



Parks & Open Space

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 www.BoulderCountyOpenSpace.org

To: Sean Cronin, Executive Director, St. Vrain Left Hand Water Conservancy District
 From: Audrey Butler, Water Resource Program Supervisor, Boulder County Parks & Open Space

RE: 7A Funding Request

Mr. Cronin,

On behalf of Boulder County, Parks & Open Space respectfully submits this application for funding of a Water Use Efficiency and Telemetry project to optimize water management, mitigate climate impacts, and protect the long-term viability of agriculture within the District. We appreciate your consideration of this project and look forward to our continued partnership in protecting local watersheds and services.

Sincerely,

Audrey Butler
 Water Resource Program Supervisor
 Boulder County Parks & Open Space

Project Summary	
Name of Applicant	Boulder County Parks & Open Space (BCPOS)
Name of Water Project	Water Use Efficiency and Telemetry Project
SVLHWCD Request Amount	\$50,000
Boulder County Funding Contribution	\$40,000
Total Project Cost	\$90,000

Description of Organization
<p>Boulder County Parks & Open Space owns and has conservations easements on over 100,000 acres and an associated water rights portfolio that supports agriculture, ecosystems, and recreation. The County has purchased approximately 25,000 acres of agricultural land in an effort to conserve and preserve the agricultural heritage and economy of the county. These lands are dispersed throughout the St. Vrain, Left Hand, and Boulder Creek watersheds and are leased to qualified agricultural operators. The Parks & Open Space Agricultural Resources Division oversees the land, manages the leases, and tracks rent and crop production. In addition, the county administers its water rights and oversees water use on all of its properties. Water Resources and Agriculture Project Management staff will oversee the short and long-term implementation of this project and the application of the resulting water use and soil moisture information.</p>

Project Goal

The goal of this project is to optimize water management on agricultural lands owned and managed by Boulder County in an effort to build drought resiliency, improve the yield of available water, and protect the long-term viability of agriculture in the county. To achieve this goal, Parks & Open Space proposes to install 18 flow measuring (accounting) devices on its pivot/lateral sprinklers and purchase and deploy soil moisture sensors (tensiometers) under these pivots to measure, monitor, and more closely manage the water that is being applied to the 2,350 acres the county owns and manages under sprinklers within the SVLHWCD boundaries.

Project Background

As our climate continues to change and drought and water scarcity for agriculture becomes an increasingly significant concern, efficient and well-informed application of our water is imperative to using these resources as responsibly and sustainably as possible. Installation of recording devices at our 18 pivot and lateral sprinklers covering 2,350 acres will be the first step in helping the county gain a more refined understanding of exactly how much water is being applied on its properties, how soil moisture data can help refine application times and rates, where efficiencies can be gained, and where additional supplies need to be acquired to protect the viability of the agriculture in the basin. To increase the real time benefit of this data, we will connect the flow measuring devices and soil moisture sensors to a telemetry network so that staff and tenants can see information, make adjustments, and identify issues in real time. Staff will use these records to refine our understanding of water use on our properties on a field by field basis, which will have immediate impacts on management, allocation of water to lessees, and pursuit of additional water resources.

Strategic Alignment

SVLHWCD identifies drought planning and preparedness, mitigating climate uncertainty, and optimizing water management as key objectives under the *Five Point Water Action Plan*. This project seeks to meet those same objectives through strengthening water use efficiencies by closely tracking water use on 2,350 acres within the District's boundaries, using this information to optimize water management throughout our properties, and ultimately mitigating the negative impacts of a highly variable and changing climate on local food systems. The District's Goal to "Grow Local Food" will be supported by efforts like this from large producers and land owners who continually refine and optimize the management of the water resources applied to their lands. Improving water efficiency across the District will take involvement from players large and small and this effort will be a significant first step in that direction. Collectively we can all build a more resilient future for our local farmers and the economy and food systems they support.

Approach

1. Parks & Open Space staff will purchase and install flow measuring devices (electromagnetic flow meters) on pivot and lateral sprinklers throughout St. Vrain and Left Hand watersheds. Staff will then purchase and deploy soil tensiometers under same sprinklers.

- Staff will purchase infrastructure for telemetry network and electronic database and deploy. Flow measuring devices and soil tensiometers will be associated with the telemetry network.
- Staff will begin collecting data and using information to inform native water management, new acquisitions, and future lease options.

Roles and Responsibilities

BCPOS staff will lead all phases of this project from acquisition of electronics to development of a telemetry network to the collection and of water use and soil moisture data. No time will be required from SVLHWCD staff. District staff will be welcome to tour the sites where the purchased infrastructure has been installed and see how we are using the data to optimize water application on our properties.

Budget

Boulder County's Water Use Efficiency and Telemetry Project Budget		Per Unit Cost	Quantity	Total
SVLHWCD Funding Request	Magnetic flow meter	\$2,500	18	\$45,000
	Soil Moisture Sensor (Tensiometer)	\$140	36	\$5,040
				\$50,040
Boulder County Contribution	Flow Meter, Tensiometer, and Network Telemetry Electronics	\$1,150	18	\$20,700
	Telemetry Network and Database/Server Buildout	\$19,500	1	\$19,500
				\$40,200
				\$90,240

Schedule

BCPOS will have flow measuring devices and soil tensiometers deployed and collecting data at each of it's center pivots in the St. Vrain and Left Hand watersheds by the end of 2022.

Boulder County's Water Use Efficiency and Telemetry Project Schedule		2021 Aug	Sep	Oct	Nov	Dec	2022 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Planning	Research and select flow measuring devices, soil tensiometers, and telemetry network	█	█	█	█	█												
Implementation	Purchase all equipment and deploy into the field						█	█	█	█	█	█	█					
	Set up telemetry database and storage infrastructure								█	█	█	█	█					
	Analysis of first year of water use and soil moisture information																█	█
Planning	Identify next series of water use accounting and telemetry sites throughout Boulder County properties															█	█	█

Deliverables

- The county will provide a tour to District staff and board interested in seeing the installation and application of the water use accounting and telemetry systems.

2. At the end of 2022 BCPOS staff will present to the District information gathered during 2022 as well as discuss lessons learned, next steps, and recommendations for any other entities looking to complete a project of the same nature.
3. Recognition for the District – at the end of 2022 county staff will present to the Parks & Open Space Advisory Committee (POSAC) on the project and outcomes with recognition of the District's partnership and contribution to the effort.

Marta Loachamin

Vice Chair Board of Boulder County Commissioners

By:

October 12, 2021

Matt Jones, Chair **(Excused)**
Boulder County Board of County Commissioners