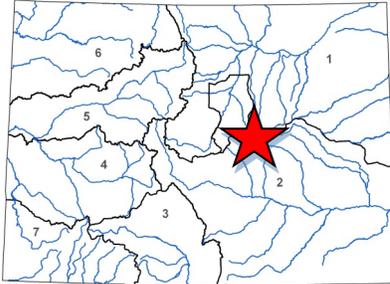




Water Plan Grant Application



L O C A T I O N	
County/Countries:	Arapahoe County
Drainage Basin:	Metro

D E T A I L S	
Total Project Cost:	\$184,270
Water Plan Grant Request:	\$138,203
Recommended Amount:	\$138,203
Other CWCB Funding:	\$0
Other Funding Amount:	\$
Applicant Match:	\$46,068
Project Type(s):	Other
Project Category(Categories):	Conservation and Land Use Planning
Measurable Result:	Est. savings of 1.5 million gallons/year (4.6 acre feet) at Administration site alone;

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 reuse, and to provide both flexibility and clarity for the public to understand specific landscape requirements. This application has two priority areas.

Priority 1: - Arapahoe County will convert approximately 3 acres of irrigated Kentucky Bluegrass at the public-facing west side of its Administration facility to non-irrigated native for the purpose of reducing the use of potable water for irrigation and demonstrating positive environmental citizenship. Trees in this site area will be irrigated through drip/bubblers (through a separate, County-funded project) to minimize the amount of irrigation water required for maintenance. Additionally, the project will provide a focused outreach effort to educate stakeholders (internal and external) about the changes to the site and the need to conserve potable water, and to increase likelihood of acceptance, through collaboration between Arapahoe County Communications team and Denver Water Public Affairs.

Priority 2: - Future Waterwise site design for several County properties.

- Design a site modification (landscape) plan for future implementation at east side of Administration facility that reduces potable water irrigation while maintaining useable space for staff and for the community, with target savings of no less than 15% of irrigation water over baseline year. (Actual target to be determined following outreach and study of site needs).
- Design and implement an irrigation system replacement and site landscape modification at County’s Arapahoe Plaza, its highest gallon/sq ft irrigation facility. Goal is to develop a plan to reduce from over 30 gal/sq ft/yr to County’s target of 12 gallons/sq ft/yr.



COLORADO

Colorado Water
Conservation Board

Department of Natural Resources

**Arapahoe County Govt.
Admin 1 Turf Conversion and
Conservation Planning for
Additional Sites**

March 2022 Board Meeting

- Design and develop budget for future project to modify site landscape at County's Centrepoint Plaza, its third highest irrigation water use facility, with target savings of no less than 15% of irrigation water over baseline year. (Actual target to be determined following outreach and study of site needs.)
- Design and implement irrigation and landscape modifications at the perimeter of the Sheriff/Coroner Administration facility to replace and properly support approximately 80 trees and landscape on several parking islands that are presently failing to thrive.

As a part of each Priority 2 project, install sub-metering to validate or baseline water use dedicated to landscape irrigation. Utilize professional design in collaboration with experts in water-saving landscape (such as CSU Extension and water utility professionals) to develop realistic targets for each site need. As projects are funded, provide communication and outreach as well as site signage to educate stakeholders about water conservation. Monitor irrigation water usage at each site to validate savings and to report project successes to stakeholders.



Last Updated: May 2021

Colorado Water Conservation Board

Water Plan Grant Application

Instructions

To receive funding for a Water Plan Grant, applicant must demonstrate how the project, activity, or process (collectively referred to as “project”) funded by the CWCB will help meet the measurable objectives and critical actions in the Water Plan. Grant guidelines are available on the CWCB website.

If you have questions, please contact CWCB at (303) 866-3441 or email the following staff to assist you with applications in the following areas:

Water Storage & Supply Projects	Matthew.Stearns@state.co.us
Conservation, Land Use Planning	Kevin.Reidy@state.co.us
Engagement & Innovation Activities	Ben.Wade@state.co.us
Agricultural Projects	Alexander.Funk@state.co.us
Water Sharing & ATM Projects	Alexander.Funk@state.co.us
Environmental & Recreation Projects	Chris.Sturm@state.co.us

FINAL SUBMISSION: Submit all application materials in one email to waterplan.grants@state.co.us in the original file formats [Application (word); Statement of Work (word); Budget/Schedule (excel)]. Please do not combine documents. In the subject line, please include the funding category and name of the project.

Water Project Summary

Name of Applicant	ARAPAHOE COUNTY GOVERNMENT	
Name of Water Project	ADMIN I TURF CONVERSION AND CONSERVATION PLANNING FOR ADDITIONAL EXISTING SITES	
CWP Grant Request Amount		\$138,202.50
Other Funding Sources _____		\$
Other Funding Sources _____		\$
Other Funding Sources _____		\$
Applicant Funding Contribution		\$46,067.50
Total Project Cost		\$184,270.00



Last Updated: May 2021

Applicant & Grantee Information	
Name of Grantee(s)	ARAPAHOE COUNTY GOVERNMENT
Mailing Address	1610 W LITTLETON BLVD #100, LITTLETON CO 80120
FEIN	84-600740
Organization Contact	LISA L VANDERHEYDEN
Position/Title	SR PROJECT MANAGER
Email	LVANDERHEYDEN@ARAPAHOEGOV.COM
Phone	720-415-9614
Grant Management Contact	LISA L VANDERHEYDEN
Position/Title	SR PROJECT MANAGER
Email	LVANDERHEYDEN@ARAPAHOEGOV.COM
Phone	720-415-9614
Name of Applicant (if different than grantee)	
Mailing Address	
Position/Title	
Email	
Phone	
Description of Grantee/Applicant	
Provide a brief description of the grantee's organization (100 words or less).	
<p>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.</p> <p>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.</p> <p>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.</p>	



Last Updated: May 2021

Type of Eligible Entity (check one)	
X	Public (Government): Municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
	Public (Districts): Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
	Private Incorporated: Mutual ditch companies, homeowners associations, corporations.
	Private Individuals, Partnerships, and Sole Proprietors: Private parties may be eligible for funding.
	Non-governmental organizations (NGO): Organization that is not part of the government and is non-profit in nature.
	Covered Entity: As defined in Section 37-60-126 Colorado Revised Statutes .

Type of Water Project (check all that apply)	
X	Study
X	Construction
	Other

Category of Water Project (check the primary category that applies and include relevant tasks)			
	<p>Water Storage & Supply - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity, multi-beneficial projects, water sharing agreements, Alternative Transfer Methods, and those projects identified in basin implementation plans to address the water supply and demand gap. <i>Applicable Exhibit A Task(s):</i></p> <p>Note: For Water Sharing Agreements or ATM Projects - please include the supplemental application available on the CWCB's website.</p>		
X	<p>Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, water efficiency, and drought planning. <i>Applicable Exhibit A Task(s):</i></p>		
	<p>Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. <i>Applicable Exhibit A Task(s):</i></p>		
	<p>Agricultural - Projects that provide technical assistance and improve agricultural efficiency. <i>Applicable Exhibit A Task(s):</i></p>		
	<p>Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. <i>Applicable Exhibit A Task(s):</i></p>		
	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%;">Other</td> <td>Explain:</td> </tr> </table>	Other	Explain:
Other	Explain:		

Last Updated: May 2021

Location of Water Project	
Please provide the general county and coordinates of the proposed project below in decimal degrees . The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Countries	ARAPAHOE
Latitude	39 37' 16.81" n
Longitude	105 1' 5.13" w

Water Project Overview
<p>Please provide a summary of the proposed water project (200 words or less). Include a description of the project and what the CWP Grant funding will be used for specifically (e.g., studies, permitting process, construction). Provide a description of the water supply source to be utilized or the water body affected by the project, where applicable. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, and area of habitat improvements, where applicable. If this project addresses multiple purposes or spans multiple basins, please explain.</p> <p>The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.</p>
<p>PHASED PROJECT TO INCLUDE THE FOLLOWING:</p> <p>Priority 1: - Convert approximately three acres of irrigated Kentucky Bluegrass at the public-facing west side of its Administration facility (5334 S. Prince St., (39° 37' 11.52" N, 105° 0' 50.27" N) to non-irrigated native to reduce irrigation water use by (target) 1,500,000 gallons/yr, to educate stakeholders about water conservation and to demonstrate environmental stewardship. Funding requested for study and construction.</p> <p>Priority 2: - Future Waterwise site design for four sites to include east side of Administration facility (approximately 3 acres of irrigated turf at 5334 S. Prince St., Littleton 39° 37' 11.52" N, 105° 0' 50.27" N) and Arapahoe Plaza (less than 1/3 of an acre irrigated, but our highest irrigation water/sq ft site) 1610, 1690 and 1710 W Littleton Blvd, Littleton - 39° 36' 42.28" N, 1095° 0' 40.17" W), Centrepoint Plaza (approximately 6 acres irrigated landscape, including approx. 1.8 acres of irrigated turf at 14980 E Alameda Ave., Aurora - 39° 42' 26.21" N, 104° 48' 52.52 W) and Sheriff/Coroner Administration facility (size of focus area to be determined in study - 13100 E Broncos Pkwy, Centennial - 39° 36' 46.24N, 105° 0' 41.20" W). Funds for these projects are requested for study, design and budget development, as well as implementation at Arapahoe Plaza and Sheriff/Coroner Administration facility.</p>



Last Updated: May 2021

Measurable Results

To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:

	New Storage Created (acre-feet)
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
	Existing Storage Preserved or Enhanced (acre-feet)
	Length of Stream Restored or Protected (linear feet)
Est. savings of 1.5 million gallons/year (4.6 acre feet) at Administration site alone. Additional savings for other sites to be calculated as design develops.	Efficiency Savings (indicate acre-feet/year OR dollars/year)
	Area of Restored or Preserved Habitat (acres)
	Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement



Last Updated: May 2021

	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
Arapahoe County is home to a population of over 650,000 people. This project is designed to provide engagement through multiple media to share the environmental leadership effort proposed.	Number of Coloradans Impacted by Engagement Activity	
	Other	Explain:

Water Project Justification

Provide a description of how this water project supports the goals of [Colorado's Water Plan](#), the [Analysis and Technical Update to the Water Plan](#), and the applicable Roundtable [Basin Implementation Plan](#) and [Education Action Plan](#). The Applicant is required to reference specific needs, goals, themes, or Identified Projects and Processes (IPPs), including citations (e.g. document, chapters, sections, or page numbers).

The proposed water project shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan Framework for State of Colorado Support for a Water Project (CWP, Section 9.4, pp. 9-43 to 9-44;)

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. Through this project, the County seeks to be a model in water conservation for citizens of the County. The County is collaborating with Denver Water Public Affairs to position the Priority 1 project 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 water reduction and will be developed in collaboration with the appropriate water jurisdiction (pending design).

Related Studies

Please provide a list of any related studies, including if the water project is complementary to or assists in the implementation of other CWCB programs.

Last Updated: May 2021

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 reuse, and to provide both flexibility and clarity for the public to understand specific landscape requirements.

With 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 and incorporate the use of stormwater for irrigation purposes.

As a part of its effort, County staff has 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 seeking assistance in developing landscape standards that would 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.

Previous CWCB Grants, Loans or Other Funding

List all previous or current CWCB grants (including WSRF) awarded to both the Applicant and Grantee. Include: 1) Applicant name; 2) Water activity name; 3) Approving RT(s); 4) CWCB board meeting date; 5) Contract number or purchase order; 6) Percentage of other CWCB funding for your overall project.

None

Taxpayer Bill of Rights

The Taxpayer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect your application.

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

Last Updated: May 2021

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

(1) Required with application.

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

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.



Last Updated: May 2021

Application Questions

*The grant fund request is referred to as “project” in this application.

Overview (answer for both tracks)
<p>In a few sentences, what is the overall goal of this project? How does it achieve the stated purpose of this grant fund (above)?</p> <p>Demonstrate large site water conservation project to citizens. Conserve potable water resources through measurement and verification of irrigation water usage, conversion of Kentucky bluegrass turf to other elements, water-savings landscape and irrigation design and pilot a large-area turf conversion as a model to County citizens.</p>
<p>Who is/are the target audience(s)? How will you reach them? How will you involve the community?</p> <p>Target audience includes stakeholders in and around Arapahoe County, Colorado and throughout the greater metropolitan area. Active engagement is planned for Task 1, native turf conversion, through a collaboration between Arapahoe County and Denver Water Public Affairs. Preliminary plans for community outreach include the following:</p> <ul style="list-style-type: none"> - Outreach to residents via weekly electronic newsletter - Posts on social media channels, which could include Twitter, Instagram, Facebook, NextDoor, and YouTube (with cooperative sharing between County and Denver Water Public Affairs) - Signage at the site during and after the replacement to help residents understand why turf was being replaced - Outreach to employees via weekly electronic newsletter - Information posted on County website - Recorded short spots at initiation of irrigation modification, during implementation of the turf conversion and at termination of project, produced by Denver Water Public Affairs with sharing to media outlets and through social media. <p>Outreach plans will be developed for subsequent projects in collaboration between Arapahoe County’s Communications team and the applicable water jurisdiction.</p>
<p>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?</p> <p>Arapahoe County Communications team has committed to acting as County lead in communications.</p> <p>Denver Water Public Affairs team has indicated a very strong interest in promoting this project through newsletters, web site updates and by filming and releasing news stories to the metro area news outlets, describing the large area turf conversion project.</p> <p>In designing the project, the County engaged CSU Extension through its Turf Specialist, Tony Koski, as well as a local landscape designer and a local irrigation design firm.</p>



Last Updated: May 2021

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

Primary measurement of success will be in the reduction of potable water used for irrigation at each site. Target reduction for the priority 1 project is 1.5 million gallons at the west side of the Administration site. Reduction will be verified against baseline 2021 attached as an exhibit to this request beginning in 2023 irrigation season (following 2022 as year of establishment). A separate County project is providing funding to reconfigure/replace the irrigation system and to provide separate metering for this portion of the site to validate savings. Irrigation system is tied to WeatherTrak controller, enabling monitoring and management of any unanticipated flows and analysis of usage trends to allow fine-tuning of irrigation at the site.

Additional irrigation reduction targets will be set for other sites in design process. For each site, baseline measurements are either in place or will be added as a part of the study. Once targets are set for irrigation water savings and the projects funded and implemented, irrigation water usage will be tracked and irrigation savings validated by the County's Energy Program Manager.

County understands that success will also be measured by acceptance and is investing in public outreach to ensure that citizens understand why it is undertaking these projects. County's Communications department will be the recipient of public input/comment re the site conversion and future project success. We will measure the acceptance of the turf conversion project based on the volume and tone of the feedback received and whether that feedback continues beyond the year of establishment.

What research, evidence, and data support your project?

The project is utilizing industry-standard practices for turf conversion. The estimated savings was developed (lacking a sub-meter) by eliminating system and occupant water flow, operating the irrigation zones and checking meter readings for 15-minute intervals. County and its selected contractor have visited multiple sites around the State that have implemented turf to native conversions and believe that the method selected for this conversion is the most environmentally responsible and maintenance-friendly approach.

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

- 1) Short-term the greatest challenge for the Priority 1 project will be stakeholder acceptance. We are converting a very public, usually green (but non-utilized) turf area to a prairie field.
- 2) For the Priority 1 project County staff will be challenged with changing mindset and maintenance patterns from lawn mowing, watering and manicuring to maintenance of non-irrigated turf (noxious weed and pest control) .
- 3) Each of the sites proposed as Priority 2 has unique challenges related to usage, siting or grading, so no single solution will be appropriate for all. The project team will be challenged to find unique solutions to meet the needs at each site that provide the highest water conservation.

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.).



Last Updated: May 2021

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.”
The communications planned as a part of the Admin Turf Conversion project (Task 1) will provide significant outreach and public engagement to demonstrate the County’s commitment to environmental stewardship and to model a successful large-area turf conversion. County is committed to reporting the irrigation water savings for this project and to documenting lessons learned throughout the project. County will continue to report on its progress along the sustainability track as other projects are developed, both through its newsletters and on its web site, and will maintain site signage at each site modified by this project.
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.
This project is all about potable water irrigation reduction and promoting to the public the importance of taking proactive steps to conserve our water resources.
Describe how the project achieves the education, outreach, and public engagement goals set forth in the applicable Basin Implementation Plan(s).
The South Platte Basin Education Action plan seeks to educate basin Citizens “about the ongoing leadership and advancement of conservation and reuse to efficiently use current and future water supplies in the basin”. The project proposed in Priority 1 and the subsequent projects will be highly public demonstrations of water conservation projects. The extensive outreach planned with the primary project will shine a spotlight on the County’s effort to convert a large irrigated turf area to native for the primary purpose of public education about conservation, at no cost to the basin.
Describe how the project achieves the basin roundtable’s PEPO Education Action Plans.
The project documentation (including the lessons learned that will be developed) will be available to the roundtable for demonstration of the conservation effort.

Innovation Track
Describe how the project enhances water innovation efforts and supports a water innovation ecosystem in Colorado.



Last Updated: May 2021

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

Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work

Date:	2021-11-11
Name of Grantee:	Arapahoe County Facilities & Fleet
Name of Water Project:	ADMIN I TURF CONVERSION AND CONSERVATION PLANNING FOR ADDITIONAL EXISTING SITES
Funding Source:	Conservation Land Use Planning and County Capital Improvement and Building Maintenance Funds

Water Project Overview:

The project consists of multiple parts

Priority 1: - County has approved a project to convert approximately 3 acres of irrigated Kentucky Bluegrass at the public-facing west side of its Administration facility to non-irrigated native for the purpose of reducing the use of potable water for irrigation and demonstrating positive environmental citizenship. Trees in this site area will be irrigated through drip/bubblers (through a separate, County-funded project) to minimize the amount of irrigation water required for maintenance. To enhance site aesthetics and increase acceptance, grant funds will enable the project to design and implement low-water transition planting areas consisting of mulch beds, xeric elements and/or trees.

Provide a focused outreach effort to educate stakeholders (internal and external) about the changes to the site and the need to conserve potable water, and to increase likelihood of acceptance, through collaboration between Arapahoe County Communications team and Denver Water Public Affairs.

- Priority 2: - Future Waterwise site design.**
- **Design a site modification (landscape) plan for future implementation at east side of Administration facility that reduces potable water irrigation while maintaining useable space for staff and for the community, with target savings of no less than 15% of irrigation water over baseline year. (Actual target to be determined following outreach and study of site needs).**
 - **Design and implement an irrigation system replacement and site landscape modification at County’s Arapahoe Plaza, its highest gallon/sq ft irrigation facility. Goal is to develop a plan to reduce from over 30 gal/sq ft/yr to County’s target of 12 gallons/sq ft/yr.**
 - **Design and develop budget for future project to modify site landscape at County’s Centrepoin Plaza, its third highest irrigation water use facility, with target savings of no less than 15% of irrigation water over baseline year. (Actual target to be determined following outreach and study of site needs.)**
 - **Design and implement irrigation and landscape modifications at the perimeter of the Sheriff/Coroner Administration facility to replace and properly support approximately 80 trees and landscape on several parking islands that are presently failing to thrive.**

As a part of each Priority 2 project, install sub-metering to validate or baseline water use dedicated to landscape irrigation. Utilize professional design in collaboration with experts in water-saving landscape (such as CSU Extension and water utility professionals) to develop realistic targets for each



Last Updated: May 2021

site need. As projects are funded, provide communication and outreach as well as site signage to educate stakeholders about water conservation. Monitor irrigation water usage at each site to validate savings and to report project successes to stakeholders.

Project Objectives:

- 1. Reduce potable water irrigation. Priority 1 project potable water savings target is 1.5 million gallons/yr reduction. More defined targets for other sites will be developed in design process.**
- 2. Demonstrate environmental stewardship and leadership at County facilities by planning and implementing water-conserving landscape design. Promote the Priority 1 project within the community as a large-area turf conversion and as a water conservation project through signage, newsletter postings, and through project partners or supporting organizations (such as Denver Water Public Affairs and City of Littleton). Promote Priority 2 projects as they are developed through similar communication means to further demonstrate leadership in water conservation.**
- 3. Provide each site included in this request with the flow meters, tie-ins to smart controllers and alarms to allow for real-time monitoring and modification of irrigation to ensure measurement and verification of savings generated.**

Task 1 – Administration West Side Turf Area Conversion

Task 1 – Admin I West Side Turf Area Conversion

Description of Task:



Last Updated: May 2021

Convert Administration facility west side Kentucky bluegrass turf to non-irrigated native seed. Plan and implement aesthetic modifications to soften the transition to non-irrigated native seed area, increasing “acceptance” value.

Method/Procedure:

- Apply 2 non-selective herbicide applications to kill turf
- Mow dead turf at 1.5” and collect clippings
- Aerate 4-5 times
- Drill seed and broadcast seed to a depth of .25”
- Apply low fertility (8-2-0) fertilizer
- Drag with metal drag mat
- Replace turf on parking island with mulch bed
- Apply crusher fine pathways to two picnic table areas to designate use areas
- Properly irrigate for establishment of seed; after establishment, continue irrigation only as targeted to trees and shrubs.
- Design and implement xeric areas, trees or other water conservation aesthetic elements to soften transition for the public.
- Ensure appropriate drip/bubbler irrigation to support all elements. **Note that the irrigation system with new master regulator and flow valves is being modified through a separate project funded by County to support the native area conversion.
- Train maintenance staff in maintenance of newly converted area.
- Beginning 2023 irrigation season, measure and verify irrigation water savings.
- Develop and implement communications plan including community outreach, signage, active update mechanisms and partnering with other agencies (Denver Water Public Affairs) to highlight the project. Continue outreach through project and document/share success story after establishment.

Deliverable:

West side of Administration facility converted to non-irrigated native turf, with xeric elements, trees or other low-water beds placed to enhance transition to native area.

Irrigation discontinued to turf area after year of establishment (2022).

Measurement and verification of irrigation system reduction through controller and flow meter/sensor as well as water utility reporting, normalized for seasonal variations.

Target water savings at west side of facility approximately 1.5 million gallons/year.

Last Updated: May 2021

Task 2 – Future Waterwise Site Design	
Task 2 – Future Waterwise Site Design	
Description of Task:	
<p>Working with a qualified designer(s), develop a water-conserving site design for each of the following:</p> <ul style="list-style-type: none"> - East side of County Administration Facility. Verify landscape water usage utilizing new sub-metering installed through a separate County-funded project. Design and develop plans and budget estimate for future site modification project that supports useable space for community and staff while reducing irrigation use. Target minimum 15 – 50% irrigation water reduction over baseline year 2021. *Note that County will be making voluntary irrigation water reduction beginning 2022 prior to study. (Funding requested for necessary study and design only; implementation pending future funding.) - Arapahoe Plaza (Arapahoe County’s highest gallon/sq ft irrigation facility). Design and implement a low-maintenance irrigation system replacement and site landscape modification that fits requested (internal) 2022 project budget with goal to reduce from over 30 gallons/sq ft/yr to County’s target of 12 gallons/sq ft/yr. Project to include updating and reconfiguration of main line, valves and master valve controls with flow sensors, branch/lateral lines, new zone configuration and high-efficiency heads. System to tie in with existing WeatherTrak controller to detect flow/leaks and enable usage analysis. Design to include measures to eliminate or alter the landscape strip that is subject to snow piles, salt and irrigation challenges. (County has approved funding for a planned irrigation system implementation and requests funding to conduct study and water-saving design and partial funding for implementation to accelerate water conservation efforts.) - Centrepont Plaza, Arapahoe County’s third-highest irrigation water use facility Verify irrigation water usage through sub-metering. In collaboration with water utility, City (AHJ) and designer, redesign site landscape and irrigation to reduce fully irrigated turf and reduce site potable water irrigation use while supporting useable space for community and staff. Specific savings goal to be developed with project design, but to target range of 15 – 50% of irrigation water over baseline year. (Funding requested for necessary study, design and budget estimation only. Study may include purchase and installation of flow meters.) - Sheriff/Coroner Administration Facility Design and implement water-conserving irrigation and landscape modifications at the perimeter of the Sheriff/Coroner Administration facility to replace and properly support approximately 80 non-thriving trees and landscape on several parking islands. Project to include purchase and installation of flow meter(s) tied to existing WeatherTrak controller to validate irrigation water usage on site and enable detection of leaks as well as irrigation and landscape modifications designed for water conservation. (County has approved internal funding for implementation of some landscape replacement in 2022 and seeks funding for design and implementation to tie modifications with water conservation efforts.) *Note that most of the area covered by this item is not formally irrigated, so no baseline data is available. 	
Method/Procedure:	



Last Updated: May 2021

- Solicitation for design firm
- Verification of irrigation water usage at each site through installation of flow meters or submeters and collaboration with specific site utility.
- Design process to consider site factors (soils, topography, use needs of multiple stakeholder groups)
- Develop project drawings, water savings estimate and proposed project budget to implement where funded or to enable County to submit for future funding.

Deliverable:

- Implementation of irrigation and landscape modifications at Arapahoe Plaza and Sheriff/Coroner Administration Facility.
- Constructable/permittable design with verifiable irrigation reduction target and reliable construction cost estimate to enable County to submit the project for future funding.

Task 3 – Outreach & Education

Task 3 – Outreach & Education

Description of Task:

For each site proposed:

- Develop site-specific outreach and education campaign in collaboration between County Communications team and site water utility.
- Engage stakeholders through communication of project plans and goals utilizing various media and site signage dedicated to education about the water conserving features of the site transition.
- Report successful outcomes using various media and in collaboration with each site’s water utility.

Method/Procedure:



Last Updated: May 2021

<ul style="list-style-type: none">- Working with each site utility, develop and implement communication plan to engage stakeholders in development of solution, to inform of plans, and to communicate outcomes.
Deliverable:
<ul style="list-style-type: none">- Flexible communications plan for each site project, providing steps to be implemented at each stage of project.

Task 4 – Measurement and Verification

Description of Task: Measurement and Verification
For each proposed site: <ul style="list-style-type: none">- Validate current/baseline site irrigation. For some sites may require flow meters tied to irrigation system controllers and/or alternate submetering.- Develop potable irrigation water conservation target through Task 3 design.- For each design implemented, track reductions in potable irrigation usage, normalized for seasonal variation, in collaboration with appropriate water utility and County’s Energy/Resource Manager.- Report on outcomes to grant authority and to County stakeholders.
Method/Procedure:



Last Updated: May 2021

Meter-verified tracking of potable irrigation water usage, both pre-project and post-implementation.
Normalization of findings for seasonal variations by working with Denver Water and/or other appropriate water utility.

Deliverable:

Verifiable reporting of potable irrigation water use changes at sites where projects have been implemented.

Task s

Description of Task:

Method/Procedure:



Last Updated: May 2021

--

Deliverable:

--

Budget and Schedule

This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

Reporting Requirements

Progress Reports: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status of the tasks identified in the statement of work, including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that:

- Summarizes the project and how the project was completed.
- Describes any obstacles encountered, and how these obstacles were overcome.
- Confirms that all matching commitments have been fulfilled.
- Includes photographs, summaries of meetings and engineering reports/designs.

The CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.



Last Updated: May 2021

Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

Costs incurred prior to the effective date of this contract are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of this contract must be provided to as part of the project documentation.

Performance Measures

Performance measures for this contract shall include the following:

(a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget in Exhibit C. Per Water Plan Grant Guidelines, the CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

(b) Accountability: Per Water Plan Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per Water Plan Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment.

(c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary.

(d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.



COLORADO

Colorado Water Conservation Board

Department of Natural Resources

Colorado Water Conservation Board

**Water Plan Grant - Exhibit C
Budget and Schedule**

Prepared Date: February 24, 2022

Name of Applicant: Arapahoe County Government

Name of Water Project: Update to the 2010 Guidebook of Best Practices for Municipal Water Conservation in Colorado

Project Start Date: March 2022

Project End Date: October 2023

Task No.	Task Description	Task Start Date	Task End Date	Grant Funding Request	Match Funding	Total
1	Admin I West Side Turf Area Conversion	Mar-22	Apr-23	\$ 83,827.50	\$ 27,942.50	\$111,770.00
2	Future Waterwise Site Design & Implementat	Mar-22	Apr-23	\$52,500.00	\$ 17,500.00	\$70,000.00
3	Outreach and Education	Mar-22	Oct-23	\$1,875.00	\$625.00	\$2,500.00
4	Measurement and Verification	Mar-22	Oct-23	0	0	\$0.00
Total				\$138,202.50	\$46,067.50	\$184,270.00

Task	Start Date
Task 1 - Admin I West Side Turf Conversion	Mar-22
Task 2 - Future Waterwise Site Design	Mar-22
Task 3 - Outreach and Education	Mar-22
Task 4 - Measurement and Verification	Mar-22

March start date March 15, 2022.

Project Completion date October 31, 2023.

Completion Date	Task Duration
Apr-23	13 months
Apr-23	13 months
Oct-23	20 months
Oct-23	20 months



County Admin I - 5334 S Prince St., Littleton CO 80120
Areas approximate

2019-04-02	439	69		
2019-03-04	424	66		
2019-02-01	450	72		
2019-01-02	377	59		
2018-12-03	373	58		
2018-11-05	650	114		
2018-10-05	5527	1645		
2018-09-04	1555	285		
2018-08-03	5282	901		
2018-07-02	8180	1380		
2018-06-01	5803	987		
2018-05-02	708	125	4855	4,855,000
2018-04-02	460	78		
2018-03-02	433	71		
2018-02-01	393	75		
2018-01-02	331	63		
2017-12-01	393	75		
2017-11-01	451	86		
2017-10-02	3736	652		
2017-09-01	5515	947		
2017-08-03	9302	1575		
2017-07-03	6612	1129		
2017-06-02	5256	904		
2017-05-03	3610	631	5370	5,370,000
2017-04-03	435	83		
2017-03-02	313	70		
2017-02-01	283	62		
2017-01-03	261	56		
2016-12-01	294	65		
2016-11-01	1528	306		
2016-10-03	4906	873		
2016-09-01	5773	1017		
2016-08-01	7886	1107		
2016-07-01	6971	1216		
2016-06-01	3750	681		

Typical season Admin uses around 5 million for landscape and cooling tower

Note: EAST Side watering should be reduced with NEW efficient sprinkler heads and properly adjusted to water grass; East side trees will have dedicated drip/bubbler 95% efficient

M&V will use flow sensors to analyse West, East sprays and drip

Water projects have a notoriously long payback period. The ROI for this project has been calculated using just the cost of the turf conversion against the estimated cost of irrigating that same turf area, at approximately 6.3 years. (\$10,300/1.5M gallons)



Bill End Date	Meter Cost	Use	Total SEASON KGAL irrigation and cooling tower (MINUS INDOORS)	= Gallons	High estimate HVAC tower uses 1 million	AVERAGE EAST WEST 50%
2021-09-01	8368	1255				2,105,375
2021-08-02	8733	1310				
2021-07-01	7757	1163				
2021-06-02	2452	364	not complete season			
2021-05-03	369	42				
2021-04-01	311	32				
2021-03-02	290	29				
2021-02-01	273	25				
2021-01-04	273	25				
2020-12-02	319	37				
2020-11-02	1080	176				
2020-10-01	5423	844				
2020-09-01	8561	1321				
2020-08-04	9667	1489				
2020-07-02	6930	1073				
2020-06-01	8930	1377		5938	5,938,000	4,938,000
2020-05-01	401	57				2469000
2020-04-01	364	48				
2020-03-03	438	66				
2020-02-03	409	59				
2020-01-02	389	54				
2019-12-02	372	53				
2019-11-01	942	159				
2019-10-02	4302	699				
2019-09-03	10056	1601				
2019-08-02	7306	1170				
2019-07-05	5699	918				
2019-06-03	4097	667		4680	4,680,000	3,680,000
2019-05-02	551	89				1840000
2019-04-02	439	69				
2019-03-04	424	66				
2019-02-01	450	72				
2019-01-02	377	59				
2018-12-03	373	58				
2018-11-05	650	114				
2018-10-05	5527	1645				
2018-09-04	1555	285				
2018-08-03	5282	901				
2018-07-02	8180	1380				
2018-06-01	5803	987				
2018-05-02	708	125		4855	4,855,000	3,855,000
2018-04-02	460	78				1927500
2018-03-02	433	71				
2018-02-01	393	75				
2018-01-02	331	63				
2017-12-01	393	75				

east & west 50% GALLONS

2017-11-01	451	86				
2017-10-02	3736	652				
2017-09-01	5515	947				
2017-08-03	9302	1575				
2017-07-03	6612	1129				
2017-06-02	5256	904				
2017-05-03	3610	631	5370	5,370,000	4,370,000	2185000
2017-04-03	435	83				
2017-03-02	313	70				
2017-02-01	283	62				
2017-01-03	261	56				
2016-12-01	294	65				
2016-11-01	1528	306				
2016-10-03	4906	873				
2016-09-01	5773	1017				
2016-08-01	7886	1107				
2016-07-01	6971	1216				
2016-06-01	3750	681				
2016-05-02	817	171				
2016-04-01	370	85				
2016-03-02	273	93				
2016-02-01	243	82				
2016-01-04	265	90				
2015-12-01	238	80				
2015-11-02	1416	513				
2015-10-01	4922	901				
2015-09-01	5319	974				
2015-08-01	8436	1547				
2015-07-01	5275	966				
2015-06-02	1304	236				
2015-05-01	1783	324				
2015-04-01	333	115				
2015-03-02	273	93				
2015-02-02	275	89				
2015-01-02	266	91				
2014-12-01	236	80				
2014-11-01	1916	702				
2014-10-01	4238	781				
2014-09-02	5480	1011				
2014-08-01	8568	1583				
2014-07-01	5895	1088				
2014-06-02	4778	821				
2014-05-01	2796	514				
2014-04-01	598	214				
2014-03-03	317	110				
2014-02-01	323	112				
2014-01-02	352	123				
2013-11-29	284	104				



Arapahoe Plaza - 1610, 1690, 1790 W Littleton Blvd., Littleton CO
 Task 3 - Areas approximate

ARAPAHOE PLAZA EAST IRRIGATION USE

Task 3

Billing Period	Bill End Date	Meter Cost	Use KGAL	IRRIGATION KGAL	x1000
202107	2021-08-02	649	98	93	
202106	2021-07-01	662	100	95	
202105	2021-06-02	125	19	14	
202104	2021-05-03	40	4		
202103	2021-04-01	40	4		
202102	2021-03-02	48	6		
202101	2021-02-01	36	3		
202012	2021-01-04	40	4		
202011	2020-12-02	39	4		
202010	2020-11-02	129	21		
202009	2020-10-01	676	106	99	
202008	2020-09-01	676	106	99	
202007	2020-08-03	649	102	95	
202006	2020-07-02	682	107	100	
202005	2020-06-01	623	98	91	
202004	2020-05-01	94	15	8	
202003	2020-04-01	47	6		
202002	2020-03-03	51	7		
202001	2020-02-03	73	11		
201912	2020-01-02	56	8		
201911	2019-12-02	54	8		
201910	2019-11-01	138	23	16	
201909	2019-10-02	584	94	87	
201908	2019-09-03	660	106	99	
201907	2019-08-02	609	98	91	
201906	2019-07-03	571	92	85	
201905	2019-06-03	558	90	83	
201904	2019-05-02	88	14	7	
201903	2019-04-02	50	7		
201902	2019-03-04	50	7		
201901	2019-02-01	58	9		

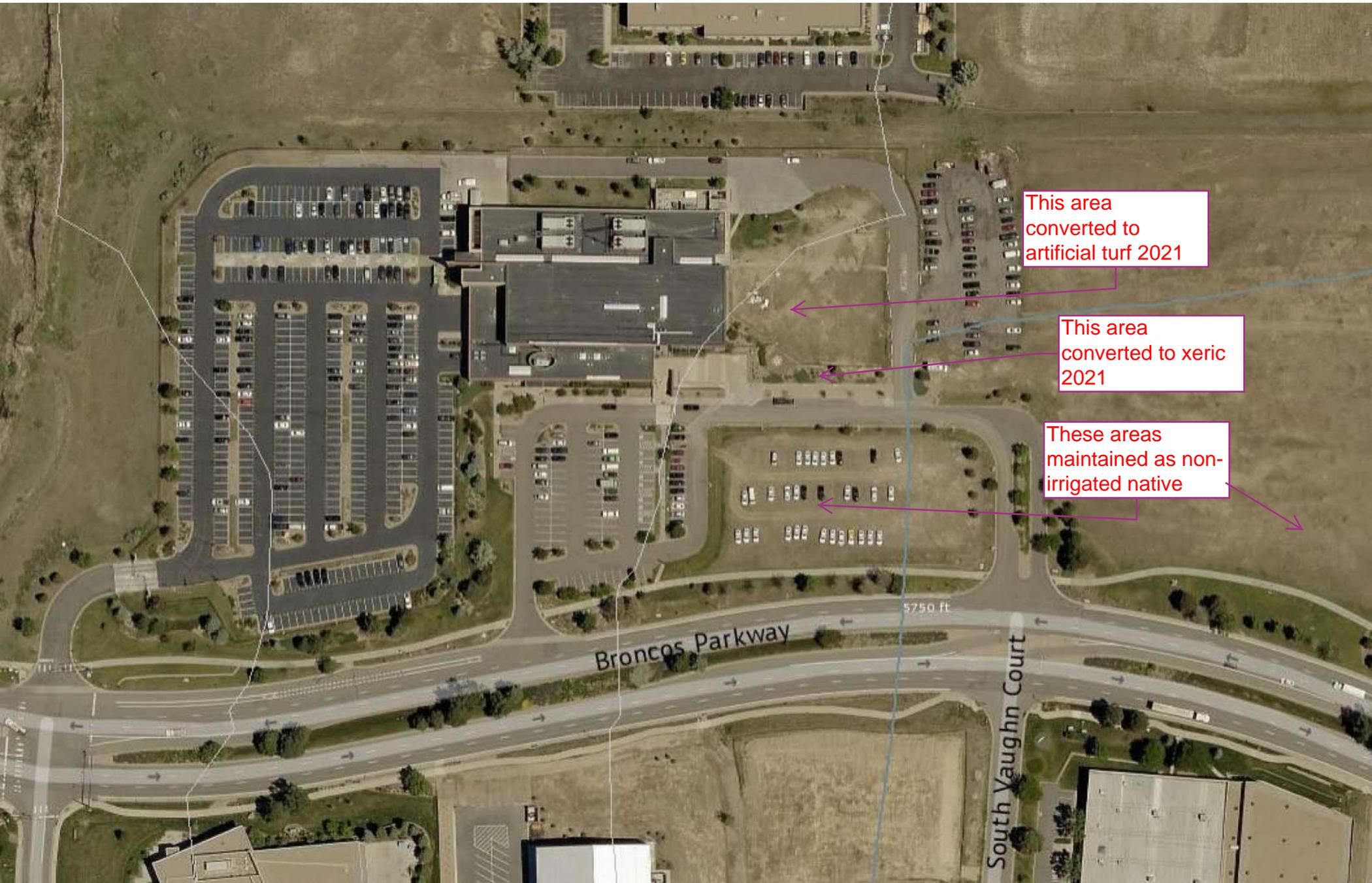


Centrepoint Plaza 14980 E Alameda Pkwy, Aurora - mix turf, native & xeric
Task 4

CENTREPOINT PLAZA IRRIGATION WATER USE

Task 4

Billing Period	Bill End Date	WATER \$	Use	SEWER \$	21 2021 winter	Irrigation KGALS minus estimated HVAC roof preevaps	
Sep			651		69	2020 winter	580
Aug			1004		73	2019 winter	933
202107	2021-07-15	5599	937	515			866
202106	2021-06-15	523	86	678			15
202105	2021-05-14	304	35	598			0
202104	2021-04-14	234	23	598			
202103	2021-03-16	240	24	804			
202102	2021-02-10	210	19	804			
202101	2021-01-14	181	14	804			
202012	2020-12-15	210	19	804			
202011	2020-11-12	257	27	804			
202010	2020-10-14	2646	434	804			315
202009	2020-09-16	4378	729	804			610
202008	2020-08-14	5106	853	804			734
202007	2020-07-16	4818	804	804			685
202006	2020-06-15	4572	762	804			643
202005	2020-05-14	1214	190	804			71
202004	2020-04-15	210	19	804			
202003	2020-03-16	563	79	810			
202002	2020-02-13	516	71	810			
202001	2020-01-15	527	73	802			
201912	2019-12-12	486	60	796			
201911	2019-11-13	477	62	786			
201910	2019-10-16	2429	397	796			274
201909	2019-09-16	4584	764	796			641
201908	2019-08-15	6133	1028	796			905
201907	2019-07-16	4437	739	796			616
201906	2019-06-14	2447	400	796			277
201905	2019-05-15	974	149	796			26
201904	2019-04-15	563	79	796			
201903	2019-03-15	533	74	822			
201902	2019-02-13	533	74	822			
201901	2019-01-15	503	70	814			



This area converted to artificial turf 2021

This area converted to xeric 2021

These areas maintained as non-irrigated native

Task 5 - Sheriff-Coroner Administration, 13101 E Broncos Pkwy

Project consists of trees/irrigation around perimeter of site

SHERIFF-CORONER FACILITY LANDSCAPE WATER USE

Task 5

Billing Period	Bill End Date	Meter Cost	Use
202107	2021-07-28	106	1157
202106	2021-06-21	106	281
202105	2021-05-20	106	0
202011	2020-11-24	106	0
202010	2020-10-26	2383.3	330
202009	2020-09-24	5125.13	629
202008	2020-08-22	6051.3	730
202007	2020-07-21	5697.71	703
202006	2020-06-23	3276.83	439
202005	2020-05-26	2598.25	365
202004	2020-04-20	106	0
202003	2020-03-24	106	0
202002	2020-02-24	106	0
202001	2020-01-23	106	0
201912	2019-12-21	106	0
201911	2019-11-20	106	0
201910	2019-10-25	1026	156
201909	2019-09-23	4255.6	548
201908	2019-08-24	6130.7	717
201907	2019-07-24	3490.2	462
201906	2019-06-26	2244.2	322
201905	2019-05-27	798.8	124
201904	2019-04-26	115.08	2
201903	2019-03-29	106	0
201902	2019-02-25	106	0
201901	2019-01-24	106	0



ARAPAHOE COUNTY

FACILITIES AND FLEET MANAGEMENT

Arapahoe Plaza
1610 West Littleton Blvd. Suite 100
Littleton, Colorado 80120-5707
303 734-5489
arapahoegov.com

November 15, 2021

Kevin Reidy
Colorado Water Conservation Board
Waterplan.grants@state.co.us

Re: Conservation, Land Use Planning Grant, Letter of Matching

This letter is to acknowledge Arapahoe County Government's commitment to matching the funds requested in its November 23, 2021 application for Conservation, Land Use Planning Grant, in a minimum amount of \$46,068. Funds for these purposes have been appropriated in the 2021 budget (to be carried forward to 2022) and additional funding is requested, pending final approval of the 2022 budget, for the 2022 design projects.

Sincerely,

Patrick O'Neill, Director
Facilities and Fleet Management