide a range of alternative operations for best management practices in the basin.

Work to be completed in the second phase of the UGBWMP will include inventory development, needs assessment and planning in Phase II sub-basins of the Upper Gunnison: Cebolla, Taylor and Gunnison mainstem, as follows:

1) Stakeholder outreach to understand the range of water users' needs and values;
2) Inventory of existing data to create maps and identify data gaps;
3) Combination of field surveys, models or other appropriate techniques to address data gaps in non-consumptive and consumptive uses.

In addition, work will continue in Phase I sub-basins of East River, Ohio Creek and the Lake Fork, as follows:

1) Development of alternatives, guided by stakeholder comments, to address water shortages and other land management issues, considering historic, current, and projected hydrology.
2) Implementation of pilot projects that demonstrate water use efficiencies, watershed best management practices, and voluntary, temporary, and/or alternative operations to enhance flows.
3) Completion of Phase I sub-basin plans using prioritized actions identified above.

The ultimate outcome of this effort is to build an effective coalition of stakeholders who are committed to sustainable and adaptable uses of our water resources, practices that are necessary in a future of water scarcity. These coalitions will be key to ensuring effective implementation of the sub-basin plans.

TASK 1 - Stakeholder Outreach

Description of Task

Stakeholder engagement is key to successful watershed management and therefore the first and most essential task, as it starts from the beginning of the assessment and planning process. The primary objectives of this task are twofold: the first will be to identify different stakeholders' perception of personal and sub-basin assessment and implementation needs under current conditions; then to identify needs they perceive based upon projected changes for the future, including ideas on how to implement procedures and projects to address stakeholder needs.

Method/Procedure:

A multi-faceted process has been developed to identify our key stakeholders and engagement strategies so that their values and ideas are heard and acted upon, and that they have a sense of ownership in the process. The sub-basin coordinators will be the primary implementation agent to identify and work with stakeholders. Alpine Environmental Consultants (AEC) and Wilson Water Group (WWG) staff will attend stakeholder meetings to provide technical support as requested by UGRWCD and/or the sub-basin coordinators. In addition, they will develop a detailed approach and time-line for implementing Task 2, working with sub-basin coordinators. Task 1 will occur in parallel to the technical work in Tasks 2 and 3 (details below).

Deliverables:

The sub-basin coordinators and UGRWCD staff will schedule meetings, develop agendas, and publish meeting summary notes. WWG and AEC will prepare presentation materials as needed for each outreach meeting. Issues will be compiled in spreadsheets and mapped in a GIS to help with analysis and outreach (by UGRWCD and AEC).

TASK 2 - Inventory and Identification of Information Gaps

Description of Task

The two primary objectives of this task are to inventory existing information (existing studies and reports, stakeholder issues, and model output), and identify needs for additional information, including an initial list of stream assessment locations in the Cebolla, Taylor and Gunnison River sub-basins. This effort will provide necessary information that can be used when engaging in stakeholder outreach and as a foundation for sub-basin management planning. Given this, stakeholder involvement in the data/information compilation and gap identification process will be critical.

Method/Procedure

Alpine Environmental Consultants (AEC) and Wilson Water Group (WWG) will be the consultants primarily responsible for the following:

a) Multi-year water supply trends through analysis of precipitation, temperature, flow, and SNOTEL data, with output designed to be easily explained to the stakeholder groups.
b) Areas with significant human concentrations – include towns and subdivisions that that have significant permanent or tourist-based populations, with output in a GIS map layer that displays key factors, including population and estimated water use.
c) Industrial areas and activities – identify any industrial areas within the sub-basins and include these areas in a GIS map layer that displays estimated water use.
d) Areas with agricultural diversions – The team will initially focus on the irrigation structures in Phase II sub-basins that are explicitly included in the CDSS models, as those were originally determined based on water rights and acreage cutoff criteria. Some locally important diversion structures may not be included in the CDSS models. The team will identify important structures that should be specifically considered. We will provide GIS map layers that show the location of these significant diversions along with their typical wet-, average-, and dry-year annual diversions.
e) Areas with recreational uses – identify and map the recreational use opportunities in the sub-basins, including the Gunnison River Whitewater Park, using input from the Gunnison Basin Implementation Plan, local commercial rafting companies, information available through Colorado Division of Parks and Wildlife, and local outfitters to identify river reaches frequented by anglers. These reaches, and their access points will be included in a GIS map layer. Collect information from recreational user surveys to provide additional information on recreational use in sub-basins.
f) Areas with significant environmental benefits or concerns - compile information to identify healthy river segments, for example cold water fisheries, and segments that may be impaired due to water shortages, poor water quality, or other issues. The consultant will rely primarily on stakeholder knowledge, existing studies including the Basin Information Plan and supporting non-consumptive needs assessments, and aerial photos. The consultants will provide information on decreed instream flow reaches that experience shortages based on stream gage information, where available, and CDSS model simulated flow where gage data is not available. In priority reaches without instream flow rights the team will identify target environmental flows and a minimum flow to characterize shortages within these reaches.
g) Legal analysis on specific topics - such as the prior appropriation system, Aspinall Unit operations and hydropower water rights, trans-mountain diversion concerns, and the Colorado River Compact. In addition, the team will designate calling structures and swing rights for different reaches and for different flow regimes.

h) Existing innovations that demonstrate best management practices for watershed health – The consultants will depend primarily on the UGRWCD and the project stakeholders to provide information on current best management practices in the sub-basins.
i) Review existing information, and new local research on the impacts of alternative agricultural water transfer methods (ATMs). This includes the analysis of cost to ranchers of such methods as fallowing, interrupted supply and deficit irrigation. This needs to be done in different parts of the basin with different circumstances. Funding must include reimbursement for lost production for participating ranches.

UGRWCD legal counsel and sub-basin coordinators will assist the consultants with legal analysis, dissemination of results, and incorporation of feedback from stakeholders. Task 2 will be substantially completed prior to the start of Task 3.

Deliverables

The final deliverables for this task include GIS layers with the information gathered and map "layouts" that display the information so that it is easy to understand and facilitates decision-making by the stakeholder group. Draft map layouts will be provided to the UGRWCD and sub-basin coordinators for review prior to finalization. A technical memorandum will be developed identifying data and knowledge gaps and associated recommendations for additional studies or additional data collection. Information from the water use inventory will be included in the summary report developed under Task 3. Final GIS layers will be provided to UGRWCD.

TASK 3 - Non-consumptive and Consumptive Use Needs Assessment

Description of Task

The primary objective in Task 3 is to address information gaps identified from Tasks 1 and 2 to provide a comprehensive picture of consumptive and non-consumptive uses in the sub-basin. This includes screening and identifying appropriate methods to investigate additional flow needs and begin data collection for priority reaches. Once completed, these inventories, combined with existing data analysis, will accurately portray our water use needs and status of watershed health. Projected changes in precipitation and temperature patterns that may impact water availability and runoff will be assessed with an eye towards how those changes may impact existing uses and watershed health.

Watershed and stream assessments will be conducted to provide information for stakeholders to make informed decisions about watershed needs and priorities and to address environmental and recreational concerns as per the CWP[1]. Ultimately, the scope of assessments will be influenced by watershed attributes, existing studies, and stakeholder concerns, and will inform watershed management planning efforts.

Method/Procedure

Alpine Environmental Consultants (AEC) and Wilson Water Group (WWG) will be the consultants primarily responsible for the following tasks, with support from the sub-basin coordinators:

[1] Chapter 7 (Water Resource Management & Protection) of the Colorado Water Plan asks for "watershed management planning," which appears to encompass all water uses. Chapter 6.6 (Environmental and Recreational Projects and Methods) asks for "stream management planning" with a clear focus on addressing environmental and recreational needs.

a) Use compiled information to generate a list of assessment locations – the consultants will use the information compiled in Task two to generate a preliminary list of assessment locations for stream surveys, approximately 15 locations per sub-basin. The preliminary list will be delivered to the basin sub-coordinators for internal review and outreach with landowners to assess their willingness to allow access for field surveys. Feedback from the sub-basin coordinators and landowners will be used to adjust the list of assessment locations. The revised list will be shared with the broader stakeholder group, to allow for additional input regarding the assessment locations. The list will also include preliminary recommendations for the field survey methods (e.g. R2Cross, WARSS, PFC, etc.) planned for each assessment location.
b) Geomorphic and riparian inventories on selected priority reaches – the consultants will perform geomorphic and riparian condition assessments for priority reaches as directed by the stakeholder groups and permitted by the budget. The assessments will characterize geomorphic and riparian conditions. In addition, the consultant will work with the relevant stakeholder groups to document the likely cause of impairment on each reach, if applicable, as a starting point for investigating potential demonstration projects in subsequent phases. The consultant will provide map-based results of the inventories completed on priority reaches for use in stakeholder meetings.
c) Identify projected future hydrologic conditions (two scenarios) - this may include re-sequenced historical hydrology to represent longer-term drought conditions or application of climate change projections adopted by CWCB for use in the CWP.
d) Revise StateCU and StateMod models as required to represent the selected future conditions for Phase I, II, and III sub-basins, updated through 2018 water year.
e) Qualitative and quantitative flow recommendations – the consultants will provide recommendations to the stakeholder groups for the appropriate assessment methods to use for developing flow recommendations. Flow assessment methods are developed to address various goals, and each method has strengths and weaknesses. The current conditions and long-term goals associated with each priority reach should be considered before a flow assessment method is selected. The consultant will solicit feedback and recommendations from environmental groups currently working in the basin, including Trout Unlimited, High Country Conservation Advocates, and the CWCB In-Stream Flow Program, to help select appropriate flow methods. An appropriate assessment method will be used to create recommended flow ranges for each priority reach. This subtask requires significant field surveys to gather the data, including stream cross-sections, required for the recommended flow assessment methods.
f) Prepare general options for demonstration projects – current flow and water management practices will be evaluated alongside the flow recommendations and potential causes of impairment to identify general options and preliminary recommendations for projects to consider in subsequent phases. Potential projects may include permanent new infrastructure or infrastructure improvements; temporary, voluntary, or compensated changes to current irrigation uses during below average runoff years; and other options. Potential demonstration project options will be identified for specific reaches considering the identified impairment and the assessment of existing water use practices.

Deliverables:

The consultants will prepare a comprehensive report summarizing the results of Task 2 and Task 3 and provide recommendations for subsequent phases of the project, including demonstration project options for specific impaired reaches. This report will include the future conditions StateCU and StateMod models, as well as modeling output in the form of user-friendly graphics, tables, and GIS maps, which include consumptive shortages, instream flow shortages, dry-up locations, etc.

TASK 4 – Identify a range of options for improved water use efficiency and other watershed best management practices (Phase II sub-basins).

Description of Task

Working with stakeholders, UGRWCD will compile all potential projects, practices or improvements that were identified during the inventory and assessment process for the Phase I sub-basins, resulting in a comprehensive list of options for each sub-basin to use in developing their multi-objective watershed management plans. For each priority issue, we plan to identify a range of options to address the issue. Stakeholder input, especially from landowners and water rights owners, will be used to select the preferred option to address the issues.

Method/Procedure

The following steps will be taken to move the planning process forward:

a) Coordinators will present results of Task 2 and 3 inventory and assessments in a series of appropriate stakeholder forums to develop alternatives to address water shortages and other land management issues, considering historic, current, and potential future hydrology, for each Phase I sub-basin. This will result in a long-list of options to then assess further for feasibility.
b) The watershed team will create a short list of options to be further vetted by key stakeholders.
c) Conduct scenario modeling on short list options and present results to stakeholders.

Deliverables

The results of this process will be a stakeholder driven set of options to improve watershed health in each Phase I sub-basin. A final options document will be prepared for use in sub-basin planning, Task 6. As with Tasks 2 and 3, information will be presented in user-friendly media formats for use in stakeholder engagement activities.

TASK 5 – Implement demonstration projects to test water use efficiencies or other watershed best management practices in each Phase I sub-basin.

Description of Task

Demonstration projects identified during Tasks 3 and 4 and deemed viable by assessment results and supported by water rights owners, will be implemented. These multi-objective projects will be designed and implemented to demonstrate water use efficiencies, watershed best management practices, and voluntary, temporary, and/or alternative operations to improve infrastructure and riparian health. Projects might include ditch repair, stream channel reconfiguration, wetland enhancements, coordinated irrigation, or other conservation practices, depending on the identified need. These sites will be used to educate stakeholders from all sub-basins.

Method/Procedure

a) At least one demonstration project per Phase I sub-basin will be selected under current funding (by December 2018).
b) Projects will be scoped and designed by appropriate technical professionals who can provide detailed drawings and cost estimates that meet all federal and state permitting requirements.
c) Projects will be constructed by a contractor who is fully insured and bonded.

Deliverables

Deliverables will include submittal of two hard copies of design report and drawings as well as an electronic copy, with maps delivered in AutoCAD format, if appropriate. For each project, a report will detail construction plans or project activities and cost estimates.

TASK 6 – Prepare Phase I Sub-Basin Adaptive Watershed Management Plans

Description of Task

This task is the culmination of our planning efforts for Phase I sub-basins, resulting in comprehensive sub-basin plans that take into consideration short term needs as well as long-term projections. Planning for an uncertain future requires adaptive management. As the CWP notes in Chapter 6.1, the first stage in an adaptive management plan is to begin with 'no-regret projects and processes' that will make sense no matter what the future brings. Stage 2 plans will include projects and processes that address emerging issues unique to each sub-basin and take new evidence about water supply and demand into account (more long-term). By then, planners should have some sense of which long term scenario for supply and demand is most likely to occur. Stage 3 planning would then address projects and processes that meet both local needs and local adaptation to statewide needs.

Adaptive watershed management processes are complex and cover a wide range of interests. Bringing people together to discuss tough issues requires a facilitated process that transforms perspectives across the board. This requires client-centric facilitated coaching where targeted outcomes and suitability of results are developed by the stakeholders themselves, rather than driven by the facilitator, who is primarily there to guide the process not the content. In this type of multi-stakeholder milieu learning is transformative, creating new paradigms, beliefs and values held by the group or groups, and resulting plans target multi-level objectives identified by the group. It is imperative that the facilitators are relatively neutral entities that all stakeholders accept and trust.

Method Procedure

UGRWCD will hire a third-party facilitator to guide the planning process. The facilitator and sub-basin coordinators will oversee the following tasks, with technical support from AEC and WWG when needed:

a) Work with stakeholders to identify values, goals and objectives to improve watershed health in each sub-basin. If necessary, form sub-basin user committees to focus on specific topics or areas of shared interest.
b) Using the options document developed in Task 4, prioritize key projects for planning and implementation that meet the stated goals and objectives.
c) Cultivate regional partnerships to coordinate and streamline watershed protection efforts.
d) Working with consultants, partners, and stakeholders, scope each project and prepare a conceptual plan and cost/benefit analysis for high priority activities.
e) Prepare a resource development strategy for long-term financing of plan components.

Deliverables

Three sub-basin plans with technical appendices attached. These plans will be professionally produced and available in print and electronic media.

TASK 7 – Project Coordination and Administration

Description of Task

This task involves the coordination of project activities by UGRWCD and sub-basin coordinator staff. It includes fulfillment of reporting requirements and efficient and timely financial reports. The success of the project will be evaluated using the monitoring and evaluation framework found in Attachment B.

Method/Procedure

1) Completion of CWCB contracting.
2) Consultant contracting and scheduling.
3) Stakeholder outreach coordination and scheduling.
4) Project reports submitted semi-annually and one final project report.
5) Prepare annual reimbursement requests (or as needed).
6) Collect and make available all data, summaries, assessment results and project reports to the general public through establishment of a repository at the UGRWCD office and on UGRWCD website.

Deliverables

Deliverables include: timely and effective reports and financials, which include five semi-annual reports and one final report (by August 2021). Reimbursement requests will be made annually, or more frequently during times of high expenditures, if necessary. Information repository will be maintained by UGRWCD.

REPORTING AND FINAL DELIVERABLE

Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the statement of work including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings and engineering reports/designs.

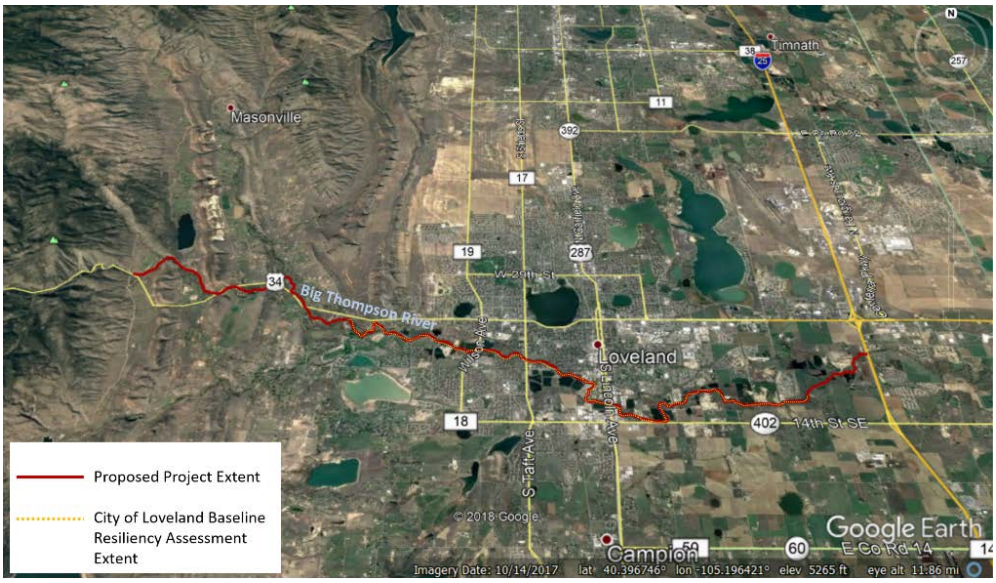
Attachement A: Proposal Budget and Timeline

TASKS AND SUBTASKS	Funding from March 2019 through August 2021											TOTAL	CWCB	UGRWCD	TU (in kind)	HCCA (in kind)
	19 Q1	19 Q2	19 Q3	19 Q4	20 Q1	20 Q2	20 Q3	20 Q4	21 Q1	21 Q2	21 Q3					
Task 1: Stakeholder Outreach - Initial Needs/Issues assessment - costs for this task do not include sub-basin coordinator time, which occurs under Task 7																
Needs Assessment with Stakeholders, including formation of Sub-basin committees to address specific issues (e.g. recreation, agriculture, etc.). Costs under this task include consultant time, meeting costs, outreach materials, etc. Coordinator time is covered under Task 8.																
Phase I Basins: Ohio, East, Lake Fork (meeting and outreach costs)	■	■	■	■	■	■	■	■	■	■	■	$2,000	$0	$2,000		
Phase 2 Basins: Cebolla, Main Stem, Taylor (meeting and outreach costs)	■	■	■	■	■	■	■	■	■	■	■	$10,950	$0	$10,950		
Alpine Environmental Consultants (AEC): assist with issues mapping and other technical support, attendance at committee meetings	■	■	■	■	■	■	■	■	■	■	■	$28,660	$28,660	$0		
Wilson Water Group (WWG): provide technical support, attendance at committee meetings.	■	■	■	■	■	■	■	■	■	■	■	$10,800	$10,800	$0		
											SUBTOTAL	**$52,410**	**$39,460**	**$12,950**	**$0**	**$0**
Task 2: Inventory and Identification of Info Gaps (Phase 2 sub-basins) - costs for this task do not include sub-basin coordinator time, which occurs under Task 7																
WWG: multi-year supply trends; current water rights; irrigation withdrawals, headgates and diversions; municipal and industrial uses																
WWG Consultant time	■	■	■	■								$15,600	$15,600	$0		
AEC consultant time: document environmental and recreational water uses, water quality issues, and best management practices; conduct aerial imagery review; produce outreach products on results. Cost includes time to assist with issues mapping and other technical outreach support for Task 1.																
AEC Consultant time	■	■	■	■	■	■						$36,440	$36,440	$0		
											SUBTOTAL	**$52,040**	**$52,040**	**$0**	**$0**	**$0**
Task 3: Needs Assessment (Phase 2 sub-basins plus modelling for Tomichi and Cotchetopa) - costs for this task do not include sub-basin coordinator time, which occurs under Task 7																
WWG: Hydrologic Needs Assessment; Update StateMod (ALL sub-basins), historic calibration and baseline water allocation model (ALL sub-basins); Revise StateCU and StateMod models as required to represent future conditions through 2018 (ALL sub-basins); preparing technical reports and fact sheets.																
WWG Consultant time	■	■	■	■								$52,500	$52,500	$0		
AEC: review model outputs and ISF analysis; generate list of assessment locations and access needs; geomorphic and riparian inventories; Montana methods analysis; create environmental and flow goals for priority reaches; prepare reports and fact sheets																
AEC Consultant time			■	■	■	■	■	■				$85,000	$47,500	$37,500		
											SUBTOTAL	**$137,500**	**$100,000**	**$37,500**	**$0**	**$0**
Task 4. Options Identified for Phase I Sub-basins - costs for this task do not include sub-basin coordinator time, which occurs under Task 7																
Create long-list of options to address issues identified in Task 1; apply screening criteria to create shortlist of options; perform detailed modeling analysis of shortlist to characterize benefits; develop options document for each sub-basin summarizing all options, screening process and characterization;																
Phase I Basins: Ohio, East, Lake Fork (meeting and outreach costs)	■	■	■	■	■							$3,000	$0	$3,000		
AEC Consultant time to provide technical support, assist with final document			■	■	■							$13,500	$13,500	$0		
WWG Consultant time - Modeling support for future options	■	■	■									$31,800	$31,800	$0		
Options document preparation and production (UGRWCD SBCs/ consultant for layout)					■	■						$5,000	$0	$5,000		
											SUBTOTAL	**$53,300**	**$45,300**	**$8,000**	**$0**	**$0**

TASKS AND SUBTASKS	Funding from March 2019 through August 2021											TOTAL	CWCB	UGRWCD	TU (in kind)	HCCA (in kind)
	19 Q1	19 Q2	19 Q3	19 Q4	20 Q1	20 Q2	20 Q3	20 Q4	21 Q1	21 Q2	21 Q3					
Task 5: Demonstration Projects - costs for this task do not include sub-basin coordinator time, which occurs under Task 7																
Using assessment results, modeling, and stakeholder inputs, identify three demo projects for Phase I (one each per sub-basin). For each project, conduct scoping and design. Implement three projects for Phase I sub-basins.																
Scoping and design for potential demonstration projects (Phase I sub-basins one each) - consultants	■	■	■	■								$20,000	$0	$20,000		
Implement demonstration projects (Ohio, East, Lake Fork)					■	■	■					$80,000	$0	$80,000		
SUBTOTAL												**$100,000**	**$0**	**$100,000**	**$0**	**$0**
Task 6. Create Sub-basin watershed plans for Phase I sub-basins (to be chapters in Basin Wide Plan) - costs for this task do not include sub-basin coordinator time, which occurs under Task 7																
Using the options document in Task 4, prioritize projects based on values, goals, and objectives with stakeholders for Phase I sub-basins; feasibility analysis for watershed scale projects prioritized by stakeholders;																
AEC consultant time- technical support and document preparation				■	■	■	■	■				$24,900	$24,900	$0		
WWG Consultant time - modeling support			■	■	■	■						$15,000	$15,000	$0		
Facilitation consultant				■	■	■	■	■				$25,000	$14,800	$10,200		
Meeting costs (hospitality, marketing, etc.)			■	■	■	■	■	■				$4,000	$0	$4,000		
Preparation of plan documents (Phase 1 Sub-basins) - layout and production									■	■		$5,000	$0	$5,000		
SUBTOTAL												**$73,900**	**$54,700**	**$19,200**	**$0**	**$0**
Task 7: Project Coordination and Administration																
Project coordination including sub-basin coordinator time; consultant contracting; annual and final reporting; project accounting and reimbursements; grant research and preparation. Coordinator time includes hourly pay plus fringe.																
Bev Richards, Project Coordinator (600 hours @ $25/hr) (in kind)	■	■	■	■	■	■	■	■	■	■	■	$15,000	$0	$15,000		
Camille Richard - Project Co-coordinator, reporting and grant writing; GIS work, Lake Fork and Cebolla Coordination (1500 hr@$45/hr)	■	■	■	■	■	■	■	■	■	■	■	$67,500	$8,500	$59,000		
Julie Nania and assistant coordinator - East, Taylor and Gunnison Coordination (970 hrs @ $45/hr)	■	■	■	■	■	■	■	■	■	■	■	$43,650	$0	$30,150		$13,500
Jesse Kruthaupt - Ohio, Taylor, Gunnison Coordination (510 total hours @ $45/hour)	■	■	■	■	■	■	■	■	■	■	■	$22,950	$0	$0	$22,950	
Cebolla Assistant Coordinator (240 hrs @ $30/hour)	■	■	■	■	■	■	■	■	■	■	■	$7,200	$0	$7,200		
Coordinator travel (meetings, stakeholder outreach, conferences, etc.)	■	■	■	■	■	■	■	■	■	■	■	$9,000	$0	$9,000		
SUBTOTAL												**$165,300**	**$8,500**	**$120,350**	**$22,950**	**$13,500**
TOTAL												**$634,450**	**$300,000**	**$298,000**	**$22,950**	**$13,500**

2018 CWCB Grant Application
Big Thompson River Envisioning Project

Project Title: Big Thompson River Envisioning Project
Project Location:



Grant Type: Stream Management Plan Grant
Grant Request Amount: $146,440
Cash Match Funding: $80,000
In-kind Match Funding: $66,440
Project Sponsor: Big Thompson Watershed Coalition
Contact: Shayna Jones, BTWC Director; Shayna.jones@bigthompson.co;; (970) 800-1126

Brief description of the project:

The Big Thompson watershed is an important resource locally for the Loveland community, for the many Front Range communities who obtain their water supply from the Big Thompson River, and the millions that visit the corridor each year on their way to Rocky Mountain National Park. The Big Thompson River supports recreational trout fishing, wildlife and the local tourist economy, as well as municipal, agricultural and industrial water uses. Given the wide variety of uses, and predicted changes to land use and hydrology, a plan that balances river health with waters users' needs would ensure that the communities and wildlife that rely on the Big Thompson River could continue to do into the future.

The BTWC, along with an Advisory Committee composed of diverse water interests, will lead the development of a Stream Management Plan along approximately 15 miles of river corridor. The overall goal of the plan is to engage citizens and stakeholders to create a shared vision for improving the Big Thompson River by identifying strategies and action plans that respect property and water rights, address water user needs, and enhance environmental conditions and recreational opportunities. Key project objectives and priorities include stakeholder and community engagement and conducting a diverse set of assessments for the project area (hydrology characterization, river health, ecosystem services, infrastructure, future growth and development, etc). Collectively, this diverse set of assessments will drive the characterization of the river's capacity to deliver desired goods and services to the community and serve as the foundation for the Advisory Committee to develop a prioritized implementation plan for the next phase of work on the Big Thompson River.

2018 CWCB Grant Application
Big Thompson River Envisioning Project

Qualifications

1. *Identify the lead project sponsor and describe the other stakeholders' level of participation and involvement.*

Big Thompson Watershed Coalition (BTWC) will serve as the lead project sponsor and will be involved in project management for each of the tasks further described in the Scope of Work. The BTWC Board of Directors currently represents local government, private property owners, local businesses and other non-profit groups. Stakeholders will be involved in two key ways: 1) An Advisory Committee will guide and support the project, provide technical expertise, inform project goals and priorities, and exercise joint governance over project decisions. Advisory Committee members will likely include City of Loveland Water and Stormwater Departments, Larimer County, Northern Water, Colorado Parks and Wildlife, representatives from ditch companies, Rocky Mountain Flycasters (a chapter of Trout Unlimited), Big Thompson Watershed Forum, and riparian landowners and business owners within the identified project area. Initial discussions have occurred with most of these stakeholders as part of the BTWC and River Network grant project scoping efforts in Summer 2018. The group expects to finalize the Advisory Committee representation as one of its first tasks, if the proposed project is awarded; 2) The Advisory Committee will also develop a Stakeholder Engagement Plan that will outline mechanisms for input and feedback by a wider array of stakeholders including local environmental groups, ditch companies, recreation groups, and area residents. This stakeholder engagement work will help the project team identify and prioritize ecological values that could be protected or enhanced, needs related to irrigation diversions and other structures in the river, and needs of floodplain management and land and recreation planners. This information will then be used in the prioritization of risks, development of project ideas and implementation actions. The BTWC will also develop and implement an on-going Community Engagement plan as part of the proposed project, which will help further engage the public and build awareness of how the Big Thompson Watershed is operated, use recently completed BTWC projects such as the Rist Goss River and Ditch improvement project to illustrate how multi-purpose projects can benefit multiple water users and uses, and highlight actions the community can support that will improve or protect the Big Thompson River while also honoring local water users

2. *Specify in-kind services and cash contributions (match) amount for the proposed activities. See section B.2 of the grant program guidance to determine match funding requirements. Discuss whether other funding sources are secured or pending.*

Project partners are contributing significant in-kind services and cash contributions, as shown in the table below. More information about these contributions can be found in the *Budget Table and Schedule* section in the Scope of Work Attachment.

Type of funding	Source	Amount	Status
In-Kind Services	Big Thompson Watershed Forum	$49,800	Secured
In-Kind Services	Northern Water	$16,640	Secured
Cash Contributions	South Platte Basin Roundtable Water Supply Reserve Fund Grant	$40,000	Requested
Cash contributions	New Belgium Water Conservation and Restoration Grant	$5,000	Requested
Cash contributions	City of Loveland – Stormwater Dept	$7,500	Secured
Cash contributions	City of Loveland – Water Dept	$7,500	Secured
Cash contributions	Larimer County	$5,000	Requested

Type of funding	Source	Amount	Status
Cash Contributions	Northern Water	$5,000	Secured
Cash Contributions	City of Greeley	$10,000	Secured
TOTAL		**$146,440**	

Water quality is an important factor in overall river health for the proposed project area, and is important to local stakeholders. To assist in this area, the Big Thompson Watershed Form has agreed to provide in-kind funds up to $50,000 which is the value of their water quality data collection efforts at four stations within the project area. Additionally, project partner Northern Water will contribute in-kind funds to perform tasks related to hydrology characterization and analysis of point flows.

Organizational Capability

1. *What is the applicant organization's history of accomplishments in the watershed? Provide several past project or planning examples. List partner organizations and agencies with whom applicant worked to implement past projects or planning efforts.*

The Big Thompson Watershed Coalition formed in the aftermath of the 2013 flood and has been involved in planning, managing and implementing river restoration activities since 2014. Since gaining non-profit status in 2016, we've successfully secured and managed over $10 million in flood recovery planning and implementation funds, working collaboratively with a diverse set of partners. Over the last four years, the BTWC led or co-led over 15 river improvements projects, of which 11 have been successfully implemented and completed, and 4 of which will be constructed by June 2019. This has produced multi-objective improvements along approximately 6 miles of critical areas of the Big Thompson River and key tributaries, and involved over 150 private properties. Of its completed projects, BTWC worked directly with Larimer County Engineering and Department of Natural Resources on five projects, City of Loveland on two projects, and CDOT, Colorado Parks and Wildlife, and a broad coalition of partners on seven river projects along the US34 river and road corridor.

The BTWC currently has two large river projects under design that will go to construction in January 2019. One project involves extensive coordination with multiple City of Loveland departments and a dozen private property owners to enhance multiple long-term ecological and social benefits along approximately one mile of river. The second project involves nearly two miles of river improvements that involves a local business and gravel pit company (Loveland Ready Mix) and the City of Loveland Open Lands Department. The project also includes a ditch improvement component in which a channel spanning diversion will be removed and replaced with a series of in-stream rock structures that provide continued water deliveries to water users, lessens the maintenance burden associated with the diversion, and significantly improves river function in terms of fish passage and sediment conveyance and overall aesthetics.

The BTWC has been involved in several master planning projects and several conceptual design planning projects. The BTWC led the 2015 Big Thompson River Restoration Master Plan, which guided flood recovery efforts. We also served as an Advisory Committee member in the City of Loveland's 2017 River Corridor Master Plan. These two master plans are the building blocks for our proposed Big Thompson River Envisioning Project. From 2015 to 2017, the BTWC led two conceptual design planning projects that produced initial designs for approximately 9 miles of Big

Thompson River. The BTWC successfully leveraged these conceptual designs to secure implementation funds for approximately 5 of the 9 covered river miles. Finally, BTWC staff has served in an advisory capacity to the Larimer County Hazard Mitigation Plan and the Larimer County Mountain Resilience Plan.

2. *What level of staffing will be directed toward the implementation of the proposed project/planning effort? Discuss the number of staff and amount of time dedicated for the project. Will volunteers be utilized, and if so, how? Include brief resumes for each member of the active project team.*

BTWC will involve both of its staff members in this project, as well as hiring other expert consultants for needed tasks. Specifically, BTWC has committed 20% of its Director, Shayna Jones, for the entirety of the project. Shayna has over 10 years of experience managing natural resource and sustainability projects, leading stakeholder groups, and guiding decision-making processes among diverse groups. She has served as the BTWC Director since 2015, and has overseen all aspects of organizational management, fundraising, stakeholder coordination, project administration and implementation. BTWC is currently hiring a Project Manager position and it is anticipated that this staff member will spend up to ~100 hours over the life of the project.

BTWC Board President David Jessup will help serve as a liaison to agricultural and irrigation interests. Mr. Jessup is co-owner of a large guest ranch along the Big Thompson River where he raises grass-fed beef. He is a board member of several Northern Colorado non-profit organizations concerned with water quality and education.

Though specific commitments have not yet been obtained, many other stakeholders (listed in prior section) have indicated a willingness to dedicate expertise to this project as well, through their roles as Advisory Committee members.

3. *Demonstrate that the project budget and schedule are realistic. Please use the budget/timeline spreadsheet attached to the application. Please note that the start date will take place after funding awards are announced and grants are contracted.*

Our project framework and methodology are largely based on a similar effort completed by the City of Loveland in 2017 in their River Corridor Master Plan, and the St. Vrain and Lefthand Water Conservancy District Stream Management Plan, which is currently underway. Additionally, River Network, who has worked with numerous coalitions in Colorado to develop scopes of work and budgets for SMPs, assisted BTWC with developing the scope of work and budget. BTWC is confident that we have developed a realistic budget and schedule to complete the tasks outlined in the Scope of Work, and to meet the overall goals of the project.

Proposal Effectiveness

1. *What information is the project sponsor using to develop the proposed plan or project? Include any relevant information regarding existing watershed plans, stream management plans, geomorphic assessments, flood studies, fire protection plans, riparian conditions assessments, aquatic/terrestrial habitat conditions, wildlife studies, and/or river restoration reports.*

Multiple groups have extensively studied the Big Thompson Watershed over the last 10-15. Studies from CSU, Big Thompson Watershed Forum, CWCB, CPW, South Platte Basin Roundtable, City of

Loveland, Larimer County, and the most recent flood and river corridor master plans all provide a foundation for the proposed project, and will allow the project to maximize available funding.

Following the 2013 floods, multiple planning and flood recovery implementation projects helped enhance floodplain capacity and habitat and repair key infrastructure such as roads, bridges, crossings, and diversions within the study area. In the study area, two Master Plans were created following the 2013 floods. This included the Big Thompson River Restoration Master Plan, which covered 70 plus river miles from Olympus Dam to the confluence with the South Platte. This plan provided a high level assessment and guide for flood recovery projects. Secondly, the City of Loveland Big Thompson River Corridor Master Plan covered 9 miles of river within the City's boundaries in greater detail. While both plans include assessment of certain river function and land use variables, neither assessed flow needs for a variety of agricultural, municipal, environmental and recreational needs. The proposed Big Thompson River Envisioning Project would build on these two plans, integrate data collected and assessment conducted under those plans, create a more comprehensive baseline assessment of river health and water user needs, evaluate future impacts due to growth and climate change, and build a more detailed implementation plan for high priority multi-purpose projects throughout the project area.

A more comprehensive list of studies relevant to the Big Thompson River can be found in Attachment B. The proposed Big Thompson River Envisioning project will build on these studies to further the proposed project's objectives. The project team will address information gaps necessary to further the project's objectives to the greatest extent possible.

2. *Discuss the multiple objective aspects of the project and how they relate to each other. Describe similar activities in the watershed and how this project or plan complements but does not duplicate those activities. Multiple objectives may include (but are not limited to) channel stabilization, riparian re-vegetation, habitat improvement, recreation opportunity enhancement, natural hazard reduction, flood mitigation, water supply delivery improvement, fish migration improvement, ephemeral/intermittent channel stabilization, and upland erosion mitigation.*

The Big Thompson River Envisioning Project goal is to engage diverse stakeholders and the public to create a shared vision, and identify voluntary actions that meet a variety of water user needs and protect and improve the health of the Big Thompson river corridor. The identified section is from the canyon mouth to I-25. See Attachment A for a map of the project area. To achieve this goal, the project has several inter-related objectives that are oriented toward assessing and developing actions that will benefit multiple aspects of river health and water user needs. These include:

1. Engage citizens and stakeholders in a process to identify common values and goals related to various water uses, including agriculture, municipal, recreation, fisheries, and riparian habitat.
2. Assess river function within the project area, currently identified as the reach between the mouth of the Big Thompson Canyon to I-25, by analyzing existing information and new data as needed, to identify key issues and their locations and causes.
3. Assess impacts of future population growth, development, and climate and weather changes on river health and user needs and identify opportunities to mitigate these impacts.
4. Identify and prioritize voluntary, multi-purpose projects and actions that will meet collective needs and values and protect or enhance the Big Thompson River corridor.

The proposed project will assess the functional health of the river corridor, which is inherently multi-objective in nature. The project team will conduct a baseline assessment that includes variables such as flow regime, sediment regime, water quality, network connectivity, floodplain hydrology, riparian vegetation, fluvial geomorphology, structural complexity and aquatic biota. Additionally, the project team will assess the capacity of each river reach within the project area to provide desired benefits to the local community, which includes a variety of sectors and ecosystem services such as irrigation, drinking water, flood attenuation, aesthetic values, and recreational uses. Additional project objectives and focuses include assessment of key irrigation and other infrastructure along the river corridor, and assessment of future impacts to river health and water user needs from growth and climate change. Collectively, this diverse set of assessments will drive the characterization of the river's capacity to deliver desired goods and services to the community and serve as the foundation for the Advisory Committee to develop a prioritized implementation plan for the next phase of work on the Big Thompson River.

The proposed project builds on many past planning efforts, but most notably the City of Loveland's recent River Corridor Master Plan. The project will expand assessment of variables to areas upstream of the City's planning area that contain a diverse set of water user and community needs, and downstream into areas recently added to the City's growth management area. For the 9 miles previously studied under the City's Master Plan, the proposed project will incorporate data collected and assessment conducted into a more comprehensive river health and water user need assessment. Because the City of Loveland's effort did not assess flow needs for a variety of agricultural, municipal, environmental and recreational needs, this project will conduct those assessments within the previously studied reaches. The proposed project will also expand on conceptual plans for implementation priorities and deepen broad stakeholder buy-in for implementation of these projects and actions.

3. *Describe the proposed monitoring or implementation plan. How will the project or plan measure success of its objectives?*

Ultimately, project success will be measured on the Advisory Committee's ability to implement projects or management strategies that protect or improve the health of the Big Thompson River while also meeting water users' needs. The BTWC has a good track record of moving from plans to implementation. The BTWC completed the Big Thompson River Restoration Master Plan in 2015, and since that time has secured and completed more than 10 projects that required over $10 million in implementation funds.

On a short term basis, the project will measure its success by:

- Active participation by a range of stakeholders and buy-in to proceed through all tasks
- Completion of all deliverables in the scope of work on time and on budget
- Creation of a prioritized action plan for implementation, including project description, timeline, budget and lead agency/group

Big Thompson River Envisioning Project
Scope of Work

Grantee: Big Thompson Watershed Coalition
Primary Contact: Shayna Jones, BTWC Director; shayna.jones@bigthompson.co;
Address: PO Box 1923, Loveland, CO 80539
Phone: 970-800-1126
Project Name: Big Thompson River Envisioning Project
Grant Amount: $146,440

Introduction and Background

The Big Thompson watershed is an important resource locally for the Loveland community, for the many Front Range communities who obtain their water supply from the Big Thompson River, and the millions that visit the corridor each year on their way to Rocky Mountain National Park. The Big Thompson River supports recreational trout fishing, wildlife and the local tourist economy, as well as municipal, agricultural and industrial water uses. Given the wide variety of uses of the river corridor and predicted changes to land use and hydrology, a plan that balances river health with waters users' needs would ensure that the communities and wildlife that rely on the Big Thompson River could continue to do so well into the future.

The BTWC, along with an Advisory Committee composed of diverse interests, will lead the development of a Stream Management Plan along approximately 15 miles of river corridor. The BTWC Board of Directors currently represents local government, private property owners, local businesses and other non-profit groups. The Big Thompson Watershed Coalition formed in the aftermath of the 2013 flood and has been involved in planning, managing and implementing river restoration activities since 2014. Over the last four years, the BTWC led or co-led over 15 river improvements projects, of which 11 have been successfully implemented and completed, and 4 of which will be constructed by June 2019. This has produced multi-objective improvements along approximately 6 miles of critical areas of the Big Thompson River and key tributaries, and involved over 150 private properties.

Project Goal

Engage citizens and stakeholders to create a shared vision for improving the Big Thompson River by identifying strategies and action plans that respect property and water rights, address water user needs, and enhance environmental conditions and recreational opportunities.

Objectives

1. Engage citizens and stakeholders in a process to identify common values and goals related to various water uses, including agriculture, municipal, recreation, fisheries, and riparian habitat.
2. Assess river function within the project area, currently identified as the reach between the mouth of the Big Thompson Canyon to I-25, by analyzing existing information and new data as needed, to identify key issues and their locations and causes.

3. Assess impacts of future population growth, development, and climate and weather changes on river health and user needs and identify opportunities to mitigate these impacts.
4. Identify and prioritize voluntary, multi-purpose projects and actions that will meet collective needs and values and protect or enhance the Big Thompson River corridor.

Tasks

1. Community Outreach and Stakeholder Engagement

This task will create an Advisory Committee to guide the project, develop and implement a strategy for involving stakeholders in the project, use feedback from the Advisory Committee to refine the objectives and scope or work, establish an on-going education program for community members, and develop a web-based resource to house watershed data and assessment information and other relevant educational materials.

Methods/Procedures

Sub-task 1.1 – Convene an **Advisory Committee** to guide the project, provide technical expertise, and inform project goals and priorities. Advisory Committee members will include major water rights owners/users, riparian land owners and business owners, environmental interest groups, recreational user groups, county and municipal government, and land development interests. The Advisory Committee size will be considered and managed to ensure efficient governance and decision-making.

Sub-task 1.2 – **Develop and Implement a Stakeholder Engagement Plan** that identifies tangible participation goals targeting consumptive and non-consumptive stakeholders. Specific elements of this plan will include, but not be limited to:

- Develop list of the stakeholders who should be included
- Develop goals for stakeholder engagement, including expectations and outcomes
- Create schedule and objectives for each meeting; anticipate 8 meetings
- Identify and prioritize ecological values that could be protected or enhanced, needs related to irrigation diversions and other structures in the river, and needs of floodplain management (including enhancement, restoration and maintenance) and land and recreation planners

Sub-task 1.3 – Based upon Advisory Committee and stakeholder feedback, the BTWC Project Coordinator will **refine the project's objectives and scope of work** to ensure project tasks are focused on collaboratively agreed-upon outcomes.

Sub-task 1.4 – The BTWC staff Project Coordinator, with help from an Engagement Consultant, will develop a **Community Education Program** to keep local residents informed on the project's progress and outcomes. The Community Education Program will: outline activities for increasing community understanding of how the water system of the Big Thompson River watershed is operated, use recently completed BTWC projects such as the Rist Goss River and Ditch improvement project to illustrate how multi-purpose projects can benefit multiple water

users and uses, and highlight actions the community can support that will improve or protect the Big Thompson River while also honoring local water users. Specific elements of this plan will include, but not be limited to:

- Timeline for community engagement, with topics to be covered at key points
- Needed supporting documentation or educational material, and
- Strategies for soliciting public comment/feedback and using it to inform the project

The Advisory Committee and relevant stakeholders (local watershed groups, ditch companies, recreation groups, and others) will help develop the community engagement plan, and BTWC staff and board members will implement its recommendations during the project timeline. We plan to host up to three Community Engagement events that will aim to meet the objectives of the Plan.

Sub-task 1.5 – The BTWC Project Coordinator will synthesize the literature review in Task 3.1 to ensure that all relevant data is accessible. BTWC will work with a contractor to create **online resources** that are publically accessible on the BTWC's website, such as links to existing data, results from new assessments, and education resources and information on river health and water use.

Deliverables

- Minutes from at least quarterly Advisory Committee meetings throughout the project term
- Stakeholder Engagement Strategy and reports on its effectiveness
- Revised Project Scope of Work that incorporates stakeholder feedback
- Community Education Program, including at least three community education events, and reports on its effectiveness
- Community education materials developed to help communicate river function assessments, water user needs assessments, current and future potential multi-purpose projects and other topics as needed
- BTWC online resource that contains technical and community educational resources

2. Current and Projected Hydrology Characterization

The purpose of this task is to summarize how water is currently stored, diverted, consumed, and returned, and to characterize current and potential future point flows in the study area. This task will be accomplished using hydrologic modeling tools developed by CWCB. The South Platte Decision Support System (SPDSS) is an integrated system of hydrologic data, water allocation modeling, and crop consumptive use modeling often used for developing detailed and reliable estimates of water availability under a wide range of potential future hydrologic conditions and a broad range of current and future water management scenarios.

Methods/Procedures

Sub-task 2.1 – Using the SPDSS StateMod surface water modeling framework, develop **estimated daily point flows** for the study area at major tributaries, diversion points, and in-stream flow reaches. The SPDSS includes river flow data for historical conditions (1950 through

2012), as well as natural conditions (no diversions, imports, or releases) and existing conditions (current diversions), and will therefore allow for a comprehensive understanding of river flows during wet, dry, and average conditions.

Sub-task 2.2 – Working from the results of sub-task 2.1, project **future changes in hydrology** and water availability patterns as a result of the five planning scenarios developed by CWCB (refer to CWCB's scenario planning fact sheet for more information: http://cwcb.state.co.us/water-management/water-supply-planning/Documents/SWSI2016/FactSheets/3_PlanningScen.pdf). These planning scenarios include factors such as population growth, land-use change, changes in water demands, regulatory scenarios, and social considerations, and some of the planning scenarios use climate-adjusted hydrology. Integrate the Statewide Water Supply Initiative (SWSI) updated hydrologic modeling outputs that provide time-series data for all the planning scenarios for wet, dry, and normal water years.

As part of this task, assess potential future demand increases for municipal, agricultural, and recreational water users by contacting water providers and water users, reviewing existing information, and considering stakeholder input gathered as part of sub-task 1.2. Assess the extent to which these demand increases may impact point flows in the study area.

Deliverables

- Technical report summarizing hydrological characterization and modeling output. The report should include data tables and appropriate graphics summarizing estimated daily hydrology at tributaries, major diversions, and in-stream flow reaches under natural, existing, and projected future conditions, as well as graphics characterizing typical hydrographs under wet, average, and dry conditions at the same points, as appropriate.

3. River Health and Benefits Assessments

The purpose of this task is to assess existing ecological conditions of the study area within the Big Thompson River corridor, and to characterize the ability of the system to deliver desired ecosystem goods and services to the local community. This task will apply data and analyses compiled from Tasks 1.2, 1.5, and 2, as well as additional desktop analyses and field investigation as needed.

Methods/Procedures

Sub-task 3.1 – **Review existing information** and publicly available databases, and conduct literature reviews to form the basis for an assessment of ecological condition. At a minimum, the literature review should consider the documents identified in Attachment A.

Sub-task 3.2 – Evaluate the best available information and evidence to complete a baseline **assessment of ecological condition**. The assessment framework should consider existing frameworks such as the City of Loveland's River Corridor Master Plan and the Colorado Stream Health Assessment Framework.

Watershed-scale variables to be evaluated include flow regime, sediment regime, water quality, and network connectivity. Reach-scale variables include floodplain hydrology, riparian vegetation, fluvial geomorphology, structural complexity, and aquatic biota. For each reach identified in the Big Thompson Watershed Restoration Master Plan, assessment of these variables will be completed through thorough review of existing information, desktop analyses (e.g., GIS and aerial photography analysis, hydrological time-series evaluation, etc.), rapid field assessments, and/or intensive field investigations, as applicable. Field investigations will include water quality data collection and analysis performed by the Big Thompson Watershed Forum. The extent of the evaluations (desktop to intensive) will depend on the quality and quantity of existing data (reviewed in sub-task 3.1) for each variable at each reach (identified in the Big Thompson Watershed Restoration Master Plan).

As part of the ecological health assessment, identify the dominant stressors, causes of impairment, and constraints on ecological integrity within the study area. Describe the location and causes of key river health concerns and identify opportunities to protect well-functioning stream reaches.

Sub-task 3.3 – Conduct an assessment to evaluate the capacity of each reach within the study area to provide benefits to the local community. Using results of the Stakeholder Engagement Plan (sub-task 1.2), work with the Advisory Group and local community to characterize and prioritize the **ecosystem goods and services** that local communities derive from the study reaches of the Big Thompson River corridor.

Categories of ecosystem goods and services that may be included are: irrigation supplies, clean drinking water, flood attenuation, groundwater recharge, aesthetic values, recreational use, etc). This assessment will evaluate qualitative information (e.g., input from stakeholders and community, local perceptions, anecdotal evidence, etc.) and quantitative data (e.g., hydrologic time series, consumptive water use demands, proximity of infrastructure to floodplains, recreational use surveys, environmental results from Task 3.3, etc.) to characterize the relative demand for specific ecosystem goods and services on each reach in the project area.

Deliverables

- Technical report summarizing ecological health assessment methodologies and results, with narrative and quantitative rationale for all conclusions. Report will include companion maps and graphics, as applicable.
- Report summarizing the type, relative demand, and relative local priorities for ecosystem goods and services on reaches in the project area, including a map that identifies relevant features (existing or contemplated river access points, public use areas, known high-value recreational attributes, etc.).
- Report or technical memorandum integrating the results of the ecological health assessment and ecosystem goods and services assessment. This deliverable will illustrate the relationship between ecosystem health, environmental and other

stressors, and the ability of the system to deliver desired goods and services to the local community.

4. Irrigation and Other Infrastructure Assessment

In-river structures support water uses such as irrigation and industry that are important economic drivers in the study area, but thorough documentation about current water users' specific needs does not exist. This task will perform an **inventory of in-river infrastructure** to document local needs. This task will build on existing studies of some of the diversion infrastructure in the identified project area from existing fish passage/infrastructure studies.

Method/Procedure

BTWC Project Coordinator will work with a contractor to conduct site visits on a maximum of 10 river structures. The structures will be selected based on the relative size of current diversions, input from the Advisory Committee and water commissioners, and review of previously developed conceptual design and feasibility assessment for infrastructure improvements that were part of the previous Big Thompson River Fish Passage study. This information will be combined with water user input gained from Task 1.2 to ensure the ability of infrastructure to meet water user's needs is also considered. The contractor will work with the Project Coordinator to request permission to access private property. If permission is not granted, the structure will not be included in the inventory. The site visit will be a field inspection of the river headgate, diversion and ditch conditions to the measurement device. The site visit will inventory and assess:

- Type of control structure at the headgate
- Type of measurement device and level of functionality
- Overall structural integrity and diversion functionality
- Ability of the structure to divert a wide range of flows and meet water users' needs
- Apparent deficiencies that may negatively affect river function variables considered in Task 3
- Apparent deficiencies that may negatively affect recreational boating
- Feasibility of previously developed conceptual ideas for retrofits, if applicable

Deliverables

- Memo documenting the literature review of previous fish passage/infrastructure studies, and site visits, including maps and photographs of structures and findings from the field inspection. The contractor will provide their professional opinion about the likelihood of infrastructure improvement have a significant impact on diversion efficiency and/or river health to help with prioritization of recommendations.
- GIS layers of the infrastructure assessed

5. Future Conditions: Growth and Development

The purpose of this task is to assess how future infrastructure, land-use, water management and use, and water quality changes could impact river health variables and user needs within the project area.

Methods/Procedures

Sub-task 5.1 – Review existing planning documents and conduct interviews with appropriate planning department staff to determine **expected or projected** changes to infrastructure (e.g., new developments, removal or retrofitting of existing infrastructure), land use (e.g., agricultural or pasture lands, zoning, new development), water management (e.g., diversions, water user changes, water conservation efforts), water use (e.g., surface water and groundwater), and water quality (e.g., pollutant loads) within the project area in the next 15-20 years.

Documents to be reviewed include, but are not limited to, the South Platte Basin Implementation Plan, updated County floodplain maps, county comprehensive plan, recreation plans, subdivision plans, and future land use plans. Interviews with planning personnel will help to shed light on anticipated future changes that have not yet been documented, as well as potential ecosystem benefits from future changes that may not be explicitly stated.

Sub-task 5.2 – Use the conclusions discussed in sub-task 3.2, particularly identification of the existing stressors and current trajectories of each river health indicator, to qualitatively assess the ways in which the projected future changes discerned in sub-task 5.1 are expected to impact each of the river health variables and river user needs identified in sub-tasks 3.2 and 3.3. Perform a qualitative assessment of these impacts that characterizes **likely trajectories for river health indicators and stakeholder needs**, including identification of target areas that may be positively affected or challenged by likely future changes.

Some examples of qualitative assessment questions include: Would increased impervious area and hydromodification due to urban development in the watershed be likely to have positive or negative effects on the hydrologic regime? Given the projected increase in development, would a small, medium, or large effect be expected? What components of river hydrology would be most affected (baseflow, peak flows, etc.)? What other river health indicators would likely be affected by the hydrologic changes? What human uses would be affected and how large and in what direction (positive or negative) would the effect be?

Deliverables

- Technical memorandum or report summarizing anticipated changes to infrastructure, land use, and other water-related changes within the study area and the likelihood of future projects. The document will assess possible impacts of these projected future changes to each of the each of the river health variables and river user needs. It will also include a companion map that depicts, at a minimum, (1) discrete locations of projected changes, and (2) the spatial extent of general areas of greatest challenge or potential in terms of anticipated future changes.

6. Information Synthesis and Reporting

After existing and future conditions are documented in Tasks 2-6, the information will be **synthesized in a final report**.

Methods/Procedures

After existing and future conditions are documented in Tasks 2-6, the information will be **synthesized in a final report**. This report will characterize the capacity of the river to deliver desired goods and services to the community both now and in the future. This analysis will identify the primary drivers and greatest risks to unsatisfied demand for desired river benefits. Drivers may include hydrologic flow regime modification, floodplain land uses and development, invasive species, lack of access points, non-point source pollution, or other stressors. The report will also lay out next steps for the River Envisioning Project, including prioritization of risks, project ideas and implementation actions.

Deliverable

- Comprehensive technical report summarizing the results of the conditions assessment, identifying trends, probable drivers and stressors of environmental conditions
- Community oriented report that synthesizes and shares key findings for a broader public audience that will be used in Task 1.4.

7. Action Strategies and Implementation Plan

Once the assessment process is complete, BTWC will lead the Advisory Committee through a process of prioritizing the risks for water users and river health and **identifying action strategies** to mitigate them. The Implementation Plan will include recommendations for periodic updates to the assessments conducted and the specific actions strategies and projects in the Implementation Plan.

Methods/Procedures

Sub-Task 7.1 - the Advisory Committee will select decision making criteria that will be used to prioritize, rank and evaluate the issues and risks found during the assessment process

Sub-Task 7.2 – For the high priority risks/issues, the Advisory Committee will work with stakeholders to brainstorm and compile potential options to make measurable progress on the priority issues. A document will outline, for each option, the level of feasibility and return on investment. Options will include a broad array of actions, including construction of multi-purpose infrastructure projects, river restoration, flow management scenarios, recreation opportunities, and changes to plans guiding land use and development.

Sub-Task 7.3 – For those action strategies that are deemed feasible, an Implementation Memo will outline a project description, a time line, a budget, and a lead agency. The Advisory Committee will provide their findings to stakeholders and will coordinate with

identified lead agencies on implementation of high priority projects. This Memo will be used by the Advisory Committee to raise funds and implement future projects.

Deliverables

- Prioritized list of issues/risks found during the assessment process
- Options document that identified an array of actions that could be taken to mitigate the high priority issues/risks
- Implementation Memo for feasible actions

8. Project Management

The purpose of this task is to support the Big Thompson Watershed Coalition Board and Staff with the **project management** needs of the Project, specifically: tracking project progress, including each consultant's deliverables and costs against the scope of work; supporting the Coalition with the necessary communication and coordination with the Project Team; coordinating with Colorado Water Conservation Board (CWCB), as needed; and preparing for and participating in public education and stakeholder meetings.

Method/Procedure

The BTWC staff will provide Project Management services as outlined in the sub-tasks below.

Subtask 8.1 - Track and report on project tasks, budget, and schedule, oversee invoicing

Subtask 8.2 - Coordinate with the Advisory Committee and lead the project team, including regular check-ins and review/revision of documents as appropriate

Subtask 8.3 - Oversee quality of deliverables, including grant reports and final report

Deliverable

- Revised scope of work, schedule, and budget upon project kickoff
- Progress reports
- Monthly invoices

Budget and Timeline Table

TASKS & TOTALS								
Task	Task Description	Start Date	End Date	Estimated Labor Costs	Estimated Direct Costs	Total Project Costs	Total Project Revenue	CWCB Funds
1	Stakeholder and Community Engagement	7/1/2019	7/30/2021	$ 42,990	$ 1,200	$ 44,190	$ 44,190	$ 20,890
2	Hydrology Characterization	9/1/2019	12/31/2019	$ 20,970	$ -	$ 20,970	$ 20,970	$ 7,830
3	River Health and Benefits Assessments	9/1/2019	9/30/2020	$ 81,800	$ 2,000	$ 83,800	$ 83,800	$ 47,100
4	Infrastructure Assessment	9/1/2019	12/31/2019	$ 17,600	$ 600	$ 18,200	$ 18,200	$ 5,700
5	Future Conditions: Growth and Development	7/1/2020	3/30/2021	$ 35,000	$ -	$ 35,000	$ 35,000	$ 3,100
6	Information Synthesis and Reporting	1/1/2021	6/1/2021	$ 35,400	$ -	$ 35,400	$ 35,400	$ 26,300
7	Action Strategies and Implementation Plan	3/1/2021	6/30/2021	$ 38,100	$ -	$ 38,100	$ 38,100	$ 28,300
8	Project Management and Coordination	7/1/2019	7/30/2021	$ 16,920	$ 300	$ 17,220	$ 17,220	$ 7,220
	Totals			**$ 288,780**	**$ 4,100**	**$ 292,880**	**$ 292,880**	**$ 146,440**

TASKS & TOTALS				CASH MATCH						IN-KIND MATCH	
Task	Task Description	Total Project Costs	CWCB Funds	S. Platte Roundtable	New Belgium Grant	Northern Water	City of Loveland	City of Greeley	Larimer County	Northern Water	Big Thompson Watershed Forum
1	Stakeholder and Community Engagement	$ 44,190	$ 20,890	$ 7,500	$ 2,500	$ 2,500					$ 10,800
2	Hydrology Characterization	$ 20,970	$ 7,830							$ 13,140	
3	River Health and Benefits Assessments	$ 83,800	$ 47,100		$ 2,500		$ 5,000	$10,000			$ 19,200
4	Infrastructure Assessment	$ 18,200	$ 5,700	$ 10,000		$ 2,500					
5	Future Conditions: Growth and Development	$ 35,000	$ 3,100	$ 10,000			$ 5,000		$5,000	$ 3,500	$ 8,400
6	Information Synthesis and Reporting	$ 35,400	$ 26,300	$ 2,500							$ 6,600
7	Action Strategies and Implementation Plan	$ 38,100	$ 28,300	$ 5,000							$ 4,800
8	Project Management and Coordination	$ 17,220	$ 7,220	$ 5,000			$ 5,000				
	Totals	**$ 292,880**	**$ 146,440**	**$ 40,000**	**$ 5,000**	**$ 5,000**	**$15,000**	**$10,000**	**$5,000**	**$ 16,640**	**$ 49,800**

COLORADO WATERSHED RESTORATION PROGRAM GRANT APPLICATION

PROJECT PROPOSAL SUMMARY SHEET

Project Title: Yampa River Basin Integrated Water Management Project

Project Location: Four segments of the Yampa Basin (see map in the Scope of Work):

- Upper Yampa River: Yampa headwaters (Bear River and its tributaries) from the Flattops to Stagecoach Reservoir, Yampa mainstem to Lake Catamount, and Oak Creek basin.
- Middle Yampa River: Yampa mainstem from Elk River to Elkhead Creek
- Lower Yampa River: Yampa mainstem and Elkhead Creek from confluence to Deerlodge
- Elk River Basin: Elk River and major tributaries

Grant Type: Stream Management Plan

Grant Request/Amount: $235,000

Cash Match Funding: $241,750

In-kind Match Funding: $178,000

Project Sponsor(s): Yampa White Green Basin Roundtable

Fiscal Agent: Selection of a fiscal agent is pending. Options include Colorado River Water Conservation District, Community Agriculture Alliance or Upper Yampa Water Conservancy District.

Contact person name, email address, and phone number: Jaclyn Brown, jbrown@tristategt.org, (970) 819-2484

Brief description of the project:

The Yampa/White/Green Basin Roundtable (BRT) is committed to protecting and enhancing the Yampa River for agricultural, municipal, industrial, environmental and recreational users, as expressed in the 2015 Basin Implementation Plan and its eight goals. The BRT continued planning efforts in 2016-17 by creating a sophisticated hydrology model of the Yampa and White river systems. This proposal continues progress on the BIP through an Integrated Water Management Plan (IWMP).

This IWMP proposal provides a roadmap to collaboratively identify and support actions that help implement the basin goals. It was crafted through extensive stakeholder outreach in 2018. This project charts a path forward for the BRT to progress on BIP goals while also building relationships with water users in the basin and responding to their needs; both were key needs found in the scoping process. It will combine stakeholder input with science and engineering assessments to identify actions that users can take to protect existing and future water uses in the Yampa River basin and support healthy river ecosystems in the face of growing population, changing land uses and climate uncertainty.

Application Evaluation Criteria

1) Qualifications Evaluation (Maximum of 20 points)

1.1 Identify the lead project sponsor and describe the other stakeholders' level of participation and involvement. 10 points

The lead project sponsor is the Yampa, White, Green Basin Roundtable. Like all nine Basin Roundtables, the Yampa, White, Green was legislatively created in 2005 and funded to facilitate discussions on water management and encourage locally-driven collaborative solutions. The YWG BRT is the only entity in the region that represents the broad geography and diverse interests of northwestern Colorado communities. Members represent local governments, environmental conservation, recreation, agriculture and more. As such, the BRT is the ideal entity to undertake integrated water planning as it regularly balances the interests of basin stakeholders.

This proposal will create opportunities to involve a variety of stakeholders. Local water users and community members will work with the Segment Coordinators to clearly define their needs and values, identify priority locations or issues in each segment to help guide characterization (Task 4) and additional data collection (Task 5), and to vet possible actions (Tasks 3 and 8). Area NGOs such as The Nature Conservancy, River Network, Community Agriculture Alliance and Trout Unlimited will provide staff time to develop stakeholder engagement plans, conduct assessment field work, meet with water users to understand river hydrology and identify demonstration projects. Water managers and DWR staff will ensure that water rights and river operations are accurately characterized and projected. This IWMP is truly a team effort supported by a variety of local Yampa basin residents and stakeholders.

1.2 Specify in-kind services and cash contributions (match) amount for the proposed activities. See section B.2 of the grant program guidance to determine match funding requirements. Discuss whether other funding sources are secured or pending. 10 points

Secured cash contributions total $85,000. An additional $30,000 in requests are pending Dec/Jan decisions by the relevant boards: Tri-State Generation & Transmission, Mt. Werner Water & Sanitation District, and Upper Yampa Water Conservancy District. The Basin Roundtable requires two readings for all funding proposals, including ones internal to the BRT. It will hear a request for $126,750 in WSRF funds on November 14 and vote on approval of these funds at its January 2019 meeting.

Secured in-kind contributions total $178,000 for support of project coordination (River Network), assessments and field work (TNC and TU), agricultural water user engagement (Community Ag Alliance), water user education (DWR), and recreation and general public engagement (Friends of the Yampa).

2) Organizational Capability (Maximum of 30 points)

2.1 What is the applicant organization's history of accomplishments in the watershed? Provide several past project or planning examples. List partner organizations and agencies with whom applicant worked to implement past projects or planning efforts. 10 points

The YWG BRT has completed numerous planning studies, assessments, stakeholder engagement processes and water projects in the basin in its 13 year history. It has funded an array of local projects ranging from feasibility studies for new storage to diversion reconstruction to a Stream Management Plan through Steamboat Springs. A full list of funded projects is available at https://www.yampawhitegreen.com/projects.

The YWG BRT also oversees a basin-wide water education effort in partnership with the Community Agriculture Alliance and Yampatika. The effort involves regular opinion pieces in local newspapers, radio PSAs, youth education programs, ranch tours and more. Examples of the work can be found at: https://www.yampawhitegreen.com/education/#pepo

To scope the IWMP in 2018, the YWG BRT contracted with CBI Inc, Wilson Water Group, Community Agriculture Alliance and The Nature Conservancy to interview water users, water managers, basin roundtable members and compile existing information. From this process we discovered a need for identification, prioritization and support of on-the-ground projects, as well as a desire for stronger relationships between water management organizations (including the YWG BRT) and local water users. Memos from the scoping tasks can be found at: https://drive.google.com/drive/folders/1keUgzsGAe3HICK52ValYJq2piH1DppZh?usp=sharing

Water planning is at the heart of the YWG BRT's activities. Most recently, it completed an 18-month update to the baseline CDSS Yampa model so it accurately represents current administration and can predict future demands, implementation of IPPs, and possible shortages to junior water rights, consumptive needs and environmental/recreational flows. In addition to modeling, this project required extensive interviews with area water management organizations (Colorado River District, Upper Yampa Water Conservancy District, City of Steamboat Springs, Colorado Parks and Wildlife, Mt. Werner Water and Sanitation District, Rio Blanco Water Conservancy District, etc) to understand their operations and IPPs.

In 2015, the YWG BRT completed its Basin Implementation Plan which identified initial measures to meet YWG basin goals to firm up supplies for existing uses and for future growth, while meeting recreational and environmental needs. All BRT recreational, environmental, agricultural, municipal and industrial stakeholders unanimously adopted the BIP's eight goals and their associated measurable outcomes.

Prior to 2015, the YWG BRT performed the following assessments:

- Nonconsumptive Needs Focus Mapping Report and Watershed Flow Evaluation Tool (2010)
- Energy Development Water Needs Assessment (2011)
- Agricultural Water Needs Assessment (2011)

Individual organizations that are members of the YWG BRT, who will oversee implementation of its recommendations, also have a long history of completing projects in the basin. Below is a small sampling of the projects undertaken by BRT member organizations:

- Stagecoach Reservoir expansion, Upper Yampa Water Conservancy District, 2010
- Dry-year water leases to improve Yampa River flows, Upper Yampa Water Conservancy District, City of Steamboat Springs and Colorado Water Trust, 2012-2013, 2015-2018
- Upper Elkhead Creek river restoration projects, Trout Unlimited, 2011-current
- Little Yampa Canyon riverside campsite development, Friends of the Yampa and US Bureau of Land Management, 2018
- Walker Ditch diversion improvement, The Nature Conservancy, 2018
- Leafy Spurge mapping and pilot eradication projects, National Park Service and Yampa River Leafy Spurge Group, 2015-current

2.2 What level of staffing will be directed toward the implementation of the proposed project/planning effort? Discuss the number of staff and amount of time dedicated for the project. Will volunteers be utilized, and if so, how? Include brief resumes for each member of the active project team. 10 points

The IWMP will be a multi-year effort that will require active oversight and contracting. Because the BRT is not a legal entity and has no paid staff, it needs support from its member organizations to apply for funds, hire contractors, and carry out the necessary work. To implement the IWMP, the BRT recommends a team approach, and has defined a leadership structure, shown in the Scope of Work. The Roundtable understands that a team structure is needed for efficient decision-making and carrying out tasks, but it retains the final approval of all consultants, methods, scopes of work and budgets.

The following individuals will provide active oversight and coordination of the IWMP:
Nicole Seltzer, River Network
Nicole has guided development of this IWMP proposal, and will continue to provide coordination and project management services throughout the life of the project. She is providing 1/3 of her time for the life of the project as in-kind match. Nicole currently leads River Network's efforts to strengthen the influence and effectiveness of local coalitions in Colorado and the Western U.S. through knowledge sharing, mentorship and breaking down silos. Prior to joining River Network, Nicole was Executive Director of the Colorado Foundation for Water Education and handled public affairs for the Northern Colorado Water Conservancy District. Nicole has a bachelor's degree in Environmental Studies from the University of Kansas, and a master's degree in Water Resources from the University of Vermont.

Patrick Stanko, Community Agriculture Alliance
Patrick performed much of the water user engagement during the scoping of this IWMP proposal, and will continue to advise and implement water user input and education for the life of the project. He is providing one-quarter of his time as in-kind match. Patrick is a fourth-generation rancher on a local Yampa Valley ranch that has been in the family for more than 100 years. After a 20-year hiatus from the valley getting his Engineering degree and working in the cooperation world, Patrick moved back to the valley in 2013 to help with the family ranch. Staring work for CAA in 2018, Patrick is exited to promote agriculture in the Yampa Valley. As the Agriculture Resource Coordinator, Patrick will continue water education, land stewardship classes, and supporting the agriculture community in the Yampa Valley.

Geoff Blakeslee, The Nature Conservancy
Geoff is the environmental representative on the Basin Roundtable, and advised on the assessment tasks (Tasks 4 and 5) during IWMP scoping. Geoff will continue to be involved in the IWMP Committee and ensure that assessments are well-designed and lead to implementable outcomes. Geoff will provide up to 10% of his time for this project. Geoff Blakeslee is the Yampa River Project Director for The Nature Conservancy. He has been with the Conservancy for the past 22 years and is responsible for implementing innovative ecosystem protection on the Yampa River in northwestern Colorado. His work includes initiating significant community outreach activities, engaging in planning efforts with federal, state and local officials, and working with local partners to secure funding to support community-based conservation programs. Geoff was appointed to the Colorado Water Conservation Board from 2007 to 2013 and served as Board Chairman for two one-year terms.

Jaclyn Brown, Tri-State Generation & Transmission, BRT Chair
As Basin Roundtable chair, Jackie has ensured that the IWMP scoping process in 2018 was thorough and inclusive. Jackie spends up to 10% of her time on BRT activities, and she will continue to guide the

IWMP and coordinate the involvement and approval of the full Basin Roundtable for the life of the project. Jackie is the Water & Natural Resource Policy Advisor for Tri-State Generation and Transmission Association, working in four states and the Colorado River Basin. She has spent time in a variety of positions prior to this one - forest and fire management, high-altitude agriculture, and watershed management. Jackie holds the Energy/Industry seat on the Colorado Water Congress Board of Directors. She attended both the University of Colorado and Colorado State University.

2.3 Demonstrate that the project budget and schedule are realistic. Please use the budget/timeline spreadsheet attached to the application. Please note that the start date will take place after funding awards are announced and grants are contracted. 10 points

The YWG BRT performed extensive scoping to develop this IWMP proposal. Interviews with water users, water managers, and DWR staff, as well as a thorough compilation of existing information makes the BRT confident that the tasks in this proposal are the right ones. The BRT built a budget that adequately supports hiring the needed help (Segment Coordinators, Senior Facilitator, hydrologists, scientists, etc) and has formal commitments of in-kind involvement from many BRT member organizations with needed expertise. While the BRT awaits a funding decision from CWCB on this grant, it will move ahead with IWMP Committee bylaws, developing technical RFPs and job descriptions, and using in-kind support to plan needed ecology and infrastructure assessments. The project schedule allows for two field seasons, if needed, and at three years is likely more generous than other Stream Mgt Plan efforts in Colorado.

3) Proposal Effectiveness (50 points)

3.1 What information is the project sponsor using to develop the proposed plan or project? 10 points

The 2015 Basin Implementation Plan is the guiding document for this proposal. The adopted basin goals are the framework under which all assessments and project proposals will fall.

The YWG BRT reviewed a number of existing assessments to ensure the tasks in this proposal are needed and not duplicative. Attachment B includes the *Science Data Compilation and Gap Assessment* performed by the Nature Conservancy in 2018 that organizes 54 data sources and studies by river segment and provides a synthesis as to how they relate to the IWMP goals. A key takeaway is that data that exist are typically from larger-scale assessments. To design and implement more targeted work, there will need to be additional local-scale, site level assessments.

In addition to data compilation, the YWG BRT contracted with CBI Inc, Wilson Water Group, and Community Agriculture Alliance to interview water users, water managers and basin roundtable members. The interviews identified the needs of these stakeholders, and they were used to develop a scope of work that speaks to local needs. Memos from these interviews can be found at: https://drive.google.com/drive/folders/1keUgzsGAe3HICK52ValYJq2piH1DppZh?usp=sharing

3.2 Discuss the multiple objective aspects of the project and how they relate to each other. Describe similar activities in the watershed and how this project or plan complements but does not duplicate those activities. 30 points

From the beginning, the YWG BRT wanted to develop a project that included the needs and objectives of a variety of stakeholders. The enclosed scope of work is built on a series of key questions (see Scope of Work Section 3.0) that will make progress on a sub-set of the Basin Implementation Plan goals that stakeholders in each segment will have the opportunity to explore through this project. Tasks in the

scope of work will make progress on multiple objectives by:

- Exploring opportunities for expanded recreation
- Assessing irrigation infrastructure for how well it meets water user needs, legal requirements and river health parameters
- Documenting existing river health conditions and exploring actions to improve or protect it in the future
- Identifying opportunities to use existing or build new storage to meet consumptive and environmental shortages

The YWG BRT understands that while it does its planning work, basin organizations and water users will continue to implement single objective projects. Basin organizations will continue to plan new storage, improve fisheries habitat, install head gate measuring and control devices, etc. The IWMP in no way precludes projects from happening, and recognizes that important work will continue outside the IWMP. The IWMP adds value because it will focus on developing innovative, multi-objective projects that can be replicated and supported with increased stakeholder buy-in, development of regional plans that attract new funding, and performing extensive field-level assessments. Our goal is to leverage and integrate the good work already occurring in the basin to achieve outcomes that are not possible with single-objective projects.

3.3 Describe the proposed monitoring or implementation plan. How will the project or plan measure success of its objectives? 10 points

Ultimately, project success will be measured by the implementation of projects or management strategies that protect or improve the health of the Yampa River while also meeting water users' needs.

More immediately, the project will measure its success by:

- Active engagement of BRT members and other stakeholders in the IWMP Committee
- Success of the Segment Coordinators in getting productive feedback and involvement of local water users and landowners
- Completion of all deliverables in the scope of work on time and budget
- Implementation and funding of projects identified in Task 8

SCOPE OF WORK

GRANTEE: Yampa White Green Basin Roundtable
FISCAL AGENT: Selection of a fiscal agent is pending. Options include Colorado River Water Conservation District, Community Agriculture Alliance or Upper Yampa Water Conservancy District.
PRIMARY CONTACT: Jaclyn Brown, BRT Chair
ADDRESS: Tri-State Generation & Transmission, PO Box 33695 Westminster, CO 80234
PHONE: 970-819-2484
PROJECT NAME: Yampa River Basin Integrated Water Management Project
GRANT AMOUNT: $235,000

1.0 INTRODUCTION AND BACKGROUND

The Yampa/White/Green Basin Roundtable (BRT) is committed to protecting and enhancing the Yampa River for agricultural, municipal, industrial, environmental and recreational users, as expressed in the 2015 Basin Implementation Plan and its eight goals. The BRT continued planning efforts by creating a sophisticated hydrology model of the Yampa and White river systems.

This IWMP scope of work provides a roadmap to collaboratively identify and support actions that help implement the basin goals. It was crafted through extensive stakeholder outreach in 2018 to assess local support, including:

- Consensus Building Institute, Inc. performed one-on-one interviews with approximately 40 major stakeholders and BRT members,
- Community Agricultural Alliance engaged over 100 agricultural producers in small group meetings,
- Wilson Water Group interviewed Division Engineer staff, and
- River Network facilitated three workshops for BRT members and interested citizens.

This project charts a path forward for the BRT to progress on BIP goals while also building relationships with water users in the basin and responding to their needs; both were key needs found in the scoping process. It will identify actions that users can take to protect existing and future water uses in the Yampa River basin and support healthy river ecosystems in the face of growing population, changing land uses and climate uncertainty.

2.0 PROJECT AREA, PHASING AND OBJECTIVES

This scope of work outlines a first phase of integrated water planning, focusing on four segments of the Yampa Basin, which are:

- Upper Yampa River: Yampa headwaters (Bear River and its tributaries) from the Flattops to Stagecoach Reservoir, Yampa mainstem to Lake Catamount, and Oak Creek basin.
- Middle Yampa River: Yampa mainstem from Elk River to Elkhead Creek
- Lower Yampa River: Yampa mainstem and Elkhead Creek from confluence to Deerlodge
- Elk River Basin: Elk River and major tributaries

As shown in Figure 1, these segments do not cover the entire Yampa River or all of the tributaries. In particular, the BRT supports the recently completed Stream Management Plan for the Yampa River through the City of Steamboat and does not wish to duplicate efforts.

Stakeholder outreach identified the four segments suitable for integrated planning, but due to resource constraints (people and money), availability of existing data and existing levels of willingness to collaborate, this scope of work recommends a phased approach.

Phase 1 will undertake Tasks 1-4 in all four segments, while Tasks 5-8 will proceed in two segments. In Phase 2, additional funding will allow the remaining two segments to proceed through Tasks 5-8. Work in Task 4 will determine which of the four segments are in Phase 1 and which are in Phase 2. It is not necessary for all Phase 1 work to be completed prior to starting Phase 2, if there is energy and funding to proceed.

Figure 2 outlines a summary of the tasks, the eight project objectives, and phasing.

5.0 BUDGET AND TIMELINE

Below are budget tables showing all expenses and revenue sources. Cash and in-kind-match are broken down in Tables 2 and 3. The schedule on the next page shows the overall schedule, with decision points by the IWMP Committee and Basin Roundtable highlighted.

	Description	Start Date	Completion Date	Total Expense Budget	Total Revenue Budget	Total In-Kind Match[2]	Total Cash Match[1]	CWCB SMP Grant Funds
1	Project Oversight and Coordination	*Jan-19*	*Jun-22*	$ 107,876	$ 107,876	$ 60,000	$ 37,500	$ 10,376
2	Stakeholder Engagement	*Jun-19*	*Jun-22*	$ 212,130	$ 212,130	$ 70,000	$ 75,250	$ 66,880
3	Identify and Implement Demonstration Projects and Case Studies	*Nov-19*	*Sep-20*	$ 29,750	$ 29,750	$ -	$ 15,000	$ 14,750
4	Assess Existing Conditions and Identify Information Gaps	*Nov-19*	*Sep-20*	$ 37,480	$ 37,480	$ 26,000	$ -	$ 11,480
5	Perform Field Assessment and Model Refinement	*Jan-19*	*Oct-21*	$ 179,954	$ 179,954	$ 22,000	$ 99,000	$ 58,954
6	Final Conditions Assessment	*Jun-20*	*Mar-21*	$ 45,060	$ 45,060	$ -	$ 15,000	$ 30,060
7	Develop Decision Making Criteria	*Jan-19*	*Mar-20*	$ 15,300	$ 15,300	$ -	$ -	$ 15,300
8	Develop and Prioritize Action Plans	*Jun-21*	*Jun-22*	$ 27,200	$ 27,200	$ -	$ -	$ 27,200
	TOTAL			$ 654,750	$ 654,750	$ 178,000	$ 241,750	$ 235,000
						27%	37%	36%

Task	[1]Cash Match					
	BRT (Jan request)	Pending Cash Asks*	TNC	TU	River Network	TOTAL
Project Oversight and Coordination	$ 7,500	$ 30,000				$ 37,500
Stakeholder Engagement	$ 65,250				$ 10,000	$ 75,250
Identify and Implement Demonstration Projects and Case Studies	$ 15,000					$ 15,000
Assess Existing Conditions and Identify Information Gaps						
Perform Field Assessment and Model Refinement	$ 24,000		$ 60,000	$ 15,000		$ 99,000
Final Conditions Assessment	$ 15,000					$ 15,000
Develop Decision Making Criteria						
Develop and Prioritize Action Plans						
TOTAL	$ 126,750	$ 30,000	$ 60,000	$ 15,000	$ 10,000	$ 241,750

* The following cash match requests will be considered in December/January by the relevant boards: YWG Basin Roundtable, Tri-State Generation & Transmission, Mt. Werner Water & Sanitation District, Upper Yampa Water Conservancy District

Task	[2]In-Kind Match						
	TNC	TU	River Network	DWR	Ag Alliance	FOTY	TOTAL
Project Oversight and Coordination			$ 60,000				$ 60,000
Stakeholder Engagement					$ 50,000	$ 20,000	$ 70,000
Identify and Implement Demonstration Projects and Case Studies							
Assess Existing Conditions and Identify Information Gaps	$ 10,000	$ 6,000		$ 10,000			$ 26,000
Perform Field Assessment and Model Refinement	$ 10,000	$ 12,000					$ 22,000
Final Conditions Assessment							
Develop Decision Making Criteria							
Develop and Prioritize Action Plans							
TOTAL	$ 20,000	$ 18,000	$ 60,000	$ 10,000	$ 50,000	$ 20,000	$ 178,000

COLORADO WATERSHED RESTORATION PROGRAM GRANT APPLICATION

PROJECT PROPOSAL SUMMARY SHEET

Project Title: Ensuring Effective Stream Mgt Plans

Project Location: Statewide

Grant Type: Stream Management Plan

Grant Request/Amount : $139,400

Cash Match Funding: $210,000

In-kind Match Funding: $ 0

Project Sponsor(s): River Network

Contact person name, email address, and phone number: Nicole Seltzer, nseltzer@rivernetwork.org, 720-930-4567

Project Description:

Colorado's Water Plan offers specific guidance to protect and enhance stream flows, primarily through collaborative Stream Management Planning. Since 2016, River Network has lead a project to help CWCB and Colorado communities meet the Water Plan goal of 80 percent of locally prioritized rivers covered by Stream Management Plans by 2030. The CWCB approved 13 Stream Management Plan grants in 2016-2018 with total grant funding of over $1.2 million. In addition, almost $550,000 of Water Supply Reserve funds were used to support SMP efforts. The number of stream miles included in these plans is unclear since many of them encompass entire watersheds and numerous tributaries, but the number is certainly in the low thousands.

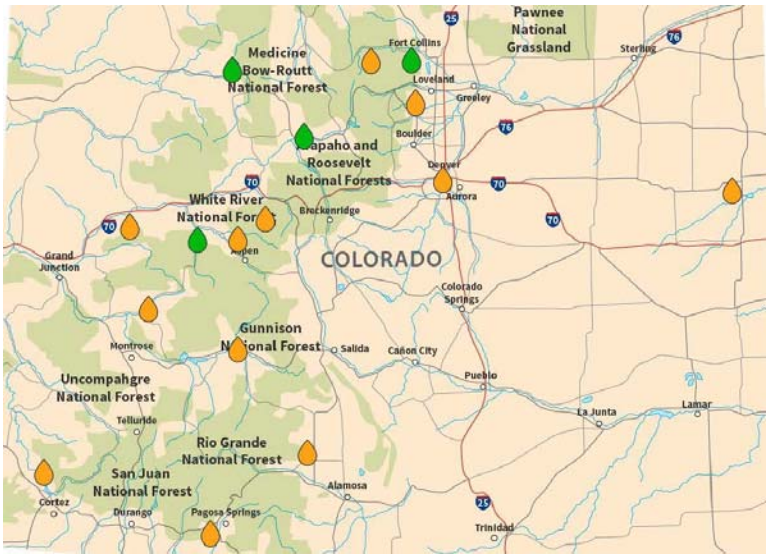
River Network has directly assisted scoping of six SMPs, and mentored many more. Our work accounted for over 60% of the SMP grant funds CWCB distributed in 2017, and applications in 2018 will request a similar amount. In addition to directly supporting coalitions in scoping SMPs, River Network has worked to build and improve the practice of SMPs in Colorado. Through dozens of presentations, workshops and articles, River Network created a network of professionals working on SMPs and improved planning outcomes through collecting and sharing best practices.

Meeting the Water Plan goal and measuring the impact of SMP grants requires continued investment. This project proposes to continue important work to provide early support to get SMPs off the ground for two additional years. It will also grow adoption of best practices through widely sharing lessons learned that we've collected in 2017 & 2018. Finally, it will track implementation of SMPs and define their success. Beginning in 2020, there will be a wave of finalized SMPs as those that received 2017/18 funding are completed. Many of these projects will return to the Basin Roundtables and CWCB for implementation funding. Establishing a method to track completion, implementation and success of SMPs will help CWCB demonstrate the effectiveness of its grant funding, and encourage other funders to support them.

I. Qualifications Evaluation (Maximum of 20 points)

1) Identify the lead project sponsor and describe the other stakeholders' level of participation and involvement. (10 points)

River Network will lead this project in partnership with Colorado Water Conservation Board staff and the many coalitions in Colorado that are pursuing SMPs. Since 2016, River Network has lead a project to help CWCB and Colorado communities meet the Water Plan goal of 80 percent of locally prioritized rivers covered by Stream Management Plans by 2030. CWCB staff has been very involved in this work by providing guidance on which coalitions to support, giving input into SMP scopes of work to ensure they exceed the guidance requirements, and actively participating in presentations, workshops and written content development. This important partnership is critical to future success of this work. In addition, there are approximately 20 water professionals in Colorado that have lead SMP development in different basins, as shown in the map. While these stakeholders are a key audience for this proposal, they are also the subject matter experts. They contribute their experiences and lessons learned, give their time to mentor new SMP leads, and help review best practices documentation. River Network sees itself at the coordinator of this proposal, but it is the participation of CWCB staff and SMP leads that truly makes it successful.



Map of current (orange) and completed (green) SMPs in Colorado

2) Specify in-kind services and cash contributions (match) amount for the proposed activities. See section B.2 of the grant program guidance to determine match funding requirements. Discuss whether other funding sources are secured or pending. (10 points)

The Gates Family Foundation and Walton Family Foundation have emerged as important partners in implementing Colorado's Water Plan in the last few years. They have increased their interest and support of SMPs in the last year in particular. Gates was an early investor in River Network's initial SMP work, and has confirmed an additional $140,000 in 2019 and 2020 to support direct assistance for SMP scoping and development of best practices for engaging diverse stakeholders, including agriculture, in SMPs. The Walton Family Foundation is interested in supporting and documenting a model SMP that effectively integrates ecological, recreational and consumptive uses. They have committed $70,000 in 2019 and 2020 to be used towards establishing metrics of success and supporting SMP development.

II. Organizational Capability (Maximum of 30 points)

1) What is the applicant organization's history of accomplishments in the watershed? Provide several past project or planning examples. List partner organizations and agencies with whom applicant worked to implement past projects or planning efforts. (10 points)

River Network has established itself as a leading advocate for the development of stream management plans. In 2016, River Network set out to understand and remove the obstacles to producing robust plans. Our research found that a number of the coalitions interested in Stream Management Planning did not have the capacity to initiate stakeholder processes, develop the technical scopes of work, or acquire needed matching funds. Our work to enlarge the pipeline of local coalitions that are interested, ready and capable of undertaking stream management plans has been successful. It resulted in three successful applications in 2017 (partnering with coalitions in the Eagle, St. Vrain and Middle Colorado) and 3 pending in 2018 (partnering with coalitions in the Yampa, North Fork Gunnison and Big Thompson). Most, if not all, of this $2million in new projects would not have happened without River Network's assistance, and our support helped distribute 60% of the SMP grant funding in 2017.

In addition to direct assistance to coalitions, River Network increased interest in and knowledge of stream management plans in almost 20 communities, several of which submitted grant applications to CWCB in 2017 or 2018. Through a series of workshops held in partnership with The Nature Conservancy, River Network significantly increased the involvement of the NGO and technical communities in identifying potential locations for a plan and thinking about how to scope and implement them. As an outcome of these workshops, River Network is currently working with the Cross-Watershed Network to compile an on-line guide to best practices in Stream Management Planning that will be completed in Summer 2019.

2) What level of staffing will be directed toward the implementation of the proposed project/planning effort? Discuss the number of staff and amount of time dedicated for the project. Will volunteers be utilized, and if so, how? Include brief resumes for each member of the active project team. (10 points)

Stream Management Plan support is currently 80% of staff member Nicole Seltzer's time, along with several contractors. River Network's staff time to oversee this proposal is primarily covered through funding from the Gates and Walton Family Foundations. Alba Watershed Consulting's Kim Lennberg will provide additional support for science and hydrology related tasks. Compilation of lessons learned and SMP tracking will be performed by an additional contractor. In 2018 this work was performed by Lindsay Murdoch of the Cross-Watershed Network. While Lindsay has moved on from that position, Cross-Watershed Network may provide staff time for this project in 2019 and 2020, but that decision is pending CWN's hiring of a new coordinator.

Nicole Seltzer, River Network

Nicole leads River Network's efforts to strengthen the influence and effectiveness of local coalitions in Colorado and the Western U.S. through knowledge sharing, mentorship and

breaking down silos. Prior to joining River Network, Nicole was Executive Director of the Colorado Foundation for Water Education and handled public affairs for the Northern Colorado Water Conservancy District. Nicole oversaw production of Colorado's premiere publication on water, Headwaters magazine, for almost ten years, and her guidance of a leadership development program with over 125 alumni from Colorado's water community is a source of pride. She's served on both sides of a Board of Directors for several watershed coalitions, including the Colorado Watershed Assembly, and has led multi-day tours for elected officials, planned week-long professional conferences, chaired a year-long statewide celebration of water and helped produce a feature length documentary. Nicole has a bachelor's degree in Environmental Studies from the University of Kansas, and a master's degree in Water Resources from the University of Vermont.

Kim Raby Lennberg, Alba Watershed Consulting
Kim Lennberg is the founder and owner of Alba Watershed Consulting and has 17 years of experience investigating a range of environmental science and policy subjects, specializing in using an interdisciplinary approach to watershed science and characterization. Kim's professional expertise includes monitoring and assessing watershed health by examining the chemical, physical, biological, and hydrological characteristics of aquatic ecosystems; designing, coordinating, managing, and conducting extensive ecological and aquatic field investigations; and providing technical support for public and private clients via data interpretation and evaluation, database management and manipulation, Geographic Information Systems (GIS) analysis, and technical report writing. Recent project work includes technical assistance, monitoring, and reporting related to flood recovery; evaluation of river restoration projects through aquatic and riparian habitat quality assessment; and management of fishery and aquatic resource monitoring and reporting projects in areas impacted by phosphate mining.

3) Demonstrate that the project budget and schedule are realistic. Please use the budget/timeline spreadsheet attached to the application. Please note that the start date will take place after funding awards are announced and grants are contracted. (10 points)
This proposal runs from July 2019 through March 2021. River Network's current CWCB grant to develop the on-line guide to best practices in Stream Management Planning ends in June 2019. This proposal will build on that work for the next two years. Based upon the last two years of effort and expenses, River Network is confident that the proposed tasks can be completed on-time and on-budget.

III. Proposal Effectiveness (50 points)

1) What information is the project sponsor using to develop the proposed plan or project? (10 points)
In early 2017, River Network conducted a survey of watershed groups in Colorado to define the knowledge gaps that exist which limit local coalitions' ability to accomplish a stream management plan. Key needs were funding and human capacity, education on how and why local coalitions can meet their mission by focusing on flows (rather than just water

quality), and access to experts and in-person trainings. River Network then set about developing a responsive plan to meet these gaps in 2017 and 2018.

In 2018, River Network undertook a second survey and follow-up interviews to document the goals, approaches, tasks and successes and challenges of current and completed SMPs. This work is documented in summaries of each SMP (See Attachment B for an example) and a white paper due in January 2019. Sharing this information through the upcoming on-line SMP Resource Guide will, over time, result in plans that incrementally improve and become more effective and implementable.

River Network is also utilizing the work of others, including the experiences of statewide NGOs as they support SMPs in specific basins (notably TNC and TU). We have also made good use of the Colorado Basin Roundtable's 2018 document "*Integrated Water Management Planning In The Colorado River Basin*."

River Network is also relying on its own experience working alongside coalitions in the Yampa, St. Vrain, Eagle, North Fork Gunnison, Big Thompson and Middle Colorado as they craft and implement SMPs. As each of these coalitions works through progress on their SMPs, River Network has been alongside them with advice, support and ideas. Every new SMP we assist with benefits from these experiences.

2) Discuss the multiple objective aspects of the project and how they relate to each other. Describe similar activities in the watershed and how this project or plan complements but does not duplicate those activities. (30 points)

The overall goal of this work is to support the emergence of a more effective, capable and connected network of coalitions across Colorado that are interested, ready and capable of undertaking effective stream management plans. The objectives of this grant proposal are to:

- Document and share SMP best practices in a variety of ways that will result in more effective and implementable SMPs over time;
- Establish a method to track completion, implementation and success of SMPs so that CWCB can efficiently demonstrate effectiveness of grant funding, and to encourage other funders to invest in SMPs;
- Continue to encourage development of SMPs through direct assistance to local coalitions.

The outcomes of this work, more and better stream management plans, is inherently multi-objective because a well done SMP produces a series of actions that benefit water users, wildlife, recreation economies and the environment. SMPs allow for identification and prioritization of environmental and recreational goals within a legal and administrative framework that mostly exists to support consumptive uses. Because a majority of recommended actions are voluntary and require support and participation from water users

and managers, SMPs must speak to the objectives of those stakeholders to have any chance of implementation.

3) Describe the proposed monitoring or implementation plan. How will the project or plan measure success of its objectives? (10 points)

To assess overall success, River Network will monitor:

- The number of stream management plan grant applications received by CWCB in November 2018-2020, and the number of potential applications in future years
- Feedback from workshop, field trip and webinar participants
- Website metrics for the on-line SMP Resource Guide
- Surveys from the three selected coalitions to gauge how their organization directly benefited from the assistance provided in Task 3

Attachment A
Scope of Work, Schedule & Budget

GRANTEE PRIMARY CONTACT: Nicole Seltzer, River Network
ADDRESS: PO Box 21387, Boulder CO 80308
PHONE: 720-930-4567
PROJECT NAME: Ensuring Effective Stream Mgt Plans
GRANT AMOUNT: $139,400

1) **INTRODUCTION AND BACKGROUND**

Colorado's Water Plan offers specific guidance to protect and enhance stream flows, primarily through collaborative Stream Management Planning. Since 2016, River Network has lead a project to help CWCB and Colorado communities meet the Water Plan goal of 80 percent of locally prioritized rivers covered by Stream Management Plans by 2030. The CWCB approved 13 Stream Management Plan grants in 2016-2018 with total grant funding of over $1.2 million. In addition, almost $550,000 of Water Supply Reserve funds were used to support SMP efforts. The number of stream miles included in these plans is unclear since many of them encompass entire watersheds and numerous tributaries, but the number is certainly in the low thousands.

River Network has directly assisted scoping of six SMPs, and mentored many more. Our work accounted for over 60% of the SMP grant funds CWCB distributed in 2017, and applications in 2018 will request a similar amount. In addition to directly supporting coalitions in scoping SMPs, River Network has worked to build and improve the practice of SMPs in Colorado. Through dozens of presentations, workshops and articles, River Network created a network of professionals working on SMPs and improved planning outcomes through collecting and sharing best practices.

Meeting the Water Plan goal and measuring the impact of SMP grants requires continued investment. This project proposes to continue important work to provide early support to get SMPs off the ground for two additional years. It will also grow adoption of best practices through widely sharing lessons learned that we've collected in 2017 & 2018. Finally, it will track implementation of SMPs and define their success. Beginning in 2020, there will be a wave of finalized SMPs as those that received 2017/18 funding are completed. Many of these projects will return to the Basin Roundtables and CWCB for implementation funding. Establishing a method to track completion, implementation and success of SMPs will help CWCB demonstrate the effectiveness of its grant funding, and encourage other funders to support them.

2) OBJECTIVES

The overall goal of this work is to support the emergence of a more effective, capable and connected network of coalitions across Colorado that are interested, ready and capable of undertaking effective stream management plans. The objectives of this grant proposal are to:

- Document and share SMP best practices in a variety of ways that will result in more effective and implementable SMPs over time
- Establish a method to track completion, implementation and success of SMPs so that CWCB can efficiently demonstrate effectiveness of grant funding, and to encourage other funders to invest in SMPs

3) TASKS

TASK 1 – Document and Share SMP Best Practices

One of the most successful ways to ensure effective SMPs is to give the coalitions undertaking them good examples completed by other groups, and to share lessons learned and advice. As in-process SMPs make progress, their goals, approaches, and successes and challenges should be documented to help others learn. This will, over time, result in plans that incrementally improve and become more effective and implementable.

Since 2016, River Network has held numerous webinars and workshops to educate coalitions on the concept of Stream Management Plans and how to accomplish and finance them. They regularly fill up, and feedback is positive. In River Network's 2018 survey of SMP leads, we asked, "What additional support would improve SMP/IWMP efforts?" Of the 15 survey responses received, 11 requested opportunities to learn what works and what doesn't from other watershed groups and water managers and continued sharing of processes and lessons learned in different plans. In a survey from a workshop for SMP leads held in October 2018, we asked "Do you find it valuable to connect with others conducting SMP efforts in their own watersheds?" Nineteen of the 21 respondents said yes, and that "hearing what things have/have not worked for different people is helpful in making your own process go as smoothly as possible."

To meet this continued demand, this task would update lessons learned documentation compiled in 2018 and share that documentation through workshops in 2019 and 2020. Deliverables from other CWCB grantees working on compiling best practices will also be included.

Task 1.1: Interviews of SMP leads

Method/Procedure:

River Network and Cross Watershed Network completed a survey and interview of 13 in-process SMPs in mid-2018 to capture best practices and lessons learned from SMP/IWMP leads and stakeholders. The results are documented in summary sheets of each SMP (Attachment B provides an example) and in a white paper on best practices that will be complete in January 2019. As those coalitions progress, River Network and its contractors will follow up with them in January 2020 and January 2021 and update their lessons learned. We will also conduct surveys and interviews with all new SMPs to add their experiences. Survey questions will identify where they are at in their SMP process, notable challenges in each step of the process, and enabling conditions that lead to success. Results will be publicly available during updates to the SMP Resource Guide and through the trainings in Task 1.2.

Task 1.2: Best Practices Trainings

Method/Procedure:

River Network will use a variety of training types to communicate best practices, including:

--A one-day training for current and potential SMP leads in conjunction with the Sustaining Colorado Watersheds Conference in October 2019 and 2020. This training will provide an opportunity for up to 30 SMP leads to share best practices with each other and hear from CWCB staff.

--Site visits/field trips in June 2019 and 2020 (one on the east slope and one on the west slope) for both current and potential SMP leads, as well as other interested parties. The site visits will explore assessment results, demonstration projects and/or implementation of SMPs that began in 2016 or 2017.

--Two webinars/phone calls per year (February and August 2020 and 2021) for current SMP leads to discuss notable challenges or enabling conditions for success as they implement their SMPs.

Deliverables:

- Summary sheets for each SMP updated annually by March 2020 and 2021, hosted on the SMP Resource Guide website
- Updates to the 2019 Lessons Learned white paper and related content on the SMP Resource Guide website in 2020 and 2021
- Two workshops for current and potential SMP leads in conjunction with the Sustaining Colorado Watersheds Conference
- Two site visits for current and potential SMP leads, as well as other interested parties, to explore assessment results and project implementation
- Four webinars/phone calls for SMP leads to discuss what's working and what isn't

TASK 2: Establish metrics of success

Overview:

Colorado's Water Plan goal of 80 percent of locally prioritized rivers covered by Stream Management Plans by 2030 has prompted communities to undertake SMPs. With 13 SMPs funded by CWCB since 2016 and a handful of others that have proceeded with private funding, there are now a sufficient number of SMPs in Colorado to begin thinking about what it means for them to be successful. Simply having an SMP isn't the desired ultimate outcome. Implementing projects that improve or protect stream health is the end point for all of these planning processes.

Now is the right time to track the implementation of SMPs and define their success. Beginning in early 2020, there will be a wave of finalized SMPs as those that received funding in 2017 and 2018 are completed. Many of these projects will return to the Basin Roundtables and CWCB for implementation funding. Establishing a method to track completion, implementation and success of SMPs will help CWCB demonstrate the effectiveness of its grant funding, and encourage other funders to support them.

CWCB has already developed an approach for monitoring the effectiveness of grant-funded restoration projects through its long-term flood recovery monitoring program. Initiated in 2017, this program seeks to advance the science of stream restoration by evaluating the long-term effectiveness of traditional and innovative rehabilitation techniques at a subset of flood recovery project sites. The Colorado Stream Health Assessment Framework (COSHAF), a Colorado-specific tool that uses 11 variables to evaluate the key factors that determine the health and resilience of a stream reach, is being used for this program. At all priority sites, baseline (post-construction) and future monitoring data are used to understand stream health trends and to evaluate the goal of enhancing watersheds and stream corridors.

It is beyond the scope of this proposal to develop a program to methodically monitor SMP projects' results on river health. However, having an up-to-date compilation of the projects that are implemented as a result of SMPs, and knowing which variables SMP leads track over time, will make it much easier when, down the road, CWCB or others want to track the success of projects implemented as a result of SMPs.

Sub-task 2.1: Create reporting tool

Method/Procedure:

Ideally, every SMP has a plan to monitor implementation progress and the plan's success as it relates to specific project goals. Follow-up reporting at regular intervals after completion of an SMP is not currently required, however, so tracking of whether and how SMPs are implemented will remain inconsistent unless a simple reporting schedule and tool is created. This task will create a simple reporting tool for SMP leads to easily upload and store information on SMP progress and implementation actions. A firm that specializes in qualitative evaluation methods will advise on the reporting tool's design.

A detailed database or similar tracking mechanism will be developed to assist in documenting and tracking the outcomes of each SMP. First, as each SMP is completed, discrete action items, recommendations, and implementation plan components will be identified and documented. In addition to channel and floodplain improvement projects, recommendations and potential implementation actions may include policy changes, non-diversion agreements, water efficiency upgrades, specific flow releases, and other measures whose progress or trajectory toward success is not as straightforward to track as discrete stream restoration projects (e.g., riparian revegetation, diversion reconstruction, or floodplain reconnection projects). Therefore, through thorough review of SMP action plans, follow-up discussions with SMP leads (and consultant teams, as needed), and site visits (as needed), fields will be populated for each potential action item to document the following:

- SMP location
- Type of action (e.g., policy change, conservation measure, restoration project, diversion retrofit, flow release, etc.)
- Whether implementation of the action has begun or anticipated timeframe for implementation of the action
- Interim steps in the progress of the action
- Expected outcome(s) of action (including which stream health variables are expected to improve as a result of the action)
- Measurable targets for success of the action

Having a central place to track implementation of SMP recommendations and action items will illustrate the reach and success of the CWCB's grant program. The tracking database will allow CWCB to summarize the number of projects conceived (and eventually implemented) as a result of SMPs, and to generate summary statistics associated with the overall grant program. Access to this database may also help inform decisions about providing funding for implementation of specific projects.

The central database may also help individual watersheds with their implementation actions: having one place where all proposed actions and recommendations are stored would show overlap of the same or similar action items and ideas across watersheds, and perhaps facilitate information-sharing in those situations.

Once the implementation process begins for individual projects, CWCB can consider a methodology to monitor the effectiveness of individual projects and examine how successful they are at meeting defined goals of the project and the associated SMP.

Sub-task 2.2: Pilot and launch reporting tool

Method/Procedure:

Once developed, River Network will pilot the reporting tool in Winter 2020 by:

1) Selecting a sampling (up to 8) of completed SMPs to participate in the pilot, and performing the necessary follow up to ensure participation;
2) Work with selected SMP leads as they prepare and upload their data, being sure to review and fix any data errors or inconsistencies
3) Interview selected SMP leads about their experience and how the reporting tool could be simpler and more efficient;
4) Summarize the data on implementation of SMPs in tables and charts and work with CWCB staff to design a reporting memo that is simple yet communicates important information on grant program successes.

River Network will use results from the pilot experience to adapt and improve the reporting tool so it is simple, quick and efficient. Revisions will be incorporated and the reporting tool will be formally launched in Winter 2021. The launch will entail:

1) Communication with and support to all completed SMPs to enter their data, or update it if they participated in the 2020 pilot launch
2) Summarize data in the agreed-upon reporting memo format that simply but effectively communicates the implementation of SMPs and summarizes the accomplishments of the SMP grant program in Colorado from 2016-2020.

Deliverables:

- Draft reporting tool and associated database in 2020
- Feedback from pilot, updates to reporting tool
- Draft Reporting Memo
- Formal launch of reporting tool in 2021
- Memo documenting success of the SMP program from 2016-2020

TASK 3 – Direct Assistance for SMP scoping

River Network's early assistance to coalitions as they convene stakeholders, set goals, and scope tasks has incubated 6 SMPs in 2017 and 2018 that will implement projects to protect or restore flows and achieve other river health benefits. These projects make measurable progress in implementing Colorado's Water Plan, and would likely not have happened without River Network's assistance. Momentum for SMPs is growing as a result, though there remains a lack of completed examples from which to learn. It is River Network's assumption that support for SMP applications will be less necessary after 2020, when the current crop of SMPs result in implementable projects or other demonstrable successes and documentation of best practices will be completed.

To help increase the diversity of the kinds of groups leading SMPs, in 2019 and 2020, River Network will select at least two coalitions (out of a total of 6) that heavily involve agricultural organizations.

Method/Procedure

River Network provides direct support to emerging and existing coalitions through support from our staff, additional paid consulting, and the network of experts that has been developed since 2017. The types of support provided will depend upon the coalitions' needs, but have included communication materials, meeting facilitation and stakeholder outreach, grant writing, site visits to learn from other coalitions, and technical assistance with tasks and budgets.

Deliverable

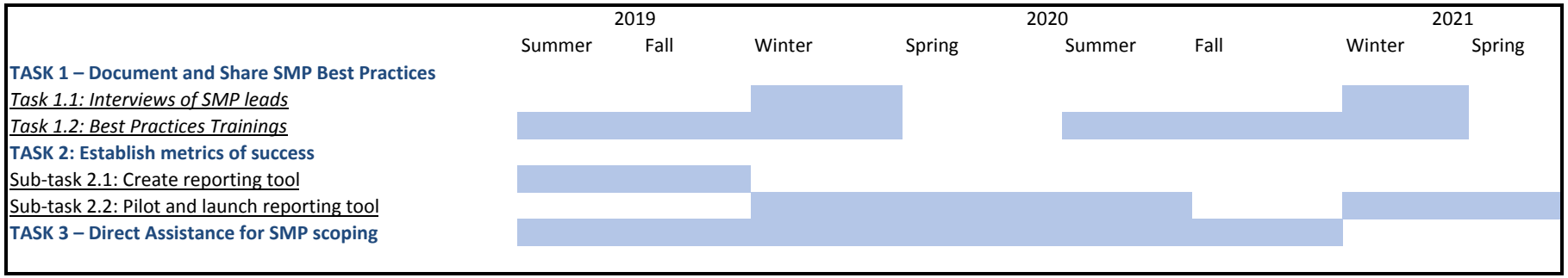
- Stream Management Plan grant applications from three coalitions in 2019 and three in 2020

4) REPORTING AND FINAL DELIVERABLE

Reporting: River Network shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the statement of work including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed.

SCHEDULE



BUDGET

	Start Date	End Date	Total Expense	CWCB SMP Grant	Gates Family Foundation	Walton Family Foundation	Total Match
TASK 1 – Document and Share SMP Best Practices	Jul-19	Feb-21	$ 166,450	$ 66,450	$ 100,000		$ 100,000
TASK 2: Establish metrics of success	Jul-19	Mar-21	$ 87,550	$ 52,550		$ 35,000	$ 35,000
TASK 3 – Direct Assistance for SMP scoping	Jul-19	Nov-20	$ 95,400	$ 20,400	$ 40,000	$ 35,000	$ 75,000
TOTAL			**$ 349,400**	**$ 139,400**	**$ 140,000**	**$ 70,000**	**$ 210,000**