COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Last Updated: May 2021

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 & Supply 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
Water Sharing & ATM 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	Boulder County Community Planning & Permitting Department
Name of Water Project	Boulder County Fluvial Hazards Integration Study

CWP Grant Request Amount	$ 30,000.00
Other Funding Sources	$ N/A
Other Funding Sources	$ N/A
Other Funding Sources	$ N/A
Applicant Funding Contribution	$ 9,950 ($5,000.00 cash + $4,950.00 in-kind)
Total Project Cost	$ 39,950.00

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Applicant & Grantee Information	
Name of Grantee(s)	Boulder County Community Planning & Permitting Department
Mailing Address	2045 13th St., Boulder CO 80304
FEIN	84-6000748
Organization Contact	Dale Case
Position/Title	Director, Community Planning & Permitting Department
Email	dcase@bouldercounty.org
Phone	720-564-2604
Grant Management Contact	Virginia Gazzetti
Position/Title	Floodplain Program Planner
Email	vgazzetti@bouldercounty.org
Phone	720-798-3625
Name of Applicant (if different than grantee)	N/A
Mailing Address	N/A
Position/Title	N/A
Email	N/A
Phone	N/A

Description of Grantee/Applicant
Provide a brief description of the grantee's organization (100 words or less).
The Boulder County Community Planning & Permitting Department is responsible for long-range planning, zoning enforcement, development review, permitting and licensing, wildfire mitigation, and floodplain management within unincorporated Boulder County. This project will be executed through the department's Floodplain Management Program, responsible for managing 11,000 acres of regulatory floodplain, over 60% of which is used for open space and agriculture. Management includes regulating development to preserve floodplain function and ecological integrity, and to mitigate flood risk to county residents, property, and infrastructure through permitting and planning. The program plays an important role in short and long-term planning for flood-related hazards.

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Type of Eligible Entity (check one)	
X	**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.
	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)	
X	Study
	Construction
	Other

Category of Water Project (check the primary category that applies and include relevant tasks)		
	Water Storage & Supply - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity, multi-beneficial projects, water sharing agreements, Alternative Transfer Methods, and those projects identified in basin implementation plans to address the water supply and demand gap. *Applicable Exhibit A Task(s):* ***Note:*** *For Water Sharing Agreements or ATM Projects - please include the supplemental application available on the CWCB's website.*	
X	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, water efficiency, and drought planning. *Applicable Exhibit A Task(s): Task 1, Task 2*	
	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. *Applicable Exhibit A Task(s):*	
	Agricultural - Projects that provide technical assistance and improve agricultural efficiency. *Applicable Exhibit* *A Task(s):*	
	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. *Applicable 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 **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Boulder County: Left Hand Creek, St. Vrain Creek, and Boulder Creek, and portions of South Boulder Creek, Six Mile Creek, South St. Vrain Creek, and North St. Vrain Creek.
Latitude	N/A
Longitude	N/A

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.
Facing a changing climate, Boulder County is committed to developing policies, systems, and programs to reduce the impacts of major flooding. The county recently completed a pilot study to evaluate the eligibility of Boulder County residents for FEMA Flood Mitigation Assistance grant funding to mitigate their homes against flooding though elevation, relocation, or buyout. A critical finding from this study was that erosion and sedimentation hazards must be quantified to demonstrate funding eligibility, but the county currently lacks a way to do this. The county participated in CWCB's Fluvial Hazard Zone (FHZ) pilot and has FHZ delineations for its most mobile creeks. This grant will leverage those outputs to improve community flood resilience. First, we will use the relative elevation models developed through the FHZ process to develop more granular maps of where erosion and sedimentation hazards are greatest within the FHZ. These will be overlaid with critical water infrastructure, buildings and roads to improve communication of risk and prioritize adaptations. Second, we will develop a two-pronged outreach strategy, including county-specific educational materials to communicate risk, and outreach to FEMA to improve the FMA evaluation process. This project will improve community flood resilience and address regulatory barriers to adaptation.

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)
	Efficiency Savings (indicate acre-feet/year OR dollars/year)

	Area of Restored or Preserved Habitat (acres)	
	Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement	
	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
	Number of Coloradans Impacted by Engagement Activity	
66.5 miles	Other	Explain: Length of Stream for which preliminary fluvial hazard mapping exists in Boulder County. This project will improve planning strategies that will preserve floodplain form and function along these reaches while improving the county's ability to plan for and mitigate flood hazards.

Water Project Justification

Provide a description of how this water project supports the goals of Colorado's Water Plan, the Analysis and Technical Update to the Water Plan, 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;)

Climate change is projected to increase the frequency and intensity of rainfall events and, by extension, flood risk. Addressing the statewide exposure to exacerbated flood risk due to erosive hazards will improve the resilience of Colorado's communities to both current and future climate conditions.

The proposed project aligns with the goals of the Colorado Water Plan (CWP); the Critical Action Plan for the CWP; and the South Platte Basin Implementation Plan, as follows.

Section 7.2 of the Colorado Water Plan summarizes the State's desire "to support drought, flood, and wildfire-preparedness and response programs." Included in these goals are the desire to "build communities that are more resilient to natural disasters" and to "address regulatory barriers to climate preparedness and adaptation." The proposed project directly addresses all of these goals. Specifically, extreme rainfall in Boulder County is expected to increase in the future (REF) and increased wildfire activity will exacerbate these future rainfall extremes to create more extreme flooding. In the face of these ongoing climatic changes, Boulder County seeks to ensure that its water and other infrastructure are resilient to future disasters. However, through its existing flood mitigation assistance pilots, the County has demonstrated that current FEMA and other regulatory frameworks create barriers to meeting these goals. By leveraging this pilot project to improve understanding of the spatial extent and severity of fluvial hazard zones, the County seeks to implement programs that can improve preparedness and climate resilience.

Section I of the Colorado Water Plan's Critical Action Plan describes how Colorado "promotes water resource resilience from natural disasters through strategic preparedness and response." It also describes the need to "Respond to, monitor, and prepare for climate change." The following critical actions are identified:

- Implement the actions identified in the Colorado Resiliency Framework to build communities that are more resilient to natural disasters.
- Work on creating resilient watersheds to protect, restore, and enhance water quality in the face of climate change.

Multiple strategies in the Colorado Resiliency Framework are directly aligned with the goals of this project. Specifically, Goal **CN1**: Align Climate Change Data, Metrics & Standards and Goal BI4: Ensure Climate-Resilient Critical Infrastructure

Section 1.9 of the South Platte Basin Implementation Plan highlights the need to "maintain or improve watershed health through source water protection, wildfire mitigation, sedimentation control and erosion control." By improving understanding of where active channel migration zones are likely to occur, Boulder County can take steps to control erosion and sedimentation within its watersheds and improve watershed health for downstream uses.

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.

This project is complementary to CWCB's Colorado Fluvial Hazard Zone Mapping Program: https://www.coloradofhz.com/, which is part of the larger Colorado Hazard Mapping Program.

The proposed project leverages and builds on an ongoing suite of CWCB studies to map and delineate fluvial hazard zones across key watersheds in Colorado (CWCB, 2020). Specifically, the Colorado Fluvial Hazard Zone (FHZ) Delineation Protocol aims to help communities "adaptively manage stream corridors, prepare for and mitigate flood impacts, and make informed land use decisions based on an awareness of fluvial processes."

CWCB has completed FHZ mapping for 66.5 miles of major creeks in Boulder County. This project will use intermediate products from the FHZ mapping protocol to generate value added products that can help the County integrate knowledge of FHZs into its community planning and permitting processes.

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.

Following the 2013 flood, Boulder County partnered with CWCB and other stakeholders to establish the Comprehensive Creek Planning Initiative to develop post-flood watershed-level master plans impacted by the flood. Each of the master plans listed below identify priority projects to restore and create more resilient watersheds in the face of climate change, increasing population, and water quality and quantity demands. The Boulder County Board of County Commissioners adopted the five watershed master plans in 2015.

Comprehensive Creek Planning Watershed Master Plans:
- Fourmile Creek Watershed Master Plan
- Left Hand Creek Watershed Master Plan
- Little Thompson River Master Plan
- St. Vrain Creek Master Plan
- Upper Coal Creek Master Plan

Additional information pertaining to these watershed master plans can be found on the Comprehensive Creek Planning webpage at: https://www.bouldercounty.org/disasters/flood/creek-restoration/historyand-background/

Since the completion of these watershed master plans, Boulder County has transitioned their Comprehensive Creek Planning Initiative to the Creek Recovery and Restoration Program (CRR). This program continues this recovery work by pursuing funding for restoration projects, overseeing the implementation of projects and coordinating with stakeholders and residents within the region. Several stream restoration projects are complete or are in progress on Boulder County Parks and Open Space property and for areas where reconstruction of flood-damaged county roads has occurred.

Boulder County Public Works Department restoration and recovery projects:
- North St. Vain Creek
- James Creek
- Fourmile Canyon Creek
- Upper Fourmile Creek
- Lower Fourmile Creek
- Gold Run

Boulder County Parks and Open Space Department restoration and recovery projects:
- South St. Vrain Creek
- St. Vrain Creek Restoration – US 36 to Airport Rd
- Beilins-Hock
- Brewbaker
- Geer Creek

Additional information pertaining to these projects can be found on the Creek Recovery and Restoration Program webpage at: https://www.bouldercounty.org/disasters/flood/creek-restoration/

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.

No relevant issues.

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

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

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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?

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.

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Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work	
Date:	July 1, 2021
Name of Grantee:	Boulder County Community Planning and Permitting
Name of Water Project:	Fluvial Hazard Zone Integration Study
Funding Source:	Colorado Water Plan Grants

Water Project Overview:

Boulder County experienced first-hand the devastating impacts of the 2013 floods. Roads and bridges were destroyed, homes were lost, and many pieces of critical water infrastructure including irrigation ditches, water intakes, and diversion structures were damaged. A significant amount of damage resulted not from inundation, but from fluvial hazards (channel avulsion, erosion, deposition of sediment and debris).

Climate change models indicate that severe floods are likely to become more frequent. In response, Boulder County continually seeks opportunities to build resilience to future floods and maintain healthy, functional floodplains. This Water Plan grant application aims to leverage two recent county efforts in order to develop maps, policies, and mitigation strategies for fluvial hazards.

The two efforts that Boulder County seeks to leverage are as follows: First, the county recently completed a pilot study funded by a FEMA Flood Mitigation Assistance grant to evaluate the feasibility of leveraging FEMA funding to elevate or acquire and demolish structures in flood hazard zones. This pilot study found that virtually none of the targeted properties in Boulder County floodplains could meet the strict benefit cost analysis (BCA) criteria FEMA requires for assistance. One reason for this was that the FEMA BCA tools do not account for damage from fluvial hazards. The county is therefore motivated to develop fluvial hazard planning tools that can inform alternate approaches to BCA, which will allow residents at risk from fluvial hazards to secure mitigation funding.

The second effort is the county's participation in the Colorado Water Conservation Board's Fluvial Hazard Mapping Program. The county now has access to fluvial hazard zone (FHZ) delineations for its major rivers and streams. With the benefit of FHZ spatial data, policy guidance, and model ordinance from the Colorado Water Conservation Board, the county has an opportunity to create actionable FHZ planning tools to 1) inform development reviews so that future development may avoid fluvial hazards, 2) identify infrastructure and properties that are vulnerable to fluvial hazards, and 3) communicate the risks associated with fluvial hazards to the public.

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Project Objectives:
The main objectives of this pilot study are: 1) to improve the use of FHZ mapping outputs to inform specific community adaptation and resilience actions; 2) to develop materials that better communicate erosion and sedimentation risks to homeowners, water providers, and planning departments; and 3) to work towards a quantifiable FHZ risk framework that can be integrated into FEMA benefit cost tools. From this pilot study, the hope is that other communities in Colorado can leverage the outputs from their own FHZ mapping protocol to develop more actionable planning tools to improve resilience across the state. Finally, we hope that this project may serve as another example of how communities can use fluvial hazard data for development and natural hazard planning purposes.

Tasks
Task 1 – Leverage FHZ Mapping Outputs to Improve Hazard Delineation
Description of Task:
The goal of this task is to make FHZ mapping outputs more actionable for community planning and decision-making. This task will have three parts: 1) use the relative elevation model developed as part of the FHZ study to develop maps of relative risk within the FHZ; 2) overlay these more granular risk maps with community assets; and 3) evaluate mitigation options for assets most at risk. As these tasks relate to delineating erosion and sedimentation hazards and improving watershed health, they are most closely aligned with the Environment and Recreation category of Water Projects.
Method/Procedure:
As part of the FHZ mapping protocol, a relative elevation model is developed that shows the depth of active and paleo-channels within the fluvial hazard zone. We will use these relative depth maps to develop semi-quantitative maps of erosion hazard risk within the FHZ, following Aggett et al., 2009 (see Figure 1.A). While these maps can provide quantitative estimates of stream power or shear stress, they will be equally useful for planning if they are categorized by zones of high, medium, and low relative erosion risk within the FHZ. To do this, we will combine estimates of erosive power with maps of geologic substrate, to refine estimates of erosion risk based on whether the channels are crossing bedrock or alluvium. Once the analysis of relative risk is complete, we will overlay the resulting maps with geospatial data from Boulder County illustrating critical water infrastructure, roads and bridges, buildings, and other assets to examine what assets are most at risk. Finally, we will use these maps to evaluate mitigation options for those assets. Sources: 1.A) CWCB, 2020. 2020 FHZ Mapping Protocol: https://drive.google.com/drive/folders/1vC8uQK6LnMczpBH0baW2gPKxwrRSpWZk?usp=sharing. Published: https://www.coloradofhz.com/resources 1.B) Aggett, G.R. and Wilson, J.P., 2009. Creating and coupling a high-resolution DTM with a 1-D hydraulic model in a GIS for scenario-based assessment of avulsion hazard in a gravel-bed river. Geomorphology, 113(1-2), pp.21-34.

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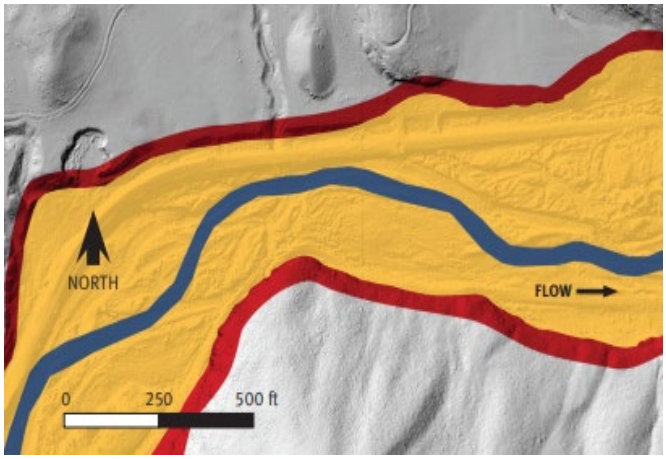

Figure 1.A. FHZ Delineation Output.
FHZ delineation outputs showing FHZ overlay with additional topographic detail within the FHZ overlay district.

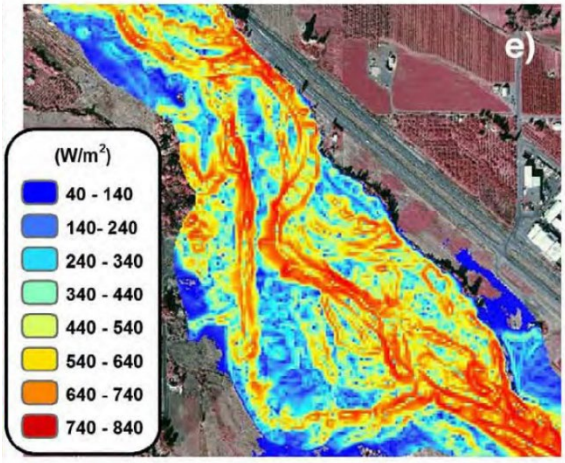

Figure 2.B. FHZ Delineation Output.
Maps of stream power developed from Lidar data illustrating how differences in channel depth translate into gradients in erosive power within the FHZ.

Deliverable:

The final products from Task 1 will include County-specific maps of relative erosion risk within the FHZ; a catalogue of assets that should be targeted for further evaluation; and a list of mitigation actions that can be undertaken for these assets to improve community resilience. In addition, we will provide a memorandum summarizing our methodologies, that can complement and augment the FHZ products that are already being made available to other communities through the FHZ delineation pilot studies. Combined, the County-specific products and more general methodologies can be used to add value to existing FHZ work and aid with community resilience planning in other parts of Colorado.

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Tasks
Task 2 – Integrate FHZ Results into Community Planning and Resilience
Description of Task:
The purpose of this task is to mainstream the FHZ mapping outcomes into community planning and resilience. This component will have two complementary goals. First, we will use the outcomes from Task 1 to develop educational materials so that the community will better understand both the risks that are present within the FHZ, and the reason that those risks are not equally distributed within the FHZ. We will simultaneously use the outcomes from Task 1 to work with FEMA to incorporate erosion and sedimentation risks into their benefit cost analysis tools, in an effort to begin removing regulatory barriers to flood risk mitigation and adaptation.
Method/Procedure:
Using the relative erosion hazard outputs from Task 1, Boulder County will develop county-specific educational materials such as website content, brochures, and other materials that will explain what fluvial hazards are, and the steps that can be taken to mitigate those hazards. These materials will be designed to be complementary to those materials that are already present on the Colorado FHZ mapping site, with specific application to Boulder County. For example, we will look for ways to modify the FHZ overlay district model ordinance to translate the more granular representation of erosion risks derived from Task 1 into specific types of permitted uses within the FHZ, rather than treating the entire FHZ uniformly. At the same time, we will work with FEMA to incorporate probabilistic representations of erosion risk into its BCA framework. This will also leverage the outcomes from Task 1 by translating the relative hazards within the FHZ into damage probabilities, that can be used to calculate expected annual damages from flooding. We have already had preliminary conversations with DHSEM and FEMA within the state of Colorado, and FEMA Region 8 representatives are in the process of connecting us to FEMA Headquarters to facilitate these conversations. Throughout Task 2, we will incorporate ongoing work from other states where erosion and sedimentation hazards are a concern, and evaluate what elements of those states' programs could improve the FHZ program for Colorado. In particular, the states of Vermont and Washington each have fluvial environments similar to those in Colorado, and have mature FHZ programs that could be leveraged for additional insights.
Deliverable:
The final products from Task 2 will include outreach materials that highlight the specific risks posed within different parts of the FHZ, as well as examples of community-specific outreach materials that can further leverage the existing Colorado FHZ protocol. Working with FEMA, we will also take steps to improve the BCA tools that are currently used to prioritize FMA assistance grants. While we do not anticipate that a new BCA framework will be finalized under this grant, we will prepare a memorandum summarizing progress to date at the conclusion of this project.

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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 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 C. 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

Colorado Water Conservation Board

Water Plan Grant - Exhibit C
Budget and Schedule

Prepared Date: June 30, 2021

Name of Applicant: Boulder County Community Planning and Permitting

Name of Water Project: Boulder County Fluvial Hazards Planning Pilot Study

Project Start Date: October 1, 2021

Project End Date: July 1, 2022

Task No.	Task Description	Task Start Date	Task End Date	Grant Funding Request	Match Funding	Total
1	Leverage FHZ Maping Outputs to Improve Hazard Delineation	October 1, 2021	January 15, 2022	$ 21,000.00	$ 2,398.20	$ 23,398.20
2	Integrate FHZ Results into Community Planni	January 1, 2022	July 1, 2022	$ 9,000.00	$ 7,541.90	$ 16,541.90
						$ -
						$ -
						$ -
						$ -
						$ -
						$ -
						$ -
						$ -
						$ -
						$ -
						$ -
			Total	$30,000	$9,940	$39,940.10

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Water Plan Grant - Detailed Budget Estimate
Fair and Reasonable Estimate

Prepared Date: 6/30/2021
Name of Applicant: Boulder County
Name of Water Project: Boulder County Fluvial Hazards Planning Pilot Study

EXAMPLE A: Study or Project Coordination

Item	Rate	Hours	Sub-total

Task 1 - Leverage FHZ Maping Outputs to Improve Hazard Delineation

Item	Hourly Rate	# Hours	Sub-total
Senior Scientist	$ 190.00	40	$ 7,600.00
GIS Specialist	$ 100.00	90	$ 9,000.00
Water Resources Engineer	$ 110.00	40	$ 4,400.00
BoCo Staff	$ 44.91	20	$ 898.20
Task 1 Subtotal			**$ 21,898.20**

Direct Costs

Item Cost	Item Quantity	Sub-total

Total	CWCB Funds	In-kind staff contribution	Matching Funds (Cash)
$ 7,600.00			
$ 9,000.00			
$ 4,400.00			
	$ 21,000.00	$ 898.20	$ 1,500.00
$ 21,000.00			

Task 2 - Integrate FHZ Results into Community Planning and Resilience

Item	Hourly Rate	# Hours	Sub-total
Senior Scientist	$ 190.00	20	$ 3,800.00
GIS Specialist	$ 100.00	30	$ 3,000.00
Water Resources Engineer	$ 110.00	20	$ 2,200.00
BoCo Staff	$ 44.91	90	$ 4,041.90
Task 2 Subtotal			**$ 13,041.90**

Item Cost	Item Quantity	Sub-total

Total	CWCB Funds	In-kind staff contribution	Matching Funds (Cash)
$ 3,800.00			
$ 3,000.00			
$ 2,200.00			
	$ 9,000.00	$ 4,041.90	$ 3,500.00
$ 9,000.00			

TOTAL

OVERALL TOTAL						**$ 39,940.10**	**$ 30,000.00**	**$ 4,940.10**	**$ 5,000.00**

Other Direct Costs

Item:		Copies & Printing (Color)	Materials and Final Report Production	Lodging and Meals	Travel Expenses (Airfare and Car Rental)	Mileage	Total
Units:		No.	Lump Sum	Per Diem	Lump Sum	Miles	
Total Units:	0	0	0	0	0	0	
Total Cost:	$0	$0	$0	$0	$0	$0	**$0**

Boulder County

Community Planning & Permitting

Courthouse Annex • 2045 13th Street • Boulder, Colorado 80302 • Tel: 303-441-3930
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July 1, 2021

Mr. Kevin Reidy
Colorado Water Conservation Board
Department of Natural Resources
1313 Sherman Street, Room 718
Denver, CO 80303

Dear Mr. Reidy,

This letter confirms the matching funds that the Boulder County Community Planning & Permitting Department will provide in support of our Water Plan Grant Application, "Boulder County Fluvial Hazard Integration Study." The county has committed to providing $5,000 in direct cash funding and $5,000 in the form of in-kind county staff hours.

One of the county's strategic priorities is to develop policies, systems, and programs that build community resilience to flooding. This project will help the Community Planning & Permitting Department integrate the Colorado Water Conservation Board's Fluvial Hazard Mapping products into its development review, planning, and hazard mitigation strategies. Thank you for your consideration.

Sincerely,

Dale Case
Director, Boulder County Community Planning & Permitting Department