COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Last Updated: June 2020

Colorado Water Conservation Board

Water Plan Grant Application

Instructions

To receive funding for a Water Plan Grant, applicant must demonstrate how the project, activity, or process (collectively referred to as "project") funded by the CWCB will help meet the measurable objectives and critical actions in the Water Plan. Grant guidelines are available on the CWCB website.

If you have questions, please contact CWCB at (303) 866-3441 or email the following staff to assist you with applications in the following areas:

Water Storage Projects	Matthew.Stearns@state.co.us
Conservation, Land Use Planning	Kevin.Reidy@state.co.us
Engagement & Innovation Activities	Ben.Wade@state.co.us
Agricultural Projects	Alexander.Funk@state.co.us
Environmental & Recreation Projects	Chris.Sturm@state.co.us

FINAL SUBMISSION: Submit all application materials in one email to *waterplan.grants@state.co.us*
in the original file formats [Application (word); Statement of Work (word); Budget/Schedule (excel)]. Please do not combine documents. In the subject line, please include the funding category and name of the project.

Water Project Summary

Name of Applicant	Root and Ratliff Ditch Company
Name of Water Project	Root and Ratliff Pipeline Project

CWP Grant Request Amount	$250,000
Other Funding Sources BOR Salinity	$3,600,000
Other Funding Sources CWCB Loan	$150,000
Other Funding Sources SWBRT	$20,000
Applicant Funding Contribution: In-kind from ditch members	$414,000
Total Project Cost	$4,434,000

Last Updated: June 2020

Applicant & Grantee Information
Name of Grantee(s) Root and Ratliff Ditch Company
Mailing Address PO Box 764, Mancos, CO 81328
FEIN 84-0932966
Organization Contact Tom Weaver
Position/Title Board Member
Email weavercattle@hotmail.com
Phone 970-799-7833
Grant Management Contact Tom Weaver
Position/Title Board Member
Email rootandratliff@gmail.com
Phone 970-799-7833
Name of Applicant (if different than grantee)
Mailing Address
Position/Title
Email
Phone

Description of Grantee/Applicant
Provide a brief description of the grantee's organization (100 words or less).
The Root and Ratliff Ditch Company is located near Mancos, CO primarily in Montezuma County beginning at an elevation of approximately 7,300 ft. This ditch diverts an average of 12.8 cfs of irrigation water from the Mancos River for an average of 153 days/year and 2.44 cfs of stock water for 212 days during the winter months for 37 users. This ditch serves a reported 1,290 acres with an open earthen canal with no improvements or piped sections. The ditch is 5.49 miles in length, has a diversion right for 37 cfs from the Mancos River.

Last Updated: June 2020

Type of Eligible Entity (check one)	
	Public (Government): Municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
	Public (Districts): Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
X	**Private Incorporated:** Mutual ditch companies, homeowners associations, corporations.
	Private Individuals, Partnerships, and Sole Proprietors: Private parties may be eligible for funding.
	Non-governmental organizations (NGO): Organization that is not part of the government and is non-profit in nature.
	Covered Entity: As defined in Section 37-60-126 Colorado Revised Statutes.

Type of Water Project (check all that apply)	
	Study
X	Construction
X	Identified Projects and Processes (IPP)
	Other

Category of Water Project (check the primary category that applies and include relevant tasks)		
	Water Storage - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.. *Applicable Exhibit A Task(s):*	
	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, and drought planning. *Applicable Exhibit A Task(s):*	
	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website. *Applicable Exhibit A Task(s):*	
X	Agricultural - Projects that provide technical assistance and improve agricultural efficiency. *Applicable Exhibit A Task(s):*	
X	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. *Applicable Exhibit A Task(s):*	
	Other	Explain:

Last Updated: June 2020

Location of Water Project	
Please provide the general county and coordinates of the proposed project below in **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Montezuma
Latitude	37.353822 (Diversion Location)
Longitude	N108.259806 (Diversion Location)

Water Project Overview
Please provide a summary of the proposed water project (200 words or less). Include a description of the project and what the CWP Grant funding will be used for specifically (e.g., studies, permitting process, construction). Provide a description of the water supply source to be utilized or the water body affected by the project, where applicable. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, and area of habitat improvements, where applicable. If this project addresses multiple purposes or spans multiple basins, please explain. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.
The Root and Ratliff (R&R) Pipeline Project will take steps to improve the effectiveness and safety of their irrigation system for diverting, measuring and delivering water to 37+ company members and 1,290 acres. The proposed project entails enlarging and improving the quality of wildlife habitat on three parcels by completion of several enhancement activities. The three parcels total approximately 15 acres and already include some open water and wetland habitat. The proposed work includes the following: Expand existing wetland habitat by 0.37 acres, build a new 0.2 acre pond, plant emergent wetland vegetation in shallow areas, plant a mix of trees and shrub species for a diverse habitat, treat areas of noxious weeds, replace existing fencing with wildlife friendly fencing, install a series of bird nesting boxes, and install a pipe to connect the outlet to ensure the delivery of additionally purchased ditch water for the 50 year requirement. The R&R will be responsible for maintaining the habitat replacement following construction. Maintenance would include noxious weed control, planting additional vegetation as needed and maintaining the hydrology of these sites. This project will also install 27,248’ of PVP pipeline, replacing 29,000’ of existing open earthen canal.

Last Updated: June 2020

Measurable Results		
To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:		
	New Storage Created (acre-feet)	
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive	
	Existing Storage Preserved or Enhanced (acre-feet)	
	Length of Stream Restored or Protected (linear feet)	
X	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
X	Area of Restored or Preserved Habitat (acres)	
	Quantity of Water Shared through Alternative Transfer Mechanisms	
	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
	Number of Coloradans Impacted by Engagement Activity	
X	Other	Explain: Salt kept out of Colorado River **2,347 tons/year**

Water Project Justification
Provide a description of how this water project supports the goals of Colorado's Water Plan, the most recent Statewide Water Supply Initiative, and the applicable Roundtable Basin Implementation Plan and Education Action Plan. The Applicant is required to reference specific needs, goals, themes, or Identified Projects and Processes (IPPs), including citations (e.g. document, chapters, sections, or page numbers). The proposed water project shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan Framework for State of Colorado Support for a Water Project (CWP, Section 9.4, pp. 9-43 to 9-44;)
This ditch piping project supports section 10.3 D of the CWP in that it will help maintain agricultural viability and support agricultural conservation and efficiency for water shareholders. It also addresses section 10.3 F of the CWP to recover imperiled species and promote restoration, recovery, and resiliency of endangered, threatened, and imperiled aquatic and riparian dependent species and plant communities through the implementation of their habitat replacement plan. The 2,347 tons/year of salt kept out of the Colorado River will improve the protection and restoration of water quality. This project addresses the recommendations in Section 8, pg. 242 of the Statewide Water Supply Initiative in that it will address both agricultural and environmental initiatives. It also is utilizing funding opportunities to assist in implementing the project and methods to meet Colorado's nonconsumptive water supply needs. Through our partnering with BOR, CWCB and Mancos Conservation District, we are demonstrating a commitment to collaboration, demonstrating sustainability, and fiscal and technical feasibility. It also fulfills Colorado State Statute 37-60-122.2 (C.R.S.), known as the Fish and Wildlife Resources Fund and Authorization, this project addresses fish and wildlife resources as a matter of statewide concern, and that projects proposing water diversion, delivery, or storage projects should reasonably mitigate impacts on such resources.

Section 4.6 of the BIP indicates the need for ditch company improvements and efficiency projects. There is potential to upgrade these ditches (by lining or piping) to conserve water. Specific IPPs exist for ditch companies that have identified planned improvements and efficiencies. These projects include ditch linings and headgate improvements. This project also aligns with the recommendations from the Mancos Water Conservancy District. This project also aligns with future projects that will continue the work completed by the Mancos River Habitat and Diversion Project - Phase II.

Benefits of this project are the reduction of loss of water to evaporation, transpiration, and rodent pressures. Even if we minimally gain 20% (though the number will probably be greater) of that water back through piping, it will mean the water we have been losing to these issues (in addition minimizing carry water) can stay in Jackson Lake or in the Mancos River. Piping the ditch will mean cleaner water and less emergency management in large rain events. Cleaner water means more efficient irrigation, especially those running smaller nozzles, drip irrigation and micro sprinklers. Overall, piping will give the users of the R&R better access to their water rights, while allowing more river water to stay in the Valley's system as a whole. This would hopefully mean users could stay in priority longer, more water could stay in the lake, and R&R users would have more confidence in knowing they are getting their allotted deliveries of water.

Related Studies

Please provide a list of any related studies, including if the water project is complementary to or assists in the implementation of other CWCB programs.

Mancos Watershed Plan of 2011

Previous CWCB Grants, Loans or Other Funding

List all previous or current CWCB grants (including WSRF) awarded to both the Applicant and Grantee. Include: 1) Applicant name; 2) Water activity name; 3) Approving RT(s); 4) CWCB board meeting date; 5) Contract number or purchase order; 6) Percentage of other CWCB funding for your overall project.

Last Updated: June 2020

The R&R Ditch Company has not received funding from either the CWCB or the SWBRT previously.
The R&R Ditch Company, Pipeline Project, is applying for CWP Grant in the amount of $250,000.
The R&R Ditch Company, Pipeline Project, is applying for CWCB Loan in the amount of $150,000
Percentage of other CWCB funding for our project is 6%

Taxpayer Bill of Rights

The Taxpayer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect your application.

As an incorporated ditch company, we are not subject to TABOR.

Submittal Checklist	
X	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract.
Exhibit A	
X	Statement of Work(1)
X	Budget & Schedule(1)
X	Engineer's statement of probable cost (projects over $100,000)
X	Letters of Matching and/or Pending 3rd Party Commitments(1)
Exhibit C	
X	Map (if applicable)(1)
	Photos/Drawings/Reports
	Letters of Support (Optional)
	Certificate of Insurance (General, Auto, & Workers' Comp.) (2)
	Certificate of Good Standing with Colorado Secretary of State(2)
	W-9(2)
	Independent Contractor Form(2) (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY	
	Engagement & Innovation Supplemental Application(1)

Last Updated: June 2020
(1) Required with application.
(2) Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.

Last Updated: June 2020

ENGAGEMENT & INNOVATION GRANT FUND SUPPLEMENTAL APPLICATION

Introduction & Purpose

Colorado's Water Plan calls for an outreach, education, public engagement, and innovation grant fund in Chapter 9.5.

The overall goal of the Engagement & Innovation Grant Fund is to enhance Colorado's water communication, outreach, education, and public engagement efforts; advance Colorado's water supply planning process; and support a statewide water innovation ecosystem.

The grant fund aims to engage the public to promote well-informed community discourse regarding balanced water solutions statewide. The grant fund aims to support water innovation in Colorado. The grant fund prioritizes measuring and evaluating the success of programs, projects, and initiatives. The grant fund prioritizes efforts designed using research, data, and best practices. The grant fund prioritizes a commitment to collaboration and community engagement. The grant fund will support local and statewide efforts.

The grant fund is divided into two tracks: engagement and innovation. The Engagement Track supports education, outreach, communication, and public participation efforts related to water. The Innovation Track supports efforts that advance the water innovation ecosystem in Colorado.

Application Questions

*The grant fund request is referred to as "project" in this application.

Overview (answer for both tracks)
In a few sentences, what is the overall goal of this project? How does it achieve the stated purpose of this grant fund (above)?
Who is/are the target audience(s)? How will you reach them? How will you involve the community?
Describe how the project is collaborative or engages a diverse group of stakeholders. Who are the partners in the project? Do you have other funding partners or sources?

Last Updated: June 2020

Overview (answer for both tracks)
Describe how you plan to measure and evaluate the success and impact of the project?
What research, evidence, and data support your project?
Describe potential short- and long-term challenges with this project.

Please fill out the applicable questions for either the Engagement Track or Innovation Track, unless your project contains elements in both tracks. If a question does not relate to your project, just leave it blank. Please answer each question that relates to your project. Please reference the relevant documents and use chapters and page numbers (Colorado's Water Plan, Basin Implementation Plan, PEPO Education Action Plan, etc.).

Engagement Track
Describe how the project achieves the education, outreach, and public engagement measurable objective set forth in Colorado's Water Plan to "significantly improve the level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys."
Describe how the project achieves the other measurable objectives and critical goals and actions laid out in Colorado's Water Plan around the supply and demand gap; conservation; land use; agriculture; storage; watershed health, environment, and recreation; funding; and additional.
Describe how the project achieves the education, outreach, and public engagement goals set forth in the applicable Basin Implementation Plan(s).

Describe how the project achieves the basin roundtable's PEPO Education Action Plans.

Innovation Track
Describe how the project enhances water innovation efforts and supports a water innovation ecosystem in Colorado.
Describe how the project engages/leverages Colorado's innovation community to help solve our state's water challenges.
Describe how the project helps advance or develop a solution to a water need identified through TAP-IN and other water innovation challenges. What is the problem/need/challenge?
Describe how this project impacts current or emerging trends; technologies; clusters, sectors, or groups in water innovation.

Last Updated: June 2020

Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work	
Date:	**11/20/2020**
Name of Grantee:	**Root and Ratliff Ditch Company**
Name of Water Project:	**Pipeline Project**
Funding Source:	**CWP water project-agricultural and environmental**

Water Project Overview:

Average annual precipitation is 16.93 inches with the wettest months occurring in August and September. May and June are the driest months, this makes irrigation efficiency the top priority for delivering water when the crops need it most. Temperatures range from highs of 68 to 82, during the growing season of about 150 days, but we are seeing increased temperatures and drier than average years become more of the normal. Soils are derived from an overlay of Mancos Shale contributing to the salt loads of the Mancos River Corridor.

This proposed diversion, habitat replacement and pipeline project will start at R&R's river head gate structure. The existing structure will be modified, and a new drop screen pipe inlet structure will be added with overflow water returning to the river. The new structure will prevent fish and other aquatic wildlife from entering the pipeline by using a coanda intake screen. The pipeline project will install 27,248' of PVC pipeline, including replacing 29,000' of existing earthen canal. It is a proposed closed system providing sprinkler pressure to the majority of the shareholders. A Parshall flume with a digital readout that can be accessed online is included as part of this system which will be located at the beginning of this pipeline. The pipe used for this project will be PVC ranging from 28" to 18" in size and 100 psi rating. The proposed pipeline will be installed in or very near the existing ditch however, landowners have expressed a willingness to allow the pipeline to be straightened and shortened on their property. If this project is successful, the pipeline will likely be shorter. The pipeline crosses Hwy 160 and travels south across the valley. This pipeline will have 18 outlet stations with valves and flow meters. Some of these 18 outlet stations are for the laterals that the R&R serves. All of these laterals are currently working with the NRCS for on-farm improvements that include more efficient systems. For these outlet stations extra valves and flowmeters have been accounted for in the cost estimate budget. All existing laterals that will be been piped will be connected to this proposed pipeline. Engineers conducted a thorough survey of the R&R and its outlets. This pipeline has an elevation drop of 257 ft or 111 psi static pressure. All outlets on this proposed pipeline will have high pressure needles valves for 50 to 75 psi operating pressure. All the farms are below this pipeline and most shareholders have already installed sprinkler systems with the help of the local NRCS. As part of this proposed pipeline the abandoned ditch will be filled to the existing canal prism and the banks will be laid back and graded as the ditch is filled. The ditch has obtained a conceptual design and cost estimate for the entire project.

R&R has successfully acquired funding and is currently implementing a system wide piping and measurement project through Reclamation's Colorado River Salinity Control Program (BOR). R&R is requesting CWP funding for the additional match needed to accomplish a successful and environmentally sound project.

SGM was selected to complete the required permitting and engineering for the project. The permitting is complete, engineering is done, and the project is set for construction. There is approximately $3.0M of USBR grant funds remaining and our EOPC in August 2020 was right at $2.8M. We advertised the bid in August and when we opened the bids in late September the lowest bidder came in just under $4.0M. Over $700,000 of the increase was directly attributable to recent spike in pipe costs. That rapid change was primarily due to the early hurricane impacts to PVC manufacturing plants, the increase in demands, and the overall economic volatility.

We've talked with the USBR and low-bidder and have started a Value Engineering (VE) process. Our plan is to rebid the VE project in January/February 2021 when pipe prices have historically been lower. We also plan to break the pipeline out into a separate schedule, so that the Ditch Company could directly purchase the pipe from a supplier and have the contractor assume the materials. We would also allow contractors to bid on the pipe, and if they were lower than the suppliers, then they could both provide and install the pipeline. The Root & Ratliff Ditch plans to operate in 2021, as it has historically, so we would probably encourage contractors to get started and do what they could before May 1, 2021. However, the bulk of the work would likely be constructed in the fall of 2021. We hope the VE process and rebidding will get the final construction cost down around the $3.0M range. However, the Ditch Company would like to seek additional funds should there be a shortfall. The ditch company and landowners are also willing to offer in-kind oversight and management, equipment and services in areas that do not require engineering or licensed contractors.

Project Objectives:

The Objectives of the project are to:

1. NEPA and Implement Habitat Replacement Plan
2. Design and construct new headgate (including trash screen, flush gate and overflow system and Parshall flume) and Install 27,248ft of PVC to replace existing pipeline and open earthen canal
3. Administer, manage and report on the project.

Tasks
Task 1 – NEPA and Implement Habitat Replacement Plan
Description of Task:

Last Updated: June 2020

Tasks
The NEPA process has been completed, along with the consultations with State Historic Preservation Officer and the Tribal preservation Officer. This project has been found to be in compliance with section 106 of the National Historic Preservation Act. The proposed project entails enlarging and improving the quality of wildlife habitat on three parcels by completion of several enhancement activities. The three parcels total approximately 15 acres and already include some open water and wetland habitat. The proposed work includes the following: Expand existing wetland habitat by 0.37 acres, build a new 0.2 acre pond, plant emergent wetland vegetation in shallow areas of the new and existing ponds, plant a mix of trees and shrub species for a diverse habitat, treat areas of noxious weeds, replace existing fencing with wildlife friendly fencing, install a series of bird nesting boxes, and install a pipe to connect the outlet to ensure the delivery of additionally purchased ditch water for the 50 year requirement. This ditch piping project will not injure the New Mexico Jumping Mouse, Southwestern Willow Flycatcher, Yellow-billed Cuckoo, Colorado Pikeminnow or the Razorback Sucker, but this habitat replacement plan will provide future habitat for these species.
Method/Procedure:
1. NEPA/Habitat Replacement Planning is completed 2. Engineer and Contractor implement plan. 3. R&R Ditch Company complete all maintenance agreements
Deliverable:
Habitat Replacement project complete with new wildlife habitat and wetland project, R&R Diversion and headgate inlet system, including trash screen, flush gate and overflow system, and Parshall flume that is fish friendly.

Last Updated: June 2020

Tasks
Task 2 – <u>Design, construct new headgate and install 27,248ft of PVC pipeline</u>
Description of Task:
R&R diversion structure is a vital part of the 37 CFS irrigation system that serves approximately 1,290 acres just east of Mancos, Colorado. The flush gates, overflow system and Parshall flume have been in service for many years and are simply worn out and are not suitable for safe fish passage. R&R has patched up and attempted to fix the many issues associated with these dated structures, but they have become excessively labor intensive. Engineers have provided the R&R with a conceptual design and cost estimate for the construction of new improved headgate inlet system. The R&R Pipeline Project replaces an open earthen ditch with a PVC pipeline that will include 18 shareholder outlets. As part of the pipeline project the existing river diversion structure will be improved with a water drop self-cleaning screen, valves and a flow meter will be constructed at the head works of the proposed pipeline. PVC pressure pipe will be installed in and near the existing ditch. As the pipe is installed in the existing ditch right of way the ditch will be filled with excavated material and ditch bank material. Where the pipe leaves the existing ditch, the ditch will be filled to the existing prism by pushing the ditch banks into the abandoned canal. Some material will be imported if needed to complete filling the ditch prism. In areas where the ditch is deep the ditch prism will be filled, and the banks will be laid back and graded. All the existing concrete splitter boxes and flumes will be removed and replaced with outlet valves and flow meters. Air vents and pressure relief valves will be strategically placed throughout the pipeline. The diversion will have trash racks and the drop screen will self-clean as water spills and splashed on the screen. Water flow will remove debris from the screen. The proposed pipeline will improve the ability for the R&R to deliver water to its shareholders without the shrinkage it currently experiences and with better reliability. The pipeline will be a pressurized system so shareholders can take advantage of the pressure that will be in the pipeline.
Method/Procedure:
1. Comply with all BOR timeline method and procedure 2. Engineering finalization 4. Purchase and install 27,248 ft. of PVC pipeline 5. Engineer completes design for new R&R headgate inlet system, including trash screen, flush gate and overflow system, and Parshall flume. 3. Engineer and Contractor constructs new system.
Deliverable:

Tasks
Fish Friendly Inlet and Screen system and 25,760 ft. of new pipeline installed

Tasks
Task 3 – <u>Administer and Manage Project</u>
Description of Task:
Coordinate completion of tasks 1-3 by contractors and R&R members. Secure and track match. Provide fiscal administration of the grant. Write and submit all required progress and final reports.
Method/Procedure:
The R&R will: • coordinate R&R contributions with contractor • receive contractor invoices; prepare and submit reimbursement requests to CWCB • liaison with funding agencies, • track and document project progress, including collecting before and after photos • track match and invoices, write and submit progress and final reports to Colorado Water Conservation Board.
Deliverable:

Last Updated: June 2020

Tasks
1. Successful completion of Tasks 1-3, 2. Match secured and recorded. 3. Invoices received and payed in a timely manner. 4. 1 progress report and 1 final report completed and submitted on-time to CWCB

Repeat for Task 3, Task 4, Task 5, etc.

Budget and Schedule
This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

Reporting Requirements
Progress Reports: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status 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 Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that: • Summarizes the project and how the project was completed. • Describes any obstacles encountered, and how these obstacles were overcome. • Confirms that all matching commitments have been fulfilled. • Includes photographs, summaries of meetings and engineering reports/designs. The CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

Last Updated: June 2020

Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

Costs incurred prior to the effective date of this contract are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of this contract must be provided to CWCB in hard copy and electronic format as part of the project documentation.

Performance Measures

Performance measures for this contract shall include the following:
(a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget in Exhibit B. Per Water Plan Grant Guidelines, the CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.
(b) Accountability: Per Water Plan Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per Water Plan Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment.
(c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary.
(d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.

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Department of Natural Resources

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Water Plan Grant - Exhibit B
Budget and Schedule

Prepared Date: 11/30/2020

Name of Applicant: Root and Ratliff Ditch Company

Name of Water Project: R&R Ditch Piping Project

Project Start Date: 09/01/2021

Project End Date: 05/22/2022

Task No.	Task Description	Task Start Date	Task End Date	Grant Funding Request	Match Funding	Total
1	NEPA and Implement Habitat Replacement Plan	8/1/2021	5/22/2022		$169,000.00	$169,000
2	Design, construct new headgate and install 27,248ft of PVC pipeline	09/30/2021	5/22/2022	$250,000	$3,963,000	$4,213,000
3	Administer and Manage Project	8/1/2021	5/22/2022		$52,000	$52,000
						$0
						$0
			Total	$250,000	$4,184,000	$4,434,000

Root & Ratliff Pipeline Project Engineers Opinion of Probable Cost - 2020/11/30

Item No.	Description	Unit	Estimated Quantity	Unit Cost	Estimated Costs
Schedule 1: Construct Irrigation Pipeline and Associated Appurtenances					
1	Mobilization / Demobilization	LS	1	$ 50,000.00	$ 50,000.00
2	Erosion Control	LS	1	$ 28,000.00	$ 28,000.00
3	Remove & dispose of existing fence	LF	5,700	$ 2.50	$ 14,250.00
4	Remove & dispose of excavated rock	CY	215	$ 75.00	$ 16,125.00
5	Clearing and grubbing, including medium trees, up to 12" diameter, grub stumps, remove & dispose of	AC	23	$ 2,000.00	$ 46,000.00
6	Clearing and grubbing, including heavy trees, 12" diameter and up, grub stumps, remove & dispose of	AC	5	$ 3,500.00	$ 17,500.00
7	Remove & dispose of existing intake structure	LS	1	$ 10,000.00	$ 10,000.00
8	Remove & dispose of existing parshall flume	EA	2	$ 2,500.00	$ 5,000.00
9	Remove & salvage existing ditch headgate structures	EA	18	$ 1,000.00	$ 18,000.00
10	Remove & dispose of existing culvert	LF	150	$ 50.00	$ 7,500.00
11	Existing culvert abandonment (flowable fill)	LF	144	$ 55.00	$ 7,920.00
12	Trench preparation	LF	25,547	$ 3.00	$ 76,641.00
13	Install 30-inch HDPE IPS DR 21 pipe	LF	104	$ 108.00	$ 11,232.00
14	Install 30-inch HDPE IPS DR 21 pipe (slip line existing culvert)	LF	146	$ 200.00	$ 29,200.00
15	Install 27-inch PVC PIP Irrigation Pipe DR 51 pipe (ASTM D2241)	LF	10,628	$ 34.00	$ 361,352.00
16	Install 27-inch PVC PIP Irrigation Pipe DR 41 pipe (ASTM D2241)	LF	1,350	$ 42.00	$ 56,700.00
17	Install 27-inch PVC PIP Irrigation Pipe DR 32.5 pipe (ASTM D2241)	LF	9,790	$ 41.00	$ 401,390.00
18	Install 18-inch PVC PIP Irrigation Pipe DR 32.5 pipe (ASTM D2241)	LF	2,900	$ 35.00	$ 101,500.00
19	Provide & install 12-inch PVC PIP Irrigation Pipe DR 32.5 pipe (ASTM D2241)	LF	20	$ 71.00	$ 1,420.00
20	Provide & install 8-inch HDPE IPS DR 32.5 pipe	LF	110	$ 52.00	$ 5,720.00
21	Provide & install 6-inch HDPE IPS DR 32.5 pipe	LF	80	$ 43.00	$ 3,440.00
22	Provide & install 4-inch HDPE IPS DR 9 pipe	LF	335	$ 43.00	$ 14,405.00
23	Provide & install 3-inch HDPE IPS DR 9 pipe	LF	100	$ 47.00	$ 4,700.00
24	Provide & install 2-inch HDPE IPS DR 9 pipe	LF	60	$ 43.00	$ 2,580.00
25	Provide & install 3/4-inch HDPE IPS DR 9 pipe	LF	70	$ 46.00	$ 3,220.00
26	Inlet structure with screen	LS	1	$ 115,000.00	$ 115,000.00
27	Concrete flume structure w/ lid	LS	1	$ 15,000.00	$ 15,000.00
28	18-inch butterfly valve (Isolation Valve)	EA	3	$ 7,700.00	$ 23,100.00
29	12-inch outlet structure	EA	5	$ 27,000.00	$ 135,000.00
30	8-inch outlet structure	EA	4	$ 19,000.00	$ 76,000.00
31	6-inch outlet structure	EA	4	$ 17,500.00	$ 70,000.00
32	4-inch outlet structure	EA	3	$ 14,500.00	$ 43,500.00
33	3-inch outlet structure	EA	6	$ 13,500.00	$ 81,000.00
34	2-inch outlet structure	EA	2	$ 6,000.00	$ 12,000.00
35	Frost-free hydrant	EA	5	$ 2,100.00	$ 10,500.00
36	Precast junction box for break box	EA	7	$ 7,250.00	$ 50,750.00
37	Combination air valve (1-inch)	EA	4	$ 4,000.00	$ 16,000.00
38	Combination air valve (3-inch)	EA	11	$ 6,000.00	$ 66,000.00
39	27-inch mainline bends (11.25º) including thrust blocks	EA	16	$ 2,500.00	$ 40,000.00
40	27-inch mainline bends (22.5º) including thrust blocks	EA	13	$ 2,500.00	$ 32,500.00
41	27-inch mainline bends (45º) including thrust blocks	EA	12	$ 2,500.00	$ 30,000.00
42	18-inch mainline bends (11.25º) including thrust blocks	EA	3	$ 1,500.00	$ 4,500.00
43	18-inch mainline bends (22.5º) including thrust blocks	EA	3	$ 1,500.00	$ 4,500.00
44	18-inch mainline bends (45º) including thrust blocks	EA	1	$ 1,500.00	$ 1,500.00
45	27-inch PIP x 30-inch HDPE coupling (CDOT Crossing)	EA	2	$ 5,000.00	$ 10,000.00
46	27-inch x 24-inch reducer	EA	3	$ 2,200.00	$ 6,600.00
47	24-inch x 18-inch reducer	EA	1	$ 2,100.00	$ 2,100.00
48	27-inch mainline drain	EA	2	$ 3,000.00	$ 6,000.00
49	27-inch blowoff valve	EA	6	$ 3,500.00	$ 21,000.00
50	Pipe trench clean up (including revegetation)	LF	25,547	$ 2.50	$ 63,867.50
51	Road repair (County Standards)	SY	100	$ 50.00	$ 5,000.00
52	Revegetation (existing ditch only)	SY	94,400	$ 0.50	$ 47,200.00
53	Reshape existing ditch	LF	28,306	$ 3.50	$ 99,071.00
54	Ditch fill material (off-site source)	CY	19,000	$ 10.00	$ 190,000.00
55	Fence	LF	6,140	$ 5.50	$ 33,770.00
56	Gates	EA	20	$ 500.00	$ 10,000.00
				Subtotal	**$ 2,615,254**

Schedule 2: Procure Mainline Pipe (to be installed in Schedule 1 work)					
57	Mobilization / Demobilization	LS	1		$ -
58	Provide 30-inch HDPE IPS DR 21 pipe	LF	250	$ 100.00	$ 25,000.00
59	Provide 27-inch PVC PIP Irrigation Pipe DR 51 pipe (ASTM D2241)	LF	10,628	$ 38.00	$ 403,864.00
60	Provide 27-inch PVC PIP Irrigation Pipe DR 41 pipe (ASTM D2241)	LF	1,350	$ 43.00	$ 58,050.00
61	Provide 27-inch PVC PIP Irrigation Pipe DR 32.5 pipe (ASTM D2241)	LF	9,790	$ 48.00	$ 469,920.00
62	Provide 18-inch PVC PIP Irrigation Pipe DR 32.5 pipe (ASTM D2241)	LF	2,900	$ 30.00	$ 87,000.00
				Subtotal	**$ 1,043,834**
Schedule 3: Habitat Replacement					
63	Mobilization / Demobilization	LS	1	$ 10,000.00	$ 10,000.00
64	Remove & dispose of existing fence	LF	1,750	$ 3.00	$ 5,250.00
65	Clearing & grubbing staging areas, remove & dispose	SY	9,680	$ 1.00	$ 9,680.00
66	Excavate emergent wetland	CY	1,500	$ 11.00	$ 16,500.00
67	Excavate new pond	CY	850	$ 11.00	$ 9,350.00
68	Stabilize existing drainage swale	LF	900	$ 5.00	$ 4,500.00
69	6" Pipe and Cap at Pond Outlet	LF	16	$ 50.00	$ 800.00
70	Bird Nesting Structures	EA	20	$ 257.00	$ 5,140.00
71	Wildlife Friendly Fencing	LF	2,860	$ 11.00	$ 31,460.00
72	Weed Treatment	SY	5,808	$ 0.75	$ 4,356.00
73	Wetland Plants (10 inch containerized nursery stock)	EA	2,800	$ 6.00	$ 16,800.00
74	Shrub (1 gallon)	EA	465	$ 32.00	$ 14,880.00
75	Shrub (2 gallon)	EA	85	$ 49.00	$ 4,165.00
76	Tree (2 gallon)	EA	50	$ 75.00	$ 3,750.00
77	Re-vegetate upland areas	SY	9,680	$ 0.75	$ 7,260.00
				Subtotal	**$ 143,891**
				Total	**$ 3,802,979**

Supplemental Items					
Schedule 1: Supplemental Items					
S1.1	Pipe bursting (CDOT Culvert Crossing) (if needed to install 30 inch HDPE pipe into culvert crossing that is being slip lined into existing cmp culvert under SH 160)	LF	175	$ 300.00	$ 52,500.00
				Subtotal	**$ 52,500**

1-2279-02-20161
Bureau of Reclamation

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
ASSISTANCE AGREEMENT

1A. AGREEMENT NUMBER	1B. MOD NUMBER	2. TYPE OF AGREEMENT	3. CLASS OF RECIPIENT
R18AC00078	N/A	☐ GRANT ☒ COOPERATIVE AGREEMENT	Non-Profit

4. ISSUING OFFICE	5. RECIPIENT
Bureau of Reclamation Upper Colorado Region 125 South State Street, Room 8100 Salt Lake City, UT 84138-1147	Root and Ratliff Ditch Company P.O. Box 1329 Marcos, CO 81328

DUNS	840932966	County	Montezuma
TAXID	024525413	Congress. District	District 003

6. GRANTS MANAGEMENT SPECIALIST	7. RECIPIENT PROJECT MANAGER
Glen Josephson Bureau of Reclamation Upper Colorado Region, UC 2021 125 S. State Street, Room 8100 Salt Lake City, UT 84138-1147 801-525-3756, gjosephson@usbr.gov	Thomas Weaver, President P.O. Box 1329 Marcos, CO 81328 Phone: 970-799-7833

8. GRANTS OFFICER TECHNICAL REPRESENTATIVE	9A. INITIAL AGREEMENT EFFECTIVE DATE	9B. MODIFICATION EFFECTIVE DATE
Joshua Dunham Bureau of Reclamation 445 West Gunnison Avenue, Suite 221 Grand Junction, CO 81501-5711 970-248-0613, jdunham@usbr.gov	See Block 17a	N/A
	10. COMPLETION DATE May 31, 2020	

11A. PROGRAM STATUTORY AUTHORITY	11B. CFDA Number
Public Law 93-320, Colorado River Basin Salinity Control Act as Amended by Public Law 110-246, Sec. 2806(a)(7)(A)(B)(C)	15.509

12. FUNDING INFORMATION	RECIPIENT SHARE	RECLAMATION SHARE	13. REGISTRATION NUMBER
			20157317
Total Estimated Amount of Agreement	$0.0	$3,600,021.00	14A. ACCOUNTING AND APPROPRIATION DATA
This Obligation	$0.0	$159,906.00	XXXR4081X1 RN20350010001O054 - $159,906.00
Previous Obligation	$0.0	$0.00	
Total Obligation	$0.0	$159,906.00	14B. TREASURY ACCOUNT FUNDING SYMBOL
Cost-Share %	0%	100%	14X4081

15. PROJECT TITLE
Root and Ratliff Pipeline Project

16a. Acceptance of this Assistance Agreement in accordance with the terms and conditions contained herein is hereby made on behalf of the above-named recipient.

BY: Thomas Weaver
DATE: 9-19-18

17a. Award of this Assistance Agreement in accordance with the terms and conditions contained herein is hereby made on behalf of the United States of America, Department of the Interior, Bureau of Reclamation.

BY: Heidi Hansen
DATE: 9/21/18

16b. NAME, TITLE, AND TELEPHONE NUMBER OF SIGNER

☐ Additional signatures are attached

17b. NAME OF GRANTS OFFICER
Heidi Hansen

108°19'30"W 108°19'0"W 108°18'30"W 108°18'0"W 108°17'30"W 108°17'0"W 108°16'30"W 108°16'0"W 108°15'30"W

37°22'0"N 37°21'30"N 37°21'0"N 37°20'30"N 37°20'0"N 37°19'30"N 37°19'0"N 37°18'30"N 37°18'0"N 37°17'30"N 37°17'0"N

184
42
160
160
Mancos
Mancos River
J
H
41
H
G
Root and Ratliff
Point of Diversion
Habitat Replacement Sites
End of Ditch
Weber Canyon

Map Legend

- Ditch Headgate
- Proposed Pipeline
- Ratliff & Root Ditch
- Other Road
- Hwy 160
- Intermittent/Ephemeral
- Perennial Stream
- Habitat Replacement Sites

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SGM
555 RiverGate Ln, Suite B4-82
Durango, CO 81301
970.385.2340
www.sgm-inc.com

Figure 1
Vicinity Map

Date:10/20/2020 | Job No. 2018-391.001 | Map by: RZM | Checked by: DBM | Scale: 1:24,000

Data Sources: Montezuma County GIS, USDA NAIP Aerial Imagery, USGS

File: P:\Project Files\2018-391.001 Ratliff & Root Ditch\H-Dwgs\GIS\MXDs\Wetland Delineation\Fig1VicinityMap.mxd

0 1,700 3,400 Feet

1 inch = 2,000 feet

N