COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Colorado State University
Name of Water Project	Project-01868 Expanding Residential Rain Garden Installations
Grant Request Amount	**$180,600.00**
Primary Category	$180,600.00
Engagement & Innovation Activities	
Total Applicant Match	**$60,200.00**
Applicant Cash Match	$50,200.00
Applicant In-Kind Match	$10,000.00
Total Other Sources of Funding	**$60,200.00**
Northern Water	$15,000.00
Mile High Flood District	$5,600.00
Centennial Water & Sanitation District	$5,600.00
City of Fort Collins Nature in the City Department	$10,000.00
City of Greeley	$14,000.00
Colorado State University	$10,000.00
Total Project Cost	**$301,000.00**

Applicant & Grantee Information

Name of Grantee: Colorado State University
Mailing Address: 2002 Campus Delivery Fort Collins CO 80523
FEIN: 846,000,545

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Grant Management Contact - Alternate: Jennifer Alvarez
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Description of Grantee/Applicant

No description provided

Type of Eligible Entity

- [x] Public (Government)
- [ ] Public (District)
- [ ] Public (Municipality)
- [ ] Ditch Company
- [ ] Private Incorporated
- [ ] Private Individual, Partnership, or Sole Proprietor
- [ ] Non-governmental Organization
- [ ] Covered Entity
- [ ] Other

Category of Water Project

- [ ] Agricultural Projects
  Developing communications materials that specifically work with and educate the agricultural community on headwater restoration, identifying the state of the science of this type of work to assist agricultural users among others.
- [ ] Conservation & Land Use Planning
  Activities and projects that implement long-term strategies for conservation, land use, and drought planning.
- [x] Engagement & Innovation Activities
  Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website.
- [ ] Watershed Restoration & Recreation
  Projects that promote watershed health, environmental health, and recreation.
- [ ] Water Storage & Supply
  Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.

Location of Water Project

Latitude	40.573400
Longitude	-105.086500
Lat Long Flag	Default/Proponent headquarters: If the location cannot be defined with flags above, use location of project proponent headquarters
Water Source	South Platte River
Basins	South Platte; Metro
Counties	Larimer; Boulder; Jefferson; Denver; Douglas; Weld
Districts	1-South Platte: Greeley to Balzac; 23-Upper South Platte; 2-South Platte: Denver Gage to Greeley

Water Project Overview

Major Water Use Type	Education
Subcategory	Education
Scheduled Start Date - Design	3/1/2022
Scheduled Start Date - Construction	
Description	

Colorado communities are facing unprecedented pressure on dwindling water resources due to factors such as climate change (increased drought conditions) and dramatic rises in population. These factors are resulting in increased water demand for outdoor irrigation. Implementing more efficient ways to irrigate landscapes while preserving the beauty of vegetated spaces is becoming more important than ever in our state. One way this can be accomplished is by exploring opportunities to retain and use stormwater onsite for outdoor irrigation thereby reducing the amount of drinking water being utilized on landscapes. Rain gardens are an efficient and aesthetically pleasing mechanism for communities to conserve water, enhance green space, reduce stormwater, and protect water quality. Unfortunately, rain gardens are not being widely installed at the residential scale due to several barriers including lack of rain garden resources, trained installation professionals, demonstration sites, and bilingual resources. This project addresses these issues by creating bilingual educational materials, bilingual Certified Residential Rain Garden Installer Training, and planting 19 rain garden demonstration sites across the Front Range. This project will provide the vital education and outreach needed to expand the installation of residential rain gardens across Colorado and protect our water resources.

Measurable Results

0	New Storage Created (acre-feet)
0	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
0	Existing Storage Preserved or Enhanced (acre-feet)
0	New Storage Created (acre-feet)
0	Length of Stream Restored or Protected (linear feet)
	Efficiency Savings (dollars/year)
	Efficiency Savings (acre-feet/year)
0	Area of Restored or Preserved Habitat (acres)
0	Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement (acre-feet)
19	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
400	Number of Coloradans Impacted by Engagement Activity

Water Project Justification

This project achieves the education, outreach, and public engagement measurable objectives in the Colorado Water Plan by creating educational materials that can be used by homeowners and water providers state-wide to increase public awareness of the benefits associated with rain gardens including water conservation and water quality protection. Installing demonstration gardens in a variety of sites across the Front Range will enable homeowners to see and potentially visit examples of thriving gardens located right in their own neighborhoods. By emphasizing language justice and translating the educational materials into Spanish, the project broadens access to this content with the goal of increasing installation of rain gardens through inclusion of our diverse Spanish speaking communities.

Partnering communities will be encouraged to develop and implement surveys for tracking water awareness, specifically regarding rain gardens, in their communities before and after the project concludes.

The Colorado Water Plan’s conservation goals will be addressed in this project by implementing rain gardens as a “long-term water efficient strategy to meet local and statewide water needs that are cost-effective and promote a water efficiency ethic throughout Colorado” (Colorado Water Plan_ Critical Action Plan, Chapter 10:3 Critical Goals and Actions pg. 10-9).

“Fit-for-purpose” use of water is a central tenant to One Water principles which emphasize using the right source of water for the most appropriate purpose. Ongoing research and a growing body of evidence describes the

benefits of using stormwater locally for non-potable uses such as outdoor landscape irrigation. An additional benefit of local stormwater capture and use is a reduction on potable water demand, allowing water providers to use our state's limited and diminishing water resources more effectively. Rain gardens provide citizens a unique opportunity to improve their community ethics and maintain vibrant green spaces while conserving water and reducing treatment loads.

This project will address the Municipal Water Conservation, Reuse and Efficiency Goal and Water Quality Goal in the South Platt Basin Implementation Plan.
1. The Municipal Water Conservation, Reuse and Efficiency Goal is to "Continue the South Platte River Basin's leadership in water wise use" (South Platt Basin Implementation Plan pg. 1-26). This project will be working with a variety of municipalities in the Basin to "distribute and encourage adoption of 'best management practices' as "guidelines" via the training course certification and associated materials published on the Colorado Stormwater Center's website. The information gathered from this project will allow the Center to expand its resource portfolio and enhance training opportunities offered to municipalities that support the goals of promoting water efficiency and reuse.

2. The Water Quality Goal is to "Maintain, enhance, and proactively manage water quality for all use classifications" (South Platt Basin Implementation Plan pg. 1-27). The implementation of rain gardens provides a means to proactively manage the quality of water leaving residential homes. Additionally, the South Platt Implementation Plan lists the Measurable Outcome of "Monitor, protect, and improve watershed water quality and identify and document progress and improvements" (South Platt Basin Implementation Plan pg. 1-27). This project will provide monitoring data and assess project progress on the impacts of installing rain garden demonstration sites. The mobile application developed by the Mile High Flood District will be piloted as a part of this project, if successful this may provide an easily adoptable standard reporting format for monitoring rain garden performance as well as other stormwater control measures in achieving, enhancing and protecting water quality in our state.

This project will achieve key element two of the South Platte and Metro Roundtable 2020 Basin Education Action Plan: "advancement of conservation and reuse to efficiently use current and future water supplies in the basin". The plan lists Academic Institutions as one of the key categories of stakeholders listed as a target audience to engage moving forward.

This project will be led by the Colorado Stormwater Center managed by Colorado State University along with other academic partners including the One Water Solutions Institute and the Dept. of Horticulture and Landscape Design. In addition, the project engages Northern Water, Centennial Water and Sanitation District along with several municipalities (Fort Collins, Denver, Greeley) listed as "significant water suppliers who have their own outreach efforts which can leverage the Basin Implementation Plan and Colorado Water Plan messages". Furthermore, multiple project collaborators (Mile High Flood District, High Plains Environmental Center, El Laboratorio, South Platt River Advisory Youth Council, and Lincoln Hills Cares program) help diversify the broader stakeholder engagement goals set forth by the roundtable's action plans. Moreover, the emphasis on language justice expands the lens of stakeholder engagement by engaging typically underserved Spanish-speaking communities.

Related Studies

Rain gardens have been proven to be an effective means to treat stormwater runoff, create native habitat, conserve water, and reduce the total amount of stormwater leaving residential properties. The following articles support this assertion.
The factsheet developed by the University of Massachusetts Amherst article "Rain Gardens: A Way to Improve

Water Quality" (Clark, 2011) describes rain gardens as "attractive, functional landscaped areas designed to capture and filter stormwater runoff before it runs off into storm drains." The article further lists the benefits of rain gardens as "recharging groundwater in aquifers." Furthermore, the author describes the water quality benefits as "Rain gardens transform stormwater from a destructive carrier of pollution into a source of sustenance for plant and wildlife habitats: the plants thrive on nitrogen and phosphorus that is picked up while their sediments trap sediment". Additional studies are listed in the supplemental application.

Taxpayer Bill of Rights

None

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: (1) Summarizes the project and how the project was completed. (2) Describes any obstacles encountered, and how these obstacles were overcome. (3) Confirms that all matching commitments have been fulfilled. (4) 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 the Budget & Schedule 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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Last Updated: May 2021

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)?
Rain gardens offer an efficient and eye-catching mechanism to engage local communities and raise awareness around water conservation strategies while enhancing green space, reducing stormwater loads, and protecting water quality. This project aims to connect with Colorado communities to **enhance public knowledge and promote best practices for homeowner installation of residential rain gardens**. The project will reduce barriers to installing residential rain gardens by developing and piloting a **training certification course**, generating accessible **bilingual educational materials**, and **constructing demonstration sites in five partnering communities** across the northern Front Range to support local efforts for community engagement.
Who is/are the target audience(s)? How will you reach them? How will you involve the community?
Residential homeowners, landscape professionals, students, and community members in the five funding communities represent the project participants. As language justice is a critical component of this effort, Spanish speaking homeowners will be specifically targeted for participation and all marketing, outreach, educational and training materials will be translated into Spanish to help broaden and diversify participation. The five funding partners all bring unique challenges in their communities to the table; thus, we will work alongside each partner to individually craft messaging and outreach materials designed to engage the communities identified to host the demonstration sites.

A homeowner installation application will be developed collaboratively with the funding partners. Homeowners will be required to submit an application and attend a bilingual informational session to understand their role for the duration of the project. Next, the applications will be evaluated based on set of criteria developed in conjunction with the funding partners and finally selected for participation.

The Colorado Stormwater Center will conduct the Bilingual Certified Rain Garden Installation Training Course at each demonstration site. In addition to the homeowners, landscape professionals, students and community members will be encouraged to participate, as the course and site capacity allows.

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?

Collaboration is at the core of this project; the project team includes staff and students from the Colorado Stormwater Center, One Water Solutions Institute, Colorado State University's Dept. of Horticulture and Landscape Architecture and Colorado State University Extension. Moreover, the funding partners represent a variety of communities up and down the Front Range. In addition, this project engages several non-profit organizations described below.

FUNDING PARTNERS & CONTRIBUTIONS

Northern Water ($15,000) has committed to fund up to six rain gardens in different communities within their service boundary. Northern Water is targeting selection in communities that may not be able to provide funding to participate in this project. Boulder County is one of the communities that has already express interest in participating in this project as part of the Northern Water sponsored sites.

City of Greeley ($14,000) has committed funding for up to five demonstration sites.

City of Fort Collins Natural Areas Department ($10,000) will be funding up to four demonstration sites in the Fort Collins area.

Mile High Flood District ($5,600) has committed to fund two rain garden demonstration sites. One of these sites will be in partnership with the **South Platt River Advisory Youth Council** (SPRAY) which endorses this project and is an example of implementing the December 2021 "Our River, Our Voices, Our Future: A Youth-to-Youth Guide to a Healthier South Platte River" proposal. Additionally, the youth participating in this rain garden installation will be part of the **Lincoln Hills Cares program**.

Centennial Water and Sanitation District ($5,600) will fund two rain garden demonstration sites, most likely on properties with Homeowners Associations. This provides us the opportunity to work with HOAs, educate members, work on messaging, and address any concerns that the demonstration sites will not be well kept. These insights will be incorporated into the final educational materials.

PROJECT COLLABORATORS

The **High Plains Environmental Center** specializes in native plants. The native plants needed for the rain garden demonstration sites will be purchased from the High Plains Environmental Center to the maximum extent practical in support of the local organization.

El Laboratorio, **South Platt River Advisory Youth** (SPRAY) Council, and **Lincoln Hills Cares** organizations will be engaged in piloting the Certified Rain Garden Installation Training course, planting, and maintaining one of the Denver rain gardens in partnership with Mile High Flood District. The above partners are working with low income and minority youth to provide meaningful training and engagement opportunities that will provide them with hands-on experience that can be used to improve their communities.

CSU Extension will be engaged in providing feedback on the planting layouts, educational materials, and the Bilingual Certified Rain Garden Installation Training Course.

Describe how you plan to measure and evaluate the success and impact of the project?

This project will be evaluated though each task by our partner organizations, training participants, and demonstration site participants. The success of the rain gardens will be evaluated through frequent inspections completed by trained students, homeowners, and/or Colorado Stormwater Center staff through the Mile High Flood District mobile application.

This app will facilitate uniform and streamlined data collection for all demonstration sites by providing a standard inspection form for documenting the site before, during, and after the installation along with photos. Text messages can also be sent through the app to remind participants when inspections are needed or to notify them of a rain event so that pictures can be uploaded of full rain gardens during a storm to evaluate performance.

After the completion of the project, a story map of the project sites will be created through the data collected from the app with the assistance of Mile High Flood District.

A participant survey will also be implemented before and after the certification process to collect data on the project's effectiveness in increasing participant's knowledge of best practices for rain garden installation.

What research, evidence, and data support your project?

Rain gardens have been proven to be an effective means to treat stormwater runoff, create native habitat, conserve water, and reduce the total amount of stormwater leaving residential properties. The following articles support this assertion.

The factsheet developed by the University of Massachusetts Amherst article "Rain Gardens: A Way to Improve Water Quality" (Clark, 2011) describes rain gardens as "attractive, functional landscaped areas designed to capture and filter stormwater runoff before it runs off into storm drains." The article further lists the benefits of rain gardens as "recharging groundwater in aquifers." Furthermore, the author describes the water quality benefits as "Rain gardens transform stormwater from a destructive carrier of pollution into a source of sustenance for plant and wildlife habitats: the plants thrive on nitrogen and phosphorus that is picked up while their roots trap sediment".

The benefits listed in the previous article are echoed in "A Guide to Rain Gardens in South Carolina" published through Clemson Cooperative Extension. The guide describes one of the functions of rain gardens as mimicking the natural water cycle. As the number of impervious surfaces increase, stormwater runoff is increased creating flooding issues along with water quality issues as stormwater "picks up pollutants such as pet waste, fertilizer, litter, oil and gasoline" which are then deposited into our water bodies. "Rain gardens trap sediment and associated contaminants, promote biological processes to remove pathogens, and store or remove excess nutrients."

Additionally, many states are already implementing programs focused on providing training, resources, incentives (i.e., rebates) and certifications to homeowners for installing rain gardens. Examples of these programs are included below:

- Water Resources, Washtenaq County Michigan: https://www.washtenaw.org/647/Rain-Gardens
- Flows to Bay, San Mateo Countywide Water Pollution Prevention Program: https://www.flowstobay.org/preventing-stormwater-pollution/at-home/rain-gardens/
- Park Forest Rain Garden Incentive Program: https://www.villageofparkforest.com/745/Rain-Garden-Incentive-Program
- City of Tucson Rainwater Harvesting Rebate: Rainwater Harvesting Rebate | Official website of the City of Tucson (tucsonaz.gov)

These programs demonstrate several examples of successful residential rain garden programs across the United States. Colorado currently lacks these types of programs despite our arid region's growing need to conserve and use all water resources more wisely. The goal of this project is to develop a successful rain garden training program to increase the number of installations on residential properties in our state. This project is the first step in creating the education, training and demonstration projects needed to build a successful rain garden program in Colorado.

Describe potential short- and long-term challenges with this project.

Selection of participating households could be considered both a short-and-long-term challenge. In order to mitigate this issue, the Colorado Stormwater Center will work closely with each partner to determine the most appropriate way to select demonstration sites and participants. Additionally, properties with Homeowners Associations (HOAs) will be selected for participation which may delay the installation timeline(s) due to potential HOA approval processes and requirements.

The long-term challenges with this project may include the proper maintenance of the demonstration sites which could lead to requirements to remove it from their property. In order to mitigate this potential issue, all participating homeowners will be required to attend an informational meeting so that they understand how rain gardens function and the project expectation to maintain the sites long-term.

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."

This project achieves the education, outreach, and public engagement measurable objectives in the Colorado Water Plan by creating **educational materials** that can be used by **homeowners and water providers state-wide to increase public awareness** of the benefits associated with rain gardens including water conservation and water quality protection. Installing demonstration gardens in a variety of sites across the Front Range will enable homeowners to see and potentially visit examples of thriving gardens located right in their own neighborhoods. By emphasizing language justice and translating the educational materials into Spanish, the **project broadens access to this content** with the goal of increasing installation of rain gardens through **inclusion of our diverse Spanish speaking communities**.

A participant survey will also be implemented before and after the certification process to collect data on the project's effectiveness in increasing participant's knowledge of best practices for rain garden installation.

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.

The Colorado Water Plan's conservation goals will be addressed in this project by implementing rain gardens as a "long-term water efficient strategy(ies) to meet local and statewide water needs that are cost-effective and promote a water efficiency ethic throughout Colorado." (Colorado Water Plan_ Critical Action Plan, Chapter 10:3 Critical Goals and Actions pg. 10-9)

"Fit-for-purpose" use of water is a central tenant to One Water principles which emphasize using the right source of water for the most appropriate purpose. Ongoing research and a growing body of evidence describes the benefits of using stormwater locally for non-potable uses such as outdoor landscape irrigation. An additional benefit of local stormwater capture and use is a reduction on potable water demand, allowing water providers to use our state's limited and diminishing water resources more effectively. Rain gardens provide citizens a unique opportunity to improve their community ethics and maintain vibrant green spaces while conserving water and improving water quality.

Describe how the project achieves the education, outreach, and public engagement goals set forth in the applicable Basin Implementation Plan(s).

This project will address the Municipal Water Conservation, Reuse and Efficiency Goal and Water Quality Goal in the South Platt Basin Implementation Plan.

1. The Municipal Water Conservation, Reuse and Efficiency Goal is to "Continue the South Platte River Basin's leadership in water wise use" (South Platt Basin Implementation Plan pg. 1-26). This project will be working with a variety of municipalities in the Basin to "distribute and encourage adoption of '**best management practices'** as "guidelines" via **the Bilingual Certified Rain Garden Installation Training Course** and **associated bilingual rain garden materials published** on the Colorado Stormwater Center's website. The information gathered from this project will allow the Center to expand its resource portfolio and enhance training opportunities offered to municipalities that support the goals of promoting water efficiency and reuse.

2. The Water Quality Goal is to "Maintain, enhance, and proactively manage water quality for all use classifications" (South Platt Basin Implementation Plan pg. 1-27). The implementation of **rain gardens provides a means to proactively manage the quality of water leaving residential homes**. Additionally, the South Platt Implementation Plan lists the Measurable Outcome of "Monitor, protect, and improve watershed water quality and identify and document progress and improvements" (South Platt Basin Implementation Plan pg. 1-27). This project will provide **monitoring data** and assess project progress on the impacts of installing rain garden demonstration sites. The mobile application developed by Mile High Flood District will be piloted as a part of this project, if successful this may provide an **easily adoptable standard reporting format for monitoring rain garden performanc**e as well as other stormwater control measures in achieving, enhancing and protecting water quality in our state.

Last Updated: May 2021

Describe how the project achieves the basin roundtable's PEPO Education Action Plans.
This project will achieve key element two of the South Platte and Metro Roundtable 2020 Basin Education Action Plan: "advancement of conservation and reuse to efficiently use current and future water supplies in the basin". The plan lists Academic Institutions as one of the key categories of stakeholders listed as a target audience to engage moving forward. This project will be led by the Colorado Stormwater Center managed by Colorado State University along with other academic partners including the One Water Solutions Institute and the Dept. of Horticulture and Landscape Design. In addition, the project engages Northern Water, Centennial Water and Sanitation District, along with municipalities (Fort Collins, Greeley) listed as "significant water suppliers who have their own outreach efforts which can leverage the Basin Implementation Plan and Colorado Water Plan messages". Furthermore, multiple project collaborators (Mile High Flood District, High Plains Environmental Center, El Laboratorio, South Platt River Advisory Youth Council, and Lincoln Hills Cares program) help diversify the broader stakeholder engagement goals set forth by the roundtable's action plans. Moreover, the emphasis on language justice expands the lens of stakeholder engagement by engaging typically underserved Spanish- speaking communities.

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: May 2021

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Last Updated: May 2021

Colorado Water Conservation Board
Water Plan Grant – Statement of Work – Exhibit A

Statement Of Work	
Date:	12/1/21
Name of Grantee:	Colorado Stormwater Center
Name of Water Project:	Expanding Residential Rain Garden Installations in Front Range Communities
Funding Source:	Engagement and Innovation Water Plan Grant

Water Project Overview:

Colorado communities are facing unprecedented pressure on dwindling water resources due to factors such as climate change (increased drought conditions) and dramatic rises in population. These factors are resulting in increased water demand for outdoor irrigation. Implementing more **efficient ways to irrigate landscapes** while **preserving the beauty of vegetated spaces** is becoming more important than ever in our state. One way this can be accomplished is by exploring opportunities to retain and use stormwater onsite for outdoor irrigation thereby reducing the amount of stormwater municipalities are required to managed. Rain gardens are an efficient and aesthetically pleasing mechanism for communities to conserve water, enhance green space, reduce stormwater runoff, and protect water quality. Unfortunately, rain gardens are not being widely installed at the residential scale in our state and benefits of this form of green infrastructure are often overlooked. This lack of implementation can be attributed to several barriers including:

1. Homeowners lack resources and knowledge regarding plant selection and rain garden installation methods
2. Landscape professionals and community members are inadequately equipped with the proper expertise to install and maintain rain gardens
3. Effective and accessible rain garden demonstration sites and examples which showcase their beauty and benefits are lacking
4. Inadequate access to and availability of bilingual educational resources

The Expanding Residential Rain Garden Installations in Front Range Communities project addresses each of these barriers through the following tasks:

- Task 1: Creation of a bilingual Residential Rain Garden Installation Guide and Planting Layouts
- Task 2: Development and delivery of a bilingual Certified Residential Rain Garden Installation Training Course
- Task 3: Installation of demonstration rain garden sites
- Task 4: Monitoring and evaluation of demonstration sites

Last Updated: May 2021

Project Objectives:

The project objectives are to:

1. Provide necessary bilingual educational materials to guide homeowners, community members and landscaping professionals on proper installation and maintenance techniques to incorporate rain gardens into residential properties.
2. Certify official Colorado Residential Rain Garden Installers by training community members, landscapers, and students to increase the number of trained professionals that can properly install rain gardens across the Front Range.
3. Provide examples of demonstration rain gardens in a variety of locations to showcase their benefits including the garden's ability to replace conventional lawn and reduce potable water demand for irrigation while increasing curb appeal and other low maintenance features.

Task 1

Task 1 – Creation of Bilingual Residential Rain Garden Installation Guide and Planting Layouts

Description of Task:

The Colorado Stormwater Center (project lead) will partner with the Colorado State University (CSU) Horticulture and Landscape Architecture Department to design and document up to six rain garden planting layout options. These layouts will deploy a "plant by number" design approach which will provide homeowners with a list of native plants and layout options for how to plant them within the rain garden. This may entirely remove the need for homeowners to contract a landscape architect to design a plant layout, significantly reducing the overall cost of installing a rain garden.

Additionally, the Colorado Stormwater Center will update, improve, and translate the currently available "Building a Rain Garden in Colorado" installation guide . This guide provides step-by-step directions on how to prepare the site, install, and maintain residential rain gardens. To enhance accessibility of the materials the final updated guide will be translated into Spanish upon completion of the project.

Method/Procedure:

The updated Residential Rain Garden Installation Guide will include sections describing the benefits and functions of a rain garden in addition to choosing a location, sizing the rain garden, tools needed, construction instructions, plant selection and design, and maintenance protocols.

The updated guide will be piloted and used for training (Task 2) and installation of the demonstration rain gardens (Task 3). Feedback from the project partners, training participants, and homeowners on suggested improvements will be incorporated into the final Residential Rain Garden Installation Guide. The comments from the project partners will be solicited via email whereas training participants and homeowners will have the opportunity to provide input via surveys gathered in-person and/or via email. The final Residential Rain Garden Guide will incorporate new photos that feature the rain garden demonstration sites from this project.

Up to six planting layouts will be created in partnership with Dr. Jennifer Bousselot (Assistant Professor) and a Graduate Research Assistant (GRA) from the CSU Department of Horticulture and Landscape Architecture. The potential layouts will include options based on sun exposure (full sun, part shade, and full shade) and size (small, medium, large) in addition to other criteria based on the expertise and recommendations of Dr. Bousselot. These layouts will include aesthetically pleasing native plants that are best suited for each rain garden design. The layout will be modeled after Resource Central's successful Garden in a Box planting program which provides layouts with a "plant by number" design and includes plant care and maintenance guidance.

Last Updated: May 2021

Deliverable:

The deliverables for Task 1 include the following materials which will be accessible on the Colorado Stormwater Center's website and made available during training courses described in Task 2:

- Bilingual Residential Rain Garden Planting Layouts (up to 6)
  - Bilingual Plant Care and Maintenance Manual
- Bilingual Residential Rain Garden Installation Guide
  - Step-by-step residential rain garden installation instructions which detail the following
    - Choosing a Location
    - Sizing the Rain Garden
    - Tools and Materials Needed
    - Construction Instructions
    - Plant Selection and Design
    - Maintenance

Task 2

Task 2 – Creation and Delivery of Bilingual Certified Colorado Rain Garden Installation Training

Description of Task:

The Colorado Stormwater Center (CSC) will develop and implement a bilingual Certified Residential Rain Garden Installation Training course. The new course will be listed on the Colorado Stormwater Center's website and offered to the public several times per year, as instructor schedule(s) allow upon completion of this project. Since Colorado does not currently have a Certified Residential Rain Garden Installer Training, this is an opportunity to create a course that will train community members, students, and landscape professionals on ways to evaluate sites, install, and maintain rain gardens. To increase participation and enhance diversity the course will be offered in both English and Spanish.

This new certification course will include classroom training, field trips to demonstration sites, and an exam. Upon passing the exam, all participants will receive a certificate and will be added to the newly generated database of Certified Residential Rain Garden Installation Professionals published on the CSC website.

The CSC currently offers two stormwater certifications including the Stormwater Control Measure Inspection and Maintenance Certification and the Stormwater Control Measure Design and Design Review Certification. Thus, the Colorado Stormwater Center is well suited to design, conduct and certify the new Colorado Residential Rain Garden Installation Training course developed under Task 2.

Method/Procedure:

The materials for the bilingual Certified Colorado Residential Rain Garden Installation Training will be developed and piloted during this project. This course will be developed using the Bilingual Residential Rain Garden Installation Guide (Task 1) and incorporate detailed sections on how to choose a location, sizing the rain garden, tools needed, construction instructions, plant selection and design, and how to maintain the rain garden.

The bilingual training will be divided into two parts.

- **Training Part 1:** Three to four-hour lecture-style (virtual) training covering the specifics of how to install a rain garden following the Bilingual Residential Rain Garden Installation Guide. Training participants will be required to complete the necessary calculations for the rain gardens that will be installed in Training Part 2. This will give the trainees a complete picture of how to plan and install a rain garden from start to finish. This training will be offered virtually to enable simultaneous live translation of the lecture using the Zoom platform and contracted translation services. By utilizing

this platform, the training can be recorded in English and Spanish and made available to all registered participants. This removes a barrier for those community members interested in attending the training, but who are unable to attend the live class. Based on previous bilingual trainings the CSC taught this year in partnership with Northern Water, we observed a higher percentage of Spanish speakers viewing the recordings rather than attending the live classes.

- **Training Part 2:** The final part of the certification will be installing a rain garden. This hands-on installation will take place at the 19 selected demonstration sites. The hands-on installation will be a component of the Certified Colorado Residential Rain Garden Installation Training for the duration of this project. The Colorado Stormwater Center will be partnering with the Community Language Coop to provide live in-person translation services for the in-person rain garden installation. Language justice is a critical component of this project and will be incorporated during every task. In future trainings, the pictures from these sites will be used for teaching purposes and these gardens may be visited as part of a field trip component in future training events. Part of the in-person training will also include training on how to use the Mile High Flood District App for monitoring and reporting (Task 4).

The project partners (Northern Water, City of Greeley, City of Fort Collins Nature in the City Department, Mile High Flood District, and Centennial Water and Sanitation) are covering the costs of providing this training in each of the demonstration sites. Therefore, participants will not be charged to attend the training for this project.

To ensure all participants are able to actively participate in the installation of the demonstration rain gardens the number of installers will be limited to five per site. Two examples illustrating how the participant selection will work are provided below.

- **Example 1:** The City of Greeley is sponsoring five rain garden demonstration sites. The Colorado Stormwater Center will hold Training Part 1 (virtual) for up to 25 people. The training participants will then be able to sign up for one of the five sites to install the rain garden and complete their certification in Greeley with a maximum of 5 people per site.

- **Example 2:** Mile High Flood District, located in Denver, is sponsoring two rain gardens. In Denver, the Colorado Stormwater Center will hold Training Part 1 (virtual) for up to 10 people. These participants will then be able to sign up for either of the two selected sites with a maximum of 5 people per site.

After the bilingual Certified Colorado Rain Garden Installation Training materials are reviewed, evaluated and refined, this certification will be offered through the Colorado Stormwater Center after the completion of this project.

Deliverable:

- Bilingual Certified Colorado Rain Garden Installation Training Course materials
  - PowerPoint Presentation
  - Exams
  - Installation photos
  - Evaluations
- Participant data (e.g., total number of participants per location, demographics of participants)
- Database of registered participations (available on the Colorado Stormwater Center website)
- Official paper certificates to participants that meet all course requirements and pass a final exam

Last Updated: May 2021

Task 3
Task 3 – Installation of Demonstration Rain Gardens
Description of Task:
Up to 19 rain gardens will be installed across several Front Range communities. At this time, the rain gardens are planned for installation in Fort Collins, Highlands Ranch, Denver, Boulder County, and Greeley. Should funding allow, additional communities may be approached as well. Community support is critical to the success of this project, thus we are partnering with the following water providers and municipalities to fund all the materials for the demonstration gardens: • Northern Water • City of Greeley • Nature in the City/City of Fort Collins • Centennial Water and Sanitation District • Mile High Flood District Our partners will also help select the demonstration sites/ locations and assist will recruiting employees, students and/ or community members to participate in the bilingual Certified Colorado Residential Rain Garden Installation Training Course (Task 2). Since the needs of the communities differ, the selection and evaluation process for each partner will be tailored to fit the specifications of their community. Sites in lower-income or historically disadvantaged communities will be prioritized for installing demonstration gardens which require establishment watering for the first 2-3 years post installation. To ensure that maintaining the rain gardens does not pose a financial burden on low-income homeowners, complimentary rain barrels will also be installed at these locations to provide additional water supplies for establishing the rain garden. Community stewards may be identified to help maintain the gardens and educate their fellow community members.
Method/Procedure:
In order to be eligible to receive a free rain garden, all interested homeowners are required to attend a mandatory informational session. The Colorado Stormwater Center will work with each funding partner to determine an outreach strategy for targeting homeowners in their districts. The homeowners will complete a brief survey upon registration for the project team to acquire a baseline understanding of their rain garden knowledge. The informational session will provide the homeowners with the project scope and clearly define expectations for participating homeowners that detail what will be provided and commitment timelines. This informational session will be bilingual, offered via Zoom, and recorded in English and Spanish. The interested homeowners will the fill out an application. The Colorado Stormwater Center will create a scoring rubric with each of the funding partners to evaluate the applications and make the final selection of demonstration sites for their district. Once the sites are selected, the Colorado Stormwater Center will set up a meeting with each homeowner to discuss their site, take pictures and measurements which will be used in the subsequent training (Task 2). The installation dates (Training Part 2) will be scheduled with each homeowner. The funding partners are sponsoring the costs of each rain garden installation. Materials for each rain garden installation include: • Mulch • 20-50 native plants (depending on the size of the rain garden) • Buckets

- Cobble
- Gloves
- Downspout Extender
- Hose
- Shovels
- Rain Barrels (2)
- Bilingual informational rain garden signage

Rain barrels are included in this list due to the need to water rain gardens until they are established. Since low income or historically disadvantaged communities will be targeted for this effort, homeowners can elect to have rain barrels installed on their property. Installing rain barrels will provide an additional water source to remove the barrier of increasing water costs for low-income households to appropriately maintain the rain garden until it is established. The installation of the rain barrels will take up to one hour.

Each rain garden installation will take up to five hours with five installers (Training Part 2). The homeowner will be invited to attend the installation and offer feedback on the design selected. In addition, homeowners will be required to identify two preferred rain garden layout choices developed in Task 1. This allows greater flexibility in the event certain native plants are unavailable when the garden is installed.

After the installation each homeowner will receive a bilingual informational rain garden sign that will be displayed for the duration of the project to facilitate greater project visibility and allow other community members an opportunity to learn more about the program.

Homeowner(s) and/or students will be required to monitor the site and provide inspection reports using the Mile High Flood District App (Task 4). The App will also be used for uploading photos before, during and after installation of the rain garden.

Deliverable:

- 19 Demonstration Rain Gardens – total value of $50,200 in materials contributed by project funding partners
    - Northern Water District (6 rain gardens)
    - City of Greeley (5 rain gardens)
    - City of Fort Collins Nature in the City Department (4 rain gardens)
    - Mile High Flood District (2 rain gardens)
    - Centennial Water and Sanitation District (2 rain gardens)
- Up to 50 native plants per rain garden with a potential total of up to 950 native plants installed during this project

Last Updated: May 2021

Tasks 4

Task 4 – Monitoring and Evaluation of Demonstration Sites

Description of Task:

Task 4 outlines a standardized process for monitoring and evaluating the 19 sites demonstration sites. To implement a consistent process we are partnering with Mile High Flood District (MHFD) to leverage a customized mobile application developed by the District for monitoring and inspecting various stormwater control measures.

Since these rain gardens are installed on private residential properties, personal information will be protected (i.e., not publicly available through the mobile application). The application includes an inspection report where photos can be uploaded before, during, and after construction of the rain garden. The App also includes a feature that notifies participants when rainfall occurs on their property and requests they upload pictures of the rain garden post-rain event to ensure data is routinely collected for each demonstration site.

Method/Procedure:

In order to utilize the MHFD App, all homeowners and training participants will receive an orientation on how to use the app and submit a report on the rain gardens. The Colorado Stormwater Center will be requesting monthly reports on the status of the rain garden. Colorado Stormwater Center personnel will also visit each rain garden approximately monthly to view the rain garden, answer any questions, and ensure proper watering and weeding of the rain garden are being conducted.

The homeowner will be expected to water, weed, and submit inspection reports for their site. If this will provide a hardship for the homeowner, the Colorado Stormwater Center will find another person to perform this maintenance role in partnership with the homeowner.

The MHFD App is being piloted for this project. In the future, the app will potentially be used for inspection and maintenance purposes of stormwater control measures across the state. This app will allow inspectors to fill out reports and alert the stormwater control measure owners of any needed maintenance.

Deliverable:

- Monitoring and evaluation data summary reports from the Mile High Flood District mobile application documenting the progression of all 19 rain gardens including:
  - Similarities and difference between sites
  - Performance of each site
  - Observations of the homeowner and trained community members
- Story map of demonstration sites provided by Mile High Flood District

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.

Last Updated: May 2021

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 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 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 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
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Exhibit C
Budget and Schedule

Prepared Date: 12/1/21

Name of Applicant: Colorado State University

Name of Water Project: Expanding Residential Rain Garden Installations in Front Range Communties

Project Start Date: 3/1/22

Project End Date: 12/31/23

Task No.	Task Description	Task Start Date	Task End Date	Grant Funding Request	Match Funding	Total
1	Creation of Bilingual Residential Rain Garden Installation Guide and Planting Layout(s)	3/1/2022	12/31/2023	36,120.00	7,500.00	$36,120.00
2	Creation and Delivery of Bilingual Certified Colorado Residential Rain Garden Installation Training	3/1/2022	12/31/2023	54,180.00	2,500.00	$84,280.00
3	Installation of Demonstration Rain Gardens	5/15/2022	12/31/2023	54,180.00	50,200.00	$84,280.00
4	Monitoring and Evaluation of Demonstration Sites	5/15/2022	12/31/2023	36,120.00		$36,120.00
						$0.00
			Total	$180,600	$60,200	$240,800.00

SPONSORED PROGRAMS
2002 Campus Delivery
Fort Collins, Colorado 80523-2002
https://vpr.colostate.edu/osp/

Proposal Transmittal Information

Wednesday, December 1, 2021

Colorado Water Conservation Board
waterplan.grants@state.co.us

Colorado State University submits the proposal entitled "Expanding Residential Rain Garden Installations in Front Range Communities." Dr. Jessica Thrasher is CSU's Principal Investigator.

When submitted under cover of this letter, the referenced proposal has gone through the University's standard review process. The appropriate program and administrative personnel of the institution involved in this application are aware of the sponsoring agency's guidelines and are prepared to enter into good faith negotiations to establish the necessary inter-institutional agreement(s). The institution makes all applicable assurances/ certifications.

The person to be contacted for administrative or contractual matters or arrangements:

Bill Moseley, Senior Research Administrator
Colorado State University Office of Sponsored Programs
2002 Campus Delivery
Fort Collins, CO 80523-2002
(970) 491-1541
Bill.moseley@colostate.edu

Authorized for submission by:

Jennifer Alvarez, Research Administrator
Colorado State University Office of Sponsored Programs
(970) 491-6586
Jennifer.alvarez@colostate.edu

Thank you,

Jennifer Alvarez Digitally signed by Jennifer Alvarez
Date: 2021.12.01 13:10:49 -07'00'

Jennifer Alvarez

SPONSOR: CWCB
PI: Jessica Thrasher

KR 151285
PoP: 3/1/2022 - 12/31/2023

12/1/2021 LH

	Sponsor Contribution			Cost Share Contribution			Project		
	Year 1	**Year 2**	**Total**	**Year 1**	**Year 2**	**Total**	**Year 1**	**Year 2**	**Total**
PERSONNEL SALARIES									
Jessica Thrasher, PI- 4.25 months each year	$ 28,164	$ 28,966	$ 57,130	$ -	$ -	$ -	$ 28,164	$ 28,966	$ 57,130
Fringe 26.70%	$ 7,520	$ 7,734	$ 15,254	$ -	$ -	$ -	$ 7,520	$ 7,734	$ 15,254
Mazdak Arabi- Cost share- 0.16 month in year 1	$ -	$ -	$ -	$ 3,946.33	$ -	$ 3,946	$ 3,946	$ -	$ 3,946
Fringe 26.70%	$ -	$ -	$ -	$ 1,053.67	$ -	$ 1,054	$ 1,054	$ -	$ 1,054
Jennifer Bousselot- Cost share 0.42 month in year 1	$ -	$ -	$ -	$ 3,946.33	$ -	$ 3,946	$ 3,946	$ -	$ 3,946
Fringe 26.70%	$ -	$ -	$ -	$ 1,054	$ -	$ 1,054	$ 1,054	$ -	$ 1,054
Sarah Millonig, Webiste Management- 0.50 month each year	$ 3,139	$ 2,689	$ 5,828	$ -	$ -	$ -	$ 3,139	$ 2,689	$ 5,828
Fringe 26.70%	$ 838	$ 718	$ 1,556	$ -	$ -	$ -	$ 838	$ 718	$ 1,556
TBN, GRA- 50%, 1 month in year 1	$ 1,776	$ -	$ 1,776	$ -	$ -	$ -	$ 1,776	$ -	$ 1,776
Fringe 10.00%	$ 178	$ -	$ 178	$ -	$ -	$ -	$ 178	$ -	$ 178
Student Hourly- ~811 hours each year @$17/hour	$ 13,787	$ 13,786	$ 27,573	$ -	$ -	$ -	$ 13,787	$ 13,786	$ 27,573
Fringe 0.20%	$ 28	$ 28	$ 55	$ -	$ -	$ -	$ 28	$ 28	$ 55
TOTAL SALARY:	$ 46,866	$ 45,441	$ 92,307	$ 7,893	$ -	$ 7,893	$ 54,759	$ 45,441	$ 100,200
TOTAL FRINGE:	$ 8,563	$ 8,479	$ 17,043	$ 2,107	$ -	$ 2,107	$ 10,671	$ 8,479	$ 19,150
TOTAL PERSONNEL:	**$ 55,430**	**$ 53,920**	**$ 109,350**	**$ 10,000**	**$ -**	**$ 10,000**	**$ 65,430**	**$ 53,920**	**$ 119,350**
DOMESTIC TRAVEL:	**$ 4,000**	**$ 4,000**	**$ 8,000**	**$ -**	**$ -**	**$ -**	**$ 4,000**	**$ 4,000**	**$ 8,000**
MATERIALS AND SUPPLIES	**$ 5,000**	**$ 5,000**	**$ 10,000**	**$ -**	**$ -**	**$ -**	**$ 5,000**	**$ 5,000**	**$ 10,000**
OTHER DIRECT COSTS									
In-State Tuition: one five-credit semester in year 1	$ 3,251	$ -	$ 3,251	$ -	$ -	$ -	$ 3,251	$ -	$ 3,251
Other:	$ 2,500	$ 2,500	$ 5,000	$ 50,200	$ -	$ 50,200	$ 52,700	$ 2,500	$ 55,200
TOTAL OTHER DIRECT:	**$ 5,751**	**$ 2,500**	**$ 8,251**	**$ 50,200**	**$ -**	**$ 50,200**	**$ 55,951**	**$ 2,500**	**$ 58,451**
TOTAL DIRECT COSTS:	**$ 70,181**	**$ 65,420**	**$ 135,601**	**$ 60,200**	**$ -**	**$ 60,200**	**$ 130,381**	**$ 65,420**	**$ 195,801**
Facilities & Administrative:	**$ 22,756**	**$ 22,243**	**$ 44,999**	**$ -**	**$ -**	**$ -**	**$ 22,756**	**$ 22,243**	**$ 44,999**
TOTAL:	**$ 92,937**	**$ 87,663**	**$ 180,600**	**$ 60,200**	**$ -**	**$ 60,200**	**$ 153,137**	**$ 87,663**	**$ 240,800**
				Cost Share		**25.00%**			
Travel Details:									
travel	$ 4,000	$ 4,000	$ 8,000	$ -	$ -	$ -	$ 4,000	$ 4,000	**$ 8,000**
Total:	**$ 4,000**	**$ 4,000**	**$ 8,000**	**$ -**	**$ -**	**$ -**	**$ 4,000**	**$ 4,000**	**$ 8,000**
Materials Details:									
materials	$ 5,000	$ 5,000	$ 10,000	$ -	$ -	$ -	$ 5,000	$ 5,000	**$ 10,000**
Total:	**$ 5,000**	**$ 5,000**	**$ 10,000**	$ -	$ -	**$ -**	**$ 5,000**	**$ 5,000**	**$ 10,000**
			$ -						
Other Costs Details:									
3rd party cost share- 19 rain garden installations	$ -	$ -	$ -	$ 50,200	$ -	$ 50,200	$ 50,200	$ -	**$ 50,200**
Spanish translation of materials	$ 2,500	$ 2,500	$ 5,000	$ -	$ -	$ -	$ 2,500	$ 2,500	**$ 5,000**
Total:	**$ 2,500**	**$ 2,500**	**$ 5,000**	**$ 50,200**	**$ -**	**$ 50,200**	**$ 52,700**	**$ 2,500**	**$ 55,200**
Cost Share - CSU									
Mazdak Arabi 0.16 month, salary + fringe	$ -	$ -	$ -	$ 5,000	$ -	$ 5,000	$ 5,000	$ -	**$ 5,000**
Jennifer Bousselot- 0.42 month salary + fringe	$ -	$ -	$ -	$ 5,000	$ -	$ 5,000	$ 5,000	$ -	**$ 5,000**
Total:	**$ -**	**$ -**	**$ -**	**$ 10,000**	**$ -**	**$ 10,000**	**$ 10,000**	**$ -**	**$ 10,000**
Cost Share - Third Party									
Northern Water- rain garden installation	$ -	$ -	$ -	$ 15,000	$ -	$ -	$ 15,000	$ -	**$ 15,000**
Centennial- rain garden installation	$ -	$ -	$ -	$ 5,600	$ -	$ -	$ 5,600	$ -	**$ 5,600**
Mile High Flood District- rain garden installation	$ -	$ -	$ -	$ 5,600	$ -	$ -	$ 5,600	$ -	**$ 5,600**
City of Fort Collins- rain garden installation	$ -	$ -	$ -	$ 10,000	$ -	$ -	$ 10,000	$ -	**$ 10,000**
City of Greeley- rain garden installation	$ -	$ -	$ -	$ 14,000	$ -	$ -	$ 14,000	$ -	**$ 14,000**
Total:	**$ -**	**$ -**	**$ -**	**$ 50,200**	**$ -**	**$ -**	**$ 50,200**	**$ -**	**$ 50,200**
F&A Rate:	34.0%	34.0%	34.0%	0.0%	0.0%	0.0%	34.0%	34.0%	34.0%
F&A Base:	$ 66,930	$ 65,420	$ 132,350	$ 60,200	$ -	$ 60,200	$ 66,930	$ 65,420	$ 132,350
	$ 22,756	**$ 22,243**	**$ 44,999**	**$ -**	**$ -**	**$ -**	**$ 22,756**	**$ 22,243**	**$ 44,999**

CWCB Expanding Residential Rain Garden Installations in Front Range Communities

Budget Justification
Colorado State University
Principle Investigator: Jessica Thrasher

<u>Total Personnel: $119350 (Salary + fringe)</u> Sponsor Request: $109,350; Cost Share: $10,000

- **Jessica Thrasher, PI**
  - Jessica (4.25 months each year) will direct, manage, and lead this project. She is responsible for hiring the student hourly, working with the five funding partners and five project collaborators, and the 19 demonstration site participants. She will collaborate with the Horticulture Department to create the rain garden layouts, create the content for and deliver the Certified Rain Garden Training. Jessica will hire the Spanish Translator to translate all the content into Spanish and ensure the website updates are made. She will supervise all demonstration garden installations and be available for questions on-site while the student hourly leads the installation. Jessica will supervise the monitoring of the rain garden demonstration sites and prepare all the reporting documents.
- **Student Hourly**
  - The student hourly (approximately 811 hours each year @ $17/hour) will be trained as a Certified Rain Garden Installer and be the lead on each of the demonstration sites. They will be following up with the homeowners and/or the students monitoring the site to ensure that regular inspection reports and maintenance are taking place at each demonstration site. They will visit all the 19 demonstration sites as well to perform periodic inspections and speak with the homeowners about any issues or observations of their rain gardens.
- **Sarah Millonig, Website Management**
  - The website manager (0.50 month each year) will provide any needed updates to the website and add the updated rain garden installation guide and other materials created throughout the project.
- **To Be Named (TBN) Horticulture Graduate Research Assistants (GRA)**
  - The TBN GRA (50%, 1 month in year 1) will create up to six rain garden layouts for residential rain gardens and planting by number designs. These designs will include native plants numbered and arranged to allow homeowners to plant them easily.
- **Dr. Mazdak Arabi**
  - Dr. Arabi (Cost share: 0.16 month in year 1) will be part of the advisory committee for this project which will review and provide feedback on the Certified Rain Garden Training Materials, rain garden planting layouts, and evaluation components.
- **Dr. Jennifer Bousselot**
  - Dr. Bousselot (Cost share: 0.42 month in year 1) will be providing oversite of the To Be Name Horticulture GRA and provide input on the created rain garden layouts. She will also be part of the advisory committee for this project which will review and provide feedback on the Certified Rain Garden Training Materials, and evaluation components.

Travel $8,000

- Travel costs will include mileage. The travel is necessary to visit each of the 19 rain garden demonstration sites before the installation, during installation, and for monitoring and evaluation after the installation. All the mileage is for in-state travel. It is estimated that the Colorado Stormwater Center personnel will be traveling to each rain garden demonstrations site approximately 10 times to conduct the assessment, installation, evaluation and monitoring of the sites.

Materials $10,000

- Materials will be provided for all the participants in the Certified Rain Garden Training. A packet of materials will also be given to each of the homeowners with instructions on how to maintain their rain gardens and requirement for participating in the project. All the materials provided will be printed. The updated Residential Rain Garden Installation Guides will be printed after the completion of the project to be given to all rain garden demonstration site participants, trainees and partner organizations.

Other Direct Costs: $58,451 Sponsor Request: $8,251; Cost Share: $50,200

- **In-state tuition** $3,251
    - In-state tuition. One five-credit semester for the TBN Horticulture GRA. Enrollment is a condition of employment for GRAs at CSU.
- **Spanish Translation of Materials** $5,000
    - The Spanish translator will translate the Rain Garden Installation Guide, planting layout, and Certified Rain Garden Installer Training into Spanish.
- **Rain garden installations** Cost share: $50,200
    - Each rain garden will cost up to $2,800 with some gardens costing less depending on the needs of each of the project partners. This cost covers the cost of the rain garden materials such as plants, mulch, cobble, downspout extender, shovels, buckets, hose, and bilingual rain garden information sign. This will additionally cover the cost of adding rain barrels to the house to provide an additional source of water for watering the rain gardens and the Spanish translator needed for the rain garden demonstration site installation training.

Total Direct Costs:	**Sponsor: $135,601**	**Cost Share: $60,200**	**Project: $195,801**
F&A (34%)	**Sponsor: $ 44,999**	**Cost Share: $0 (unallowable)**	**Project: $ 44,999**
Total Direct + Indirect Costs:	**Sponsor: $180,600**	**Cost Share: $60,200**	**Project: $240,800**

Total Sponsor Request: 180,600

Indirect Costs: F&A rates are negotiated and approved by the Department of Health and Human Services, Colorado State University's cognizant federal agency. CSU's approved MTDC rate beginning July 1, 2017 for Other Sponsored Activities is 34%.

Colorado State University's Indirect Cost Agreement and Fringe Benefit Rates may be viewed here: http://busfin.colostate.edu/Forms/CostAcctg/FY22_Rate_Agreement.pdf#zoom=100

November 29, 2021

Ben Wade
Project Manager
Water Supply Planning
1313 Sherman St., Rm 721
Denver, CO 80203

Re: CWCB Colorado Water Plan Engagement & Innovation Grant, Expanding Residential Rain Garden Installations in Front Range Communities

Dear Mr. Wade:

This letter is confirming The City of Greeley's support for the proposal submitted by the Colorado Stormwater Center entitled "Expanding Residential Rain Garden Installations in Front Range Communities." This proposal aligns with The City of Greeley's goals of improving Stormwater quality, flood prevention, water conservation and education and hands-on community engagement with an under served population in Greeley.

If this proposal is selected for funding, it is the intent of The City of Greeley to collaborate and commit resources amounting in a total of up to $14,000 for the duration of this project.

Thank you for your consideration.

Sincerely,

Karen L Reynolds

Karen L. Reynolds
Stormwater Manager

CENTENNIAL
WATER AND SANITATION DISTRICT

November 22, 2021

Ben Wade
Project Manager
Water Supply Planning
1313 Sherman St., Rm 721
Denver, CO 80203

Re: CWCB Colorado Water Plan Engagement & Innovation Grant, Expanding Residential Rain Garden Installations in Front Range Communities

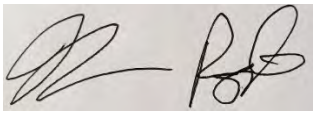
Dear Mr. Wade:

This letter is confirming Centennial Water and Sanitation District's support for the proposal submitted by the Colorado Stormwater Center entitled "Expanding Residential Rain Garden Installations in Front Range Communities." This proposal aligns with the Centennial Water and Sanitation District goals of removing non-essential turf and maintaining the integrity of the precipitation that falls in Highlands Ranch.

If this proposal is selected for funding, it is the intent of Centennial Water and Sanitation District upon approval of our budget in early December to collaborate and commit resources amounting in a total of $5,600 for the duration of this project.

Thank you for your consideration.

Sincerely,



Thomas Riggle, MAS, QWEL, WWLP
Water Conservation and Efficiency Coordinator
Centennial Water and Sanitation District
Office: 720-240-4918

62 West Plaza Drive
Highlands Ranch, Colorado 80129
www.highlandsranch.org

303-791-0430 Telephone
303-791-0437 Engineering Fax
303-791-3290 Financial Services Fax

MHFD
MILE HIGH FLOOD DISTRICT

2480 W. 26th Ave Suite 156-B | Denver, CO 80211
TEL 303 455 6277 | FAX 303 455 7880

www.mhfd.org

November 19, 2021

Ben Wade
Project Manager
Water Supply Planning
1313 Sherman St., Rm 721
Denver, CO 80203

Re: CWCB Colorado Water Plan Engagement & Innovation Grant, Expanding Residential Rain Garden Installations in Front Range Communities

Dear Mr. Wade:

This letter is confirming Mile High Flood District's support for the proposal submitted by the Colorado Stormwater Center entitled "Expanding Residential Rain Garden Installations in Front Range Communities." This proposal aligns with Mile High Flood District's core value to be stewards of watersheds and streams.

If this proposal is selected for funding, it is the intent of Mile High Flood District to collaborate and commit resources amounting in a total of $5,600 for the duration of this project.

Thank you for your consideration.

Sincerely,

Holly Piza, P.E.
Engineering Services Manager

JULIA FEDER / **ENVIRONMENTAL PROGRAM MANAGER**
NATURAL AREAS DEPARTMENT

1745 Hoffman Mill Road
PO Box 580, Fort Collins, CO 80522-0580

970-221-6213/P
jfeder@fcgov.com /E

November 23, 2021

Ben Wade
Project Manager
Water Supply Planning
1313 Sherman St., Rm 721
Denver, CO 80203

Re: CWCB Colorado Water Plan Engagement & Innovation Grant, Expanding Residential Rain Garden Installations in Front Range Communities

Dear Mr. Wade:

This letter is confirming the support from Nature in the City, a program of the City of Fort Collins for the proposal submitted by the Colorado Stormwater Center entitled “Expanding Residential Rain Garden Installations in Front Range Communities.” The Nature in the City program seeks to provide easy access to nature, high quality natural spaces, and land stewardship for the Fort Collins community. We believe the Rain Garden project is an important part of furthering these goals.

If this proposal is selected for funding, it is the intent of Nature in the City to collaborate and commit resources amounting in a total of $10,000 for the duration of this project.

Thank you for your consideration.

Sincerely,

JULIA FEDER
Environmental Program Manager
City of Fort Collins Natural Areas
p: 970.221.6213
e: jfeder@fcgov.com
w: https://www.fcgov.com/naturalareas
Pronouns: she / her / hers

Northern Water
Northern Colorado Water Conservancy District
220 Water Avenue • Berthoud, Colorado 80513
800-369-7246 • www.northernwater.org

November 22, 2021

Ben Wade
Project Manager
Water Supply Planning
1313 Sherman St., Rm 721
Denver, CO 80203

RE: CWCB Colorado Water Plan Engagement & Innovation Grant, Expanding Residential Rain Garden Installations in Front Range Communities

Mr. Wade:

This letter confirms the support from Northern Water for the proposal submitted by the Colorado Stormwater Center entitled "Expanding Residential Rain Garden Installations in Front Range Communities." This proposal aligns with the Northern Water goals of helping the general public understand and implement water-wise behaviors through high visibility demonstration projects and the promotion of training and certifications that advance water efficiency knowledge and capabilities.

If this proposal is selected for funding, Northern Water intends to collaborate and commit resources amounting in a total of $15,000 for the duration of this project. Through this collaboration, Northern Water allottees will gain access and assistance to participate in the "Expanding Residential Rain Garden Installations in Front Range Communities" project. Thus, this proposal further aligns with Northern Water's goal of supporting allottees to implement effective water efficiency programs.

Furthermore, this proposal's emphasis on providing bilingual resources and trainings serves an essential need for the community by facilitating increased access and equity in project implementation. Through experiences in past collaborations, Northern Water firmly believes the Colorado Stormwater Center possesses the requisite skills and commitment to execute the" Expanding Residential Rain Garden Installations in Front Range Communities" project successfully.

Thank you for your consideration.

Sincerely,

DocuSigned by:
Frank Kinder
20C086DCF31746C...

Frank Kinder
Water Efficiency and Sustainability Manager
Northern Water