#### **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 Conservation, Land Use Planning **Engagement & Innovation Activities Agricultural Projects Environmental & Recreation Projects**  Anna.Mauss@state.co.us Kevin.Reidy@state.co.us Ben.Wade@state.co.us Alexander.Funk@state.co.us 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 Projec	t Summary
Name of Applicant	North Fork Water Conservation District	
Name of Water Project Paonia Reservo		r Sediment Removal and Utilization
CWP Grant Request Amount		\$337,758
Other Funding Sources Delta Brick & Climate Company		\$ 338,000
Other Funding Sources In Kind		\$13,900
Other Funding Sources		\$
Grantee Funding Contribution		\$1,000
Total Project Cost		\$689,658

#### **Applicant & Grantee Information**

Name of Grantee(s) North Fork Water Conservancy District

**Mailing Address** 

**FEIN** 

**Organization Contact Tom Alvy** 

Position/Title President

Email mcf@wic.net

Phone 970-712-4030

**Grant Management Contact** 

Position/Title

**Email** 

Phone

Name of Applicant

(if different than grantee) Chris Caskey

Mailing Address 1732 Wazee Street #206 Denver, CO 80202

Position/Title founder @ Delta Brick & Climate Company

Email chris@cmcaskey.com

Phone 720-421-2633

## **Description of Grantee/Applicant**

Provide a brief description of the grantee's organization (100 words or less).

The North Fork Water Conservancy District is Located in the North Fork of the Gunnison River in Western Colorado. It was created to manage the Paonia Project, which is located in west-central Colorado and provides full and supplemental irrigation water supplies for 15,300 acres of land in the vicinity of Paonia and Hotchkiss.

Delta Brick & Climate Company (DBCC) is a startup headquartered in Denver with sub-pilot operations in the North Fork of the Gunnison River Valley. DBCC's mission is to utilize nuisance sediment in Paonia Reservoir in the manufacturing of brick and tile. This process will also use waste natural gas venting from North Fork coal mines that would otherwise vent into the atmosphere. Such activity also generates greenhouse gas offsets sellable on cap-and-trade markets.

## Type of Eligible Entity (check one)

	<b>Public (Government):</b> 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.
X	<b>Public (Districts):</b> Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
	Private Incorporated: Mutual ditch companies, homeowners associations, corporations.
	<b>Private Individuals, Partnerships, and Sole Proprietors:</b> Private parties may be eligible for funding.
	<b>Non-governmental organizations (NGO):</b> 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
	Construction
	Identified Projects and Processes (IPP)
X	Other Sediment removal

Cat	egory of W	ater Project (check the primary category that applies and include relevant tasks)
X	recharge, a beneficial p supply and	age - Projects that facilitate the development of additional storage, artificial aquifer nd dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multiprojects and those projects identified in basin implementation plans to address the water demand gap  Exhibit A Task(s): Removal of up to 4 acre feet of sediment from Paonia Reservoir
	for conserv	on and Land Use Planning - Activities and projects that implement long-term strategies ration, land use, and drought planning.  Exhibit A Task(s):
	innovation	nt & Innovation - Activities and projects that support water education, outreach, and efforts. Please fill out the Supplemental Application on the website. Exhibit A Task(s):
		al - Projects that provide technical assistance and improve agricultural efficiency. Exhibit A Task(s):
	recreation.	ntal & Recreation - Projects that promote watershed health, environmental health, and Exhibit A Task(s):
	Other	Explain:

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	Location of Water Project
Please provide the general county and coordinates of the proposed project below in <b>decimal degrees</b> . The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Gunnison
Latitude	107. 34 W
Longitude	38.93 N

#### **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 proposed project targets the removal of modest amounts of sediment from Paonia Reservoir. It follows on a planning project by Delta Brick & Climate Company (DBCC) that was funded by the Innovation and Outreach portion of Colorado's Water Plan in the fall 2018 cycle. The previous funding is being used for planning, permitting, options analysis, and stakeholder outreach related to Paonia Reservoir sediment utilization. The Applicant anticipates that all planning and permitting will be accomplished by the time this award is considered. Stakeholder outreach is ongoing.

The Applicant is the North Fork Water Conservancy District (NFWCD) acting as a pass-through entity. DBCC will contract with NFWCD and manage the work, other subcontracts, and reporting.

The proposed project is part of a larger, for-profit sediment utilization effort wherein DBCC converts the removed sediment into revenue-generating ceramics such as brick and tile. Conversion is accomplished using coal mine methane (CMM) as a fuel. CMM is natural gas venting from active and abandoned coal mines in close proximity to Paonia Reservoir. CMM itself is a problem, as methane is a potent greenhouse gas and climate change is increasing the need for reliable water storage. Thus, the overall project has multiple purposes: to address CMM pollution, restore reservoir storage, improve watershed health, and create rural economic activity.

Paonia Reservoir is located in northwest Gunnison County on Muddy Creek just above its junction with Anthracite Creek, This junction forms the North Fork of the Gunnison River, Paonia Reservoir operates as storage for Fire Mountain Canal, which irrigates 15,300 acres in Delta County.

#### **Measurable Results**

To catalog measurable values as applicable:	results achieved with the CWP Grant funds, please provide any of the following	
4	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)	
	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
	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	
	Other Explain:	

## **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-

Thematically, all state and basin plans and initiatives emphasize multiple stakeholder processes with opportunities for wins in multiple areas (e.g., rural and municipal or environmental and agricultural). The proposed project benefits a large number of stakeholders with a diversity of needs. Paonia Reservoir is owned by the Bureau of Reclamation, operated by an irrigation company, and located in a state park. The reservoir and downstream reaches are used by boaters and anglers. Many private persons own land along the highway and North Fork. This large number of stakeholders makes the project ideal for state support, as no private company would be willing to accept the risk and extended timeline of a stakeholder dialogue process.

This project is also ideal for state funding because it presents wins in multiple areas. Boating and fishing recreation would be enhanced by the restoration of a fish pool in the reservoir. Jobs will be created at the ceramics factory in an area hard-hit by coal layoffs. Coal mine gases, including toxic components, will be mitigated. Finally, irrigation resilience will be enhanced by maintaining the reservoir storage function.

These outcomes align with the Gunnison Basin Implementation Plan whose stated goals include:

- 3. Improve agricultural water supplies to reduce shortages.
- 5. Quantify and protect environmental and recreational water uses.
- 8. Restore, maintain, and modernize critical water infrastructure (ES 4)

The 2010 Statewide Water Supply Initiative (SWSI) recommends that the water community "Recognize the importance of environmental and recreational benefits derived from agricultural water use, storage reservoirs, and other consumptive water uses and water management." (ES 41) This project would highlight such benefits by restoring a fish pool in Paonia Reservoir.

The SWSI further states that climate change is not considered in the 2010 report, but that "Climate change is an important factor for consideration in conjunction with future water demands and should be included in subsequent forecasting efforts." Burning coal mine methane is a clear win for the climate. As the climate continues to change, snowpack melts earlier and evapotranspiration is higher. Thus, storage high in the watershed becomes increasingly important. That is because high storage is above agricultural diversions and serves the same re-timing function as snow, and weather remains relatively cool, limiting evaporation.

The Colorado Climate Plan commits the state to "Reduce statewide greenhouse gas emissions by more than 26 percent from 2005 levels by 2025." (Ex. Sum.) This project could eliminate millions of tons of CO2 equivalent annually. The Plan also commits to "Formalize and expand upon cross-agency actions to provide economic development strategies and other supportive services to communities impacted by the changing energy landscape". (Ex. Sum.)

Colorado's Water Plan states "Colorado must also develop additional storage to meet growing needs and face the changing climate." The Plan has a goal of 400,000 acre feet developed. (Ch 10+11) Because of its climate, water, and economic development aspects, this project provides CWCB an opportunity to align with Colorado Climate Plan goals as it attains Colorado's Water Plan goals. There are over 5.000 acre feet of lost storage available for recovery in Paonia Reservoir.

All public projects should have an educational aspect. This project has already received local press. and the DBCC has enjoyed communicating to the community the challenges of sediment utilization and coal mine methane utilization, as well as the benefits to the community of a successful project. This project functions to bring people together and has received the verbal support of groups as disparate as coal mines, conservationists, a hardware store, and an artist collective. This education will continue, as DBCC has budgeted travel time and mileage to visit stakeholders and engage the community. Delta Brick & Climate Company presented at Colorado Mesa University's Water Center in November, as well as the Engage Delta County energy entrepreneurship Spark Tank in September. DBCC took on a Master's Student at Western Colorado University as an intern. DBCC will find similar opportunities to educate the public during the lifetime of the grant.

Overall, the project Paonia Reservoir Sediment Removal and Utilization is a good fit for the Colorado's Water Plan funding because it provides numerous stakeholders with positive impacts across agricultural, recreational, environmental, and economic areas.

#### **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.

North Fork of the Gunnison Environmental and Recreational Needs Assessment Western Slope Conservation Center 2018

Paonia Reservoir Sediment Sampling and Testing Summary – 2016

Paonia Project, CO – Western Colorado Area Office Upper Colorado Region, US Bureau of Reclamation

Report No. SRH-2018-04

Paonia Reservoir Sediment Management Planning Alternatives

Paonia Project, CO - Western Colorado Area Office Upper Colorado Region, US Bureau of

Reclamation

Report No. SRH-2018-05

## **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.

The North Fork Conservation District has received XXX Tom, can you add here?

Delta Brick & Climate Company has received \$19,000 from CWCB through the Water Plan Grant approved at the November 2018 State Board meeting. The contract is not yet finalized. DBCC has a WSRF basin-only grant request coming before the state board at the March 2019 meeting. It was approved for \$18,000 by the Gunnison Basin Roundtable at the January 2019 meeting.

#### **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.

The North Fork Water Conservancy District has Disbursed

Submittal Checklist
I acknowledge the Grantee will be able to contract with CWCB using the <u>Standard Contract</u> .
Exhibit A
Statement of Work <sup>(1)</sup>
Budget & Schedule <sup>(1)</sup>
Engineer's statement of probable cost (projects over \$100,000)
Letters of Matching and/or Pending 3 <sup>rd</sup> Party Commitments <sup>(1)</sup>
Exhibit C
Map (if applicable) <sup>(1)</sup> see <a href="https://caltopo.com/m/0Q1F">https://caltopo.com/m/0Q1F</a> .
Photos/Drawings/Reports
Letters of Support (Optional)
Certificate of Insurance (General, Auto, & Workers' Comp.) (2)
Certificate of Good Standing with Colorado Secretary of State <sup>(2)</sup>
W-9 <sup>(2)</sup>
Independent Contractor Form <sup>(2)</sup> (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY
Engagement & Innovation Supplemental Application <sup>(1)</sup>

<sup>(1)</sup> Required with application.

<sup>(2)</sup> Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.

#### Colorado Water Conservation Board

#### Water Plan Grant - Exhibit A

Statement Of Work	
Date:	
Name of Grantee:	North Fork Water Conservation District
Name of Water Project:	Paonia Reservoir Sediment Removal and Utilization
Funding Source:	Water Storage
Maria Davis do Caralla	

#### **Water Project Overview:**

The proposed project targets the removal of modest amounts of sediment from Paonia Reservoir. It follows on a planning project by Delta Brick & Climate Company that was funded by the Innovation and Outreach portion of Colorado's Water Plan in the fall 2018 cycle. The previous funding is being used for planning, permitting, options analysis, and stakeholder outreach related to Paonia Reservoir sediment utilization. The Applicant anticipates that all planning and permitting will be accomplished by the time this award is considered. Stakeholder outreach is ongoing.

The Applicant is the North Fork Water Conservancy District acting as a pass-through entity. Delta Brick & Climate Company will contract with NFWCD and manage the work, other subcontracts, and reporting.

The proposed project is part of a larger, for-profit sediment utilization effort wherein the Applicant's subcontractor converts the removed sediment into revenue-generating ceramics such as brick and tile. Conversion is accomplished using coal mine methane as a fuel. Coal mine methane (CMM) is natural gas venting from active and abandoned coal mines in close proximity to Paonia Reservoir. CMM itself is a problem, as methane is a potent greenhouse gas and climate change is increasing the need for reliable water storage. Thus, the overall project has multiple purposes: to address CMM pollution, restore reservoir storage, improve watershed health, and create economic activity.

Paonia Reservoir is located in northwest Gunnison County on Muddy Creek just above its junction with Anthracite Creek. This junction forms the North Fork of the Gunnison River. Paonia Reservoir operates as storage for Fire Mountain Canal, which irrigates 15,300 acres in Delta County.

#### **Project Objectives:**

Remove up to 4 acre feet of sediment from Paonia Reservoir. Deliver this sediment to Delta Brick & Climate Company's factory.
Tasks
Task 1 - [Establish Subcontract]
Description of Task:
The North Fork Water Conservancy District (NFWCD) is the applicant for this grant and will act as a pass-through entity. NFWCD will contract Delta Brick & Climate Company (DBCC) to oversee the grant. DBCC will pay their attorneys to write a contract (cash match). Both DBCC and NFWCD will provide a few hours of inkind effort to put the contract in place.
Method/Procedure:
A brief task with 8 hours of in-kind effort and 8 hours of lawyer effert.
Deliverable:

Last Updated: November 2018
An executed subcontract and summary in project reports.
The one can be a can be a can be a constant.
Tasks
Task 2 - [Access Improvements]
Description of Task:
This task provides \$10,000 to improve access to the sediment in Paonia Reservoir. \$1000 of this is provided as a cash match by NFWCD.
Delta Brick & Climate Company has already started on the permitting process for road improvements, and offers any remaining permitting work as in kind match.
Method/Procedure:
The improvements will be made on an old road grade connecting highway 133 to the reservoir bottom (See map and photos). The work will be subcontracted to a road-grading contractor. Many small trees must be removed, and a two-foot eroded ledge must be graded. Some funds may be spent to prevent excavating equipment from sinking in the mud.
Stakeholders include Colorado Department of Transportation, US Bureau of Reclamation, Paonia State Park, and Fire Mountain Canal & Reservoir Company. With the exception of CDOT, all parties have already been contacted. There has been a cultural resources inventory of this site, with no concerns found.

Deliverable:
An accessible road and summary in project reports.
Tasks
Task 3 - [Sediment Removal]
Description of Task:
Excavating sediment, transporting it to DBCC's factory, piling it there.
Method/Procedure:
Excavation contractors will be subcontracted to remove sediment from Paonia Reservoir during low water and pile as much as DBCC thinks they can process that year. This is an increasing quantity each year, and the expected per-yard cost also increases. In 2019, we estimate costs of \$30 per yard to excavate, and \$10 per
yard to transport. This is expect to increase by 5% per year. This is intended to be an overestimate, and costs may fall as scale increases.
Deliverable:

Big piles of mud at Delta Brick & Climate's factory! A hole in the reservoir sediment! A progress report!
Tasks
Task 4 - [Sediment Processing]
Description of Task:
This task is undertaken as part of Delta Brick & Climate Company's business efforts. In task 3, sediment is dropped off at DBCC's facility. In Task 4, DBCC will process that sediment into value-added projects.
DBCC will purchase a kiln (\$330,000) as a cash match.
Duce will purchase a killi (\$350,000) as a cash match.
Method/Procedure:
Codiment was coosing involves blanding univing and shaning metavial (called outmiding). After outmiding
Sediment processing involves blending, mixing, and shaping material (called extruding). After extruding, products are dried and fired. These tasks are part of DBCC's normal operations and are not explicitly part of
this project.
DBCC's cash match is the purchase of a large kiln capable of processing large amounts of sediment. Tasks 3
and 4 are the essence of this request. If the state will fund a steady, five year supply of sediment, Delta Brick &
Climate Company's investors will buy the equipment to process it.
Deliverable:

Tasks					
Task 5 - [Overhead & Project Management]					
Description of Task:					
Overhead is priced as 10% of tasks 1, 2, and 3.					
Method/Procedure:					
Project reporting will be handled by Delta Brick & Climate and approved by the North Fork Water Conservancy District.					
Personnel time for reporting is included as an in kind match from both DBCC and NFWCD.					
Any technical sediment and product characterization will be performed by the National Brick Research Center and paid for by DBCC as an in kind match.					
Deliverable:					

Hundreds of cubic yards of sediment turned into brick, tile, pavers, and other ceramics. This will be described

Last Updated: November 2018

in project reports.

Last Updated: November 2018
Project reports, successful subcontracts, and a well-managed grant.

## 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.

## **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.



# **Colorado Water Conservation Board**

# Water Plan Grant - Exhibit B Budget and Schedule

Date:

Name of Applicant: Delta Brick & Climate Company

Name of Water Project: Paonia Reservoir Sediment Removal and Utilization

Project Start Date: July 1, 2019
Project End Date: October 30, 2024

Task No.	Task Description	Task Start Date	Task End Date	Grant Funding Request	Match Cash	Match In-Kind	Total
1	Establish Subcontract	July 2019	July 2019		2000	\$800	\$2,800
2	Reservoir Access Improvements	August 2019	August 2019	\$9,000	\$1,000	\$1,500	\$10,000
3	Sediment Removal	September 2019	September 2024	\$297,279			\$297,279
4	Sediment Processing	September 2019	September 2024		\$330,000		\$330,000
5	Project Management	July 2019	October 2024	\$31,158	\$5,000	\$11,600	\$36,158
	Other Direct Costs			\$321			\$321
			Total	\$337,758	\$338,000	\$13,900	\$689,658

Page 1 of 2

Christopher Caskey Delta Brick & Climate Company 1732 Wazee Street Suite 206 Denver, CO 80202

Colorado Water Conservation Board Water Plan Grant Administors 1313 Sherman Street Denver, CO 80202

Dear Grant Administrators,

I am pleased to be a part of the Paonia Reservoir Sediment Removal and Utilization implementation project. In addition to work in kind and a bit of money for legal work, I am pleased to commit to raising \$330,000 to purchase a kiln in which to fire bricks. In this application, the North Fork Water Conservancy District and I request excavation of about four acre feet of sediment, which will be enough to feed my factory for about five years. I have purchased portions of this factory, and I believe my investors will be incentivised by the awarding of this grant to invest and purchase the rest. I commit to raising and spending these funds.

Best Regards,

Christopher Caskey