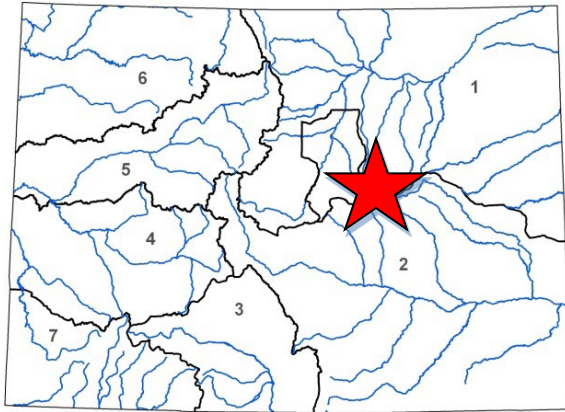




County Irrigation Water Conservation Study, Planning and Implementation Arapahoe County

Water Plan Grant Application

September 2023 Board Meeting



D E T A I L S	
Total Project Cost:	\$252,196.90
Water Plan Grant Request:	\$121,798.45
Recommended amount:	\$121,798.45
Other CWCB Funding:	\$0
Other Funding Amount:	\$0
Applicant Match:	\$130,398.45
Project Types:	Study, Planning, Design & Construction
Project Category:	Conservation & Land Use Planning
Measurable Results:	If only 15% irrigation water reduction were achieved at each of the sites as an outcome of the proposed work, that would equate to a permanent reduction of nearly two million gallons of water per season.

L O C A T I O N	
Counties:	Arapahoe & Denver
Drainage Basin:	Metro

Arapahoe County is undertaking a long-term water conservation initiative to reduce its use of this key resource county-wide and has developed a Water Action Plan that promotes reduction measures for all facility water uses. Separate from this grant request but in parallel, Arapahoe County Public Works is also modifying its land development codes to promote new water conservation design, efficiency and reuse policies and regulations. The process will provide both flexibility and clarity for the public to understand specific landscape requirements with the goal to work with and support local water districts to provide a cohesive front within the County to reduce water usage.

Arapahoe County is requesting funding for the design, construction, measurement, maintenance and sharing of water conservation measures at four sites within Arapahoe County including: Arapahoe County Administration (East side); Centrepont Plaza; Arapahoe County Justice Center campus; and Lima Campus. Each site will have some combination of turf replacement with conversion to native turf, reducing or eliminating irrigation, conversion of irrigation for optimal efficiency, or audits/additions of native plants, shrubs and trees. Site landscape, planting and irrigation master plans will be developed to show proposed phasing and irrigation savings at each site. Each implementation will be submetered to validate reductions in water use dedicated to landscape irrigation. Outreach appropriate to each site will be developed through the applicant’s in-house communications team in collaboration with the appropriate water authority. The applicant will widely promote these County projects through local sustainability groups and facility/landscape forums and act as resources to other entities about project lessons learned.

The Metro Basin Roundtable has shown support for this project. Furthermore, the applicant has engaged community partners, such as Colorado State University extension program, Colorado WaterWise, Denver Water, Aurora Water, Arapahoe County Water and Wastewater Authority and CWCB.

Funding Recommendation: This project is recommended for full funding of the \$121,798.45 requested.



COLORADO

Colorado Water Conservation Board

Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Arapahoe County	
Name of Water Project	County Irrigation Water Conservation Study, Planning and Implementation	
Grant Request Amount		\$121,798.45
Primary Category		\$121,798.45
	<i>Conservation & Land Use Planning</i>	
Total Applicant Match		\$130,398.45
	<i>Applicant Cash Match</i>	\$122,118.00
	<i>Applicant In-Kind Match</i>	\$8,280.45
Total Other Sources of Funding		\$0.00
Total Project Cost		\$252,196.90

Applicant & Grantee Information

Name of Grantee: Arapahoe County
Mailing Address: 1610 Littleton Blvd #100 Littleton Colorado 80120
FEIN: 84,600,740

Organization Contact: Lisa VanderHeyden
Position/Title: Senior Project Manager Email: lvanderheyden@arapahoegov.com
Phone: 720-415-9614

Organization Contact - Alternate: Ken Morris
Position/Title: Email: kmorris@arapahoegov.com
Phone:

Grant Management Contact: Lisa VanderHeyden
Position/Title: Senior Project Manager Email: lvanderheyden@arapahoegov.com
Phone: 720-415-9614

Grant Management Contact - Alternate: Ken Morris
Position/Title: Email: kmorris@arapahoegov.com
Phone:

Description of Grantee/Applicant

Arapahoe County is one of Colorado’s fastest growing counties, with more than 650,000 residents. The County incorporates 13 cities and towns, nine school districts and 450 local improvement and special service districts.

Arapahoe County is undertaking a long-term water conservation initiative to reduce its use of this key resource county-wide, and has developed a Water Action Plan that promotes reduction measures for all facility water uses.

Arapahoe County Public Works is also in a process of modifying its land development codes to promote new policies and regulations related to water conservation design, efficiency and reuse, and to provide both flexibility and clarity for the public to understand specific landscape requirements.

Type of Eligible Entity

- 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.
- 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	39.619786
Longitude	105.013870
Lat Long Flag	Other: Coordinates based on other boundaries or locations
Water Source	Multiple: Denver Water, ACWWA/Cherry Creek Basin/Aurora
Basins	Metro
Counties	Arapahoe; Denver
Districts	

Water Project Overview

Major Water Use Type	Municipal
Type of Water Project	Design & Construction
Scheduled Start Date - Design	9/1/2023
Scheduled Start Date - Construction	9/1/2023

Description

The project consists of study, implementation, measurement, maintenance and sharing of water conservation measures at four sites within Arapahoe County, including:

- Arapahoe County Administration (East side), 5334 S Prince St., Littleton CO, approximately 3 acres ornamental turf under irrigation through Denver Water. Advancing on the successful work funded at the west side of the facility through the 2021/22 grant, the County intends to plan and implement water conservation measures to the semi-functional turf on the east side of the facility. Functionality and site usage differ from the west side of the facility, and options are more limited so the solution is still under discussion but is likely to consist of conversion to a native turf mix. Goal of any action taken on site will be to reduce irrigation water by a minimum of 15% irrigation over baseline year 2020 while maintaining aesthetics and functionality.
- Centrepont Plaza, 14980 E Alameda Ave., Aurora CO, approximately 3 acres mixed irrigated site (approximately 1.8 acres turf; 1.2 acres xeric) under irrigation with Aurora Water. In summer 2022 this site exceeded Aurora's recommended water budget by 50-90%. Severe watering restrictions are in effect, and modifications are critical to bring this site within accepted irrigation levels. Tree appraisal/audit is complete and site master-plan design is underway (conceptual plan and narratives attached to demonstrate direction of plan). 2023/24 target will be to bring irrigation water usage within Aurora's recommended water usage budget or not less than 30% reduction overall over baseline year 2020, whichever is greater, while maintaining the site's mature landscape elements. Target measures for 2023/24 include conversion of irrigation to protect trees and shrubs, while reducing or eliminating irrigation to turf areas targeted for later conversion to native as well as conversion of some high-irrigation demand areas to native.
- Arapahoe County Justice Center campus, 7305-7325 S. Potomac St., Centennial CO, approximately 4.7 acres mixed irrigated site (approximately 4.23 acres turf; .5 acres xeric) in ACWWA jurisdiction. This campus has a large amount of irrigated non-functional turf, unevenly distributed between a network of pedestrian sidewalks. Much of the turf and many of the trees are failing to thrive due to the impacts of salt/sand, slopes or other site factors. Site landscape master planning is underway and for 2023/24 will focus on aesthetic improvement of public space while reducing non-functional turf, replacing plantings adjacent to sidewalks prone to high concentrations of salt/sand with appropriate native landscape, and specific targets for modified irrigation. Narrative describing focus of design work is attached for reference. Anticipated implementation of projects to the extent funded would take place late 2023 into 2024 with minimum targeted irrigation reduction of 15% site-wide over 2020 baseline.
- Lima Campus, 6904-6984 S Lima St., Centennial CO, approximately 2.6 acres mixed irrigated site (approximately 1.6 acres turf; .9 acres xeric) in ACWWA jurisdiction. Site master plan design work is underway. Implementation will target low-cost/high-impact measures through late 2023 with additional phased measures in 2024 as funding allows. Focus on this site will be to protect trees and shrubs and preserve some ornamental turf at targeted spaces for staff refreshment while providing high aesthetic appeal and no increase in maintenance with targeted irrigation reduction of no less than 15% across the campus (over baseline year 2020). CSU Extension Master Gardener program has installed one demonstration xeric garden at the site and will be invited to be a part of the development of the remainder of that site. Narrative describing focus of design work is attached for reference.

Each implementation will be submetered to validate reductions in water use dedicated to landscape irrigation.

A critical element of the projects for County is widespread outreach and sharing of successes and lessons learned to demonstrate positive environmental leadership.

Outreach appropriate to each space will be developed through County's in-house Communications team in collaboration with the appropriate water authority. County's Project Manager and Energy/Resource Manager widely promote these County projects through local sustainability groups and facility/landscape forums and act as resources to other entities about project lessons learned. County's Project Manager has presented information

about the 2022 CWCB-funded turf conversion project as a part of a Sustainability Learning Lab at the International Facility Management Association's (IFMA) 2023 Facility Fusion conference in San Francisco and has been asked to submit an article for the international association's FM Journal (planned for late 2023/early 2024 to incorporate lessons learned) about landscape conversion projects.

County's outreach goal is to maximize distribution of information about these projects to staff and public through successful County media distribution to staff and public as well as any partner resources we can reach to share the reason for the modifications and the impact on the water basin as fully as possible.

Measurable Results

- New Storage Created (acre-feet)
- New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
- Existing Storage Preserved or Enhanced (acre-feet)
- New Storage Created (acre-feet)
- Length of Stream Restored or Protected (linear feet)
- Length of Pipe, Canal Built or Improved (linear feet)
- Efficiency Savings (dollars/year)
- Efficiency Savings (acre-feet/year)
- Area of Restored or Preserved Habitat (acres)
- Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement (acre-feet)

650,000 Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning

650,000 Number of Coloradans Impacted by Engagement Activity

Other

The uncertainty around how much of the construction can be completed for the budget available makes a true metric uncertain. However, if only 15% irrigation water reduction were achieved at each of the sites as an outcome of the proposed work, that would equate to a permanent reduction of nearly two million gallons of water per season.

County's goals are to:

1. Reduce potable water irrigation for modified spaces to contribute location-specific irrigation reduction targets based on function, conditions, proportion of modifications funded at the site and site-specific needs.
2. Collaborate with local authorities having jurisdiction (AHJs) to demonstrate and promote implementation of new and developing site design guidelines for irrigation water conservation through conversion of large site turf areas.
3. Demonstrate environmental stewardship and leadership at County facilities by planning, implementing and sharing about water-conserving landscape design across its facilities. Promote each project within the community using means appropriate to that site, including signage, newsletter postings, and through project partners or supporting organizations (such as Denver Water Public Affairs, City of Aurora) as well as through water conservation and sustainability forums within and outside the State.
4. Set new landscape development and maintenance practices in place that support the shift in maintenance focus from irrigating and tending to lawns to active maintenance and monitoring of remaining/required irrigation systems and water usage, supporting the health of trees and native site landscape, and invasive/weed control (to support acceptance of the new landscape).

Water Project Justification

This project directly supports the Water Plan's goals for vibrant and sustainable cities by significantly and permanently reducing potable water irrigation, conserving those resources for other uses. Colorado's water plan

seeks a reduction of 400,000 acre-feet of municipal and industrial water conservation by 2050 as well as the water plan goal to engage Coloradans on key water challenges by 2030.

County's water action plan specifies a goal to contribute to the State's water plan reduction, and the County's Public Works department is modifying land use restrictions to promote water conservation in design. Those newly-proposed land use recommendations will be incorporated into the planning for at least one of the sites included in this application. City of Aurora's new water-restricting land use recommendations will be applied at another site. Conservatively, this project is estimated to permanently reduce site irrigation by at least 6 acre-feet.

Through this project, the County seeks to extend its progress from 2022 as a model in water conservation for citizens of the County and across the State. In 2022 the County successfully collaborated with Denver Water Public Affairs to position its turf to native conversion for acceptance through its outreach to citizens demonstrating "the why" - the need to reduce potable water use for irrigation. Subsequent proposed projects will demonstrate other options for irrigation reduction and will be developed in collaboration with the appropriate water jurisdiction.

The Metro Roundtable has provided a letter of support which will be attached to this application.

This project also directly supports the South Platte Basin Implementation Plan by reducing the fertilizers needed for turf grass. Cherry Creek Reservoir in Cherry Creek State Park is impaired for nutrients and the reduction of fertilizers needed for turf grass in the watershed will help Cherry Creek Reservoir continue to support recreational activities.

Related Studies

The projects proposed in this application fit closely with the efforts of Arapahoe County Public Works in realigning landscape and land development code. Arapahoe County is in the process of updating the Landscaping and Screening section of the County's Land Development Code (LDC) to promote new policies and regulations related to water conservation design, efficiency and use, and to provide both flexibility and clarity for the public to understand specific landscape requirements. By implementing projects of this type, the County helps to set a positive example of the implementation of such practices.

With such intense focus on water basins and drought, increasing periods of drought and a drying climate, growing water demands and rising water costs, the County's new regulations intend to reduce the amount of water used in landscapes.

As a part of its effort, in 2021/22 County staff conducted a survey requesting input from 109 developers, landscape design professionals, local plant nurseries, water districts and applicable agencies on the landscape section of the LDC and received a 44% response rate. The results showed that there is strong support and interest in conserving and reusing water. County Public Works is actively working to update its landscape standards and establish water conservation measures, and has a goal to work with and support local water districts to provide a cohesive front within the County to reduce water usage.

In addition, the County's municipal stormwater program is incorporating water conservation messaging in its existing stormwater education and outreach activities.

This applicant is working collaboratively with County's Public Works to implement some of these new measures as a demonstration of the positive impacts on site and water usage.

Taxpayer Bill of Rights

None. Arapahoe County removed all TABOR limitations related to grant funds through voter approval of a 1995 ballot question.