COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Kevin Reidy, Water Supply Planning Section

DATE: November 15-16, 2017 Board Meeting

AGENDA ITEM: 33a-d. Water Plan Grants – Water Conservation and Land Use Initial Consideration

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This item is for consideration only. No Action is required at this time

Introduction

There are four grants that have been recommended for review totaling $283,036 with $602,964 remaining. At present time, there are 5 additional applications that are "intent to apply" status for the February board meeting.

Applicant	Project Name	Request	% of Project	Staff Support
Northwest Colorado Council of Governments-Quality/Quantity Committee	Water Saving Measures in Land Use Codes in the Headwaters	$25,500	34%	$25,500
WateReuse Colorado	Development of Colorado Guidelines for Direct Potable Reuse	$65,000	65%	$65,000
Colorado State University	Linking Urban Landscape Irrigation, Urban Growth Density and Return Flows	$142,536	50%	$142,536
Colorado Spring Utilities	Homebuyer Landscape Outreach Program	$50,000	50%	$50,000

Staff Review and Comments

a. Northwest Colorado Council of Governments-Water Saving Measures in Land Use Codes in the Headwaters

The project addresses several important components of achieving the 75% of Coloradans living in communities that have incorporated water-saving actions into land use planning goal. First, the inventory of existing land use measures that address water savings and water quality will help in identifying how many Coloradans currently live in communities with water savings measures in their land use codes. Secondly, the project will develop a model code that will make incorporating such measures easier for communities in the QQ region and around the State. Finally, with technical assistance, five communities in the QQ region will incorporate or strengthen water savings measures in their land use codes, getting the State closer to its goal of 75% and setting an example for other communities around the State.

Staff supports for approval in January.

b. WateReuse Colorado- Development of Colorado Guidelines for Direct Potable Reuse

The proposed project will use a small panel of experts (national and Colorado-based), CDPHE and stakeholders to create an interim "Colorado Guidelines for Direct Potable Reuse" including all technical information needed to draft a formal proposal for regulations including:

- Defining proposed DPR treatment, monitoring and management guidelines that are protective of public health and enable communities to make sound investments in infrastructure,
- Detailing content of proposed CDPHE Regulations, Policy, and Guidelines
- Recommending pollutant concentrations and removal rates based on peer-reviewed research

Staff supports for approval in January.

c. Colorado State University-Linking Urban Landscape Irrigation, Urban Growth Density and Return Flows

The proposed work will provide valuable decision information to help cities reduce future demand by quantifying the links between landscape irrigation and urban growth density. To develop and demonstrate the methodologies, landscape irrigation for vegetated residential parcels will be compared across housing densities in the service area of Fort Collins Utilities. Consumptive use by vegetation on these same residential parcels will be quantified using high-resolution optical, near infrared, and thermal aerial imagery. Combining imagery-derived evapotranspiration and irrigation rates per parcel will yield estimates of lawn irrigation return flows. The deliverables from this project will include values of seasonal irrigation in gallons per pervious square foot for various housing and landscape types, and could be used to predict water demand with future growth densities, develop water budgets, and inform land use planning decisions as they relate to water use in Fort Collins and across urban areas in Colorado.

Staff supports for approval in January.

d. Colorado Springs Utilities- Homebuyer Landscape Outreach Program

The project will promote the efficient use of water in the landscape and introduce participants to the resources Utilities provides to help them make the most effective use of our water resources now and in the future. This project will engage residential water customers in a variety of water issues. Utilities will invite water customers who buy a home in 2018 to participate in a class which will provide them with information about our water system, Colorado water issues, and water use efficiency. We will provide information about the value of landscapes; how to maximize value by investing in water efficient, resilient, and sustainable landscapes; and offer additional online/email education over time.

Staff supports for approval in January.

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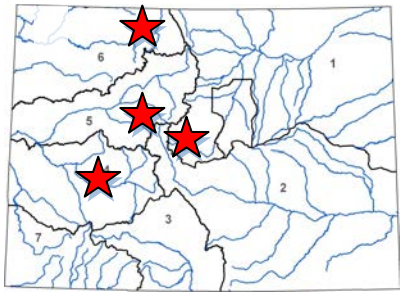
Water Savings Measures in Land Use Codes
Northwest Colorado Council of Governments-QQ

November 2017 Board Meeting
Initial Consideration

Water Plan Grant Application



LOCATION	
County/Counties:	
Drainage Basin:	Colorado; Yampa; Gunnison; South Platte

DETAILS	
Total Project Cost:	$74,500
Water Plan Grant Request:	$25,500
Other CWCB Funding:	$5,000
Other Funding Amount:	$12,500
Applicant Match:	$31,500
Project Type(s): Study, Other(technical assistance to implement study in local governments)	
Project Category(Categories):	Conservation & Land Use
Measurable Result:	~150,000 Coloradans living in communities that incorporate water saving actions into land use planning

The project addresses several important components of achieving the 75% of Coloradans living in communities that have incorporated water-saving actions into land use planning goal. First, the inventory of existing land use measures that address water savings and water quality will help in identifying how many Coloradans currently live in communities with water savings measures in their land use codes. Secondly, the project will develop a model code that will make incorporating such measures easier for communities in the QQ region and around the State. Finally, with technical assistance, five communities in the QQ region will incorporate or strengthen water savings measures in their land use codes, getting the State closer to its goal of 75% and setting an example for other communities around the State.

The project will directly address two of the seven priorities outlined in the Colorado BIP: 1) encourage a high level of basinwide conservation, and 2) develop local water-conscious land use strategies. A letter of support from the Colorado Basin Roundtable confirms that this project will support the Roundtable's priorities from their BIP.

While significant project costs will be borne by QQ through the work of their contract staff, CWCB funding will allow for additional funding for development of the model code, attorney review, to match costs for a legal intern to research existing codes in the QQ region, and to offset some expense borne by the local governments receiving technical assistance to better integrate water savings into their land use code. The project benefits communities in the headwaters of the Colorado, Yampa, Gunnison and South Platte basins through their membership to QQ, and will have statewide benefit as a replicable model for other communities.

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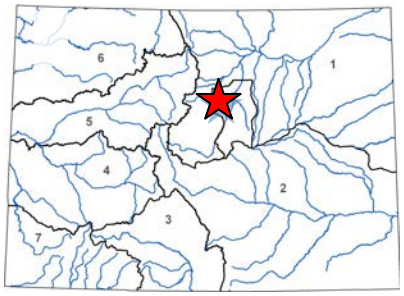
Development of Guidelines for Direct Potable Reuse in Colorado
WateReuse Colorado

November 2017 Board Meeting
Initial Consideration

Water Plan Grant Application



L O C A T I O N
County/Counties:
Drainage Basin: Metro, Arkansas, South Platte; Statewide

D E T A I L S	
Total Project Cost:	$100,000
Water Plan Grant Request:	$65,000
Other CWCB Funding:	$
Other Funding Amount:	$25,000
Applicant Match:	$10,000
Project Type(s): Study, IPP	
Project Category(Categories): Conservation & Land Use	
Measurable Result: Achieving the 58,000 af+ of South Platte reuse IPP's and 23,000-32,000 af of Arkansas Basin reuse IPP's identified in SWSI 2010	

Colorado does not have direct potable reuse (DPR) regulations and no federal regulations exist. Utilities with legally reusable supplies, who are considering DPR, face uncertainty regarding design, operational and cost requirements. One of the actions in the reuse section of Colorado's Water Plan is "Clarify the regulatory environment: Over the next two years, the CWCB and the CDPHE will work with stakeholders to examine the application of water quality regulations to reuse water. The aim will be to identify potential change that fosters permanent growth in the reuse of limited water supplies, and that protects health and the environment" and one of the Water Plan Critical Actions includes "Evaluate regulations to foster reuse of water supplies while protecting health and the environments".

At present, WRCO is working on a collaborative project, "Advancing Direct Potable Reuse to Optimize Water Supplies and Meet Future Demands", to develop a DPR regulatory framework to be completed in early 2018 funded through a WSRF grant. Deliverables from this project are a critical first step for DPR to become a viable option in Colorado. Following completion of this project, details of proposed DRP Regulations, Policy, and Guidelines must be created.

The proposed project will use a small panel of experts (national and Colorado-based), CDPHE and stakeholders to:

- Define proposed DPR treatment, monitoring and management guidelines that are protective of public health and enable communities to make sound investments in infrastructure,
- Detail content of proposed CDPHE Regulations, Policy, and Guidelines
- Recommend pollutant concentrations and removal rates based on peer-reviewed research

The panel will create an interim "Colorado Guidelines for Direct Potable Reuse" including all technical information needed to draft a formal proposal for regulations. Project funds will support The National Water Research Institute (NWRI) to manage the panel, panel expenses, and Western Resource Advocates to serve as the local project manager. This project will help Colorado communities optimize on reusable water supplies, alleviating pressure on streams, the West Slope and agricultural sources.

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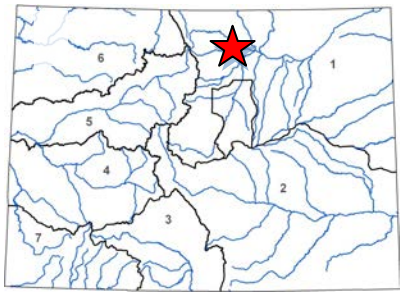
Linking urban landscape irrigation, urban growth density and return flows Colorado State University

November 2017 Board Meeting
Initial Consideration

Water Plan Grant Application



LOCATION	
County/Counties:	*Larimer*
Drainage Basin: South Platte	

DETAILS	
Total Project Cost:	$285,930
Water Plan Grant Request:	$142,536
Other CWCB Funding:	$
Other Funding Amount:	$
Applicant Match:	$143,394
Project Type(s): Study	
Project Category(Categories): Conservation & Land Use	
Measurable Result: Assess water demand for different types of development which will create needed water savings data for SWSI and ultimately contribute towards the 400,000 af stretch goal.	

The proposed work will provide valuable decision information to help cities reduce future demand by quantifying the links between landscape irrigation and urban growth density. To develop and demonstrate the methodologies, landscape irrigation for vegetated residential parcels will be compared across housing densities in the service area of Fort Collins Utilities. Consumptive use by vegetation on these same residential parcels will be quantified using high-resolution optical, near infrared, and thermal aerial imagery. Combining imagery-derived evapotranspiration and irrigation rates per parcel will yield estimates of lawn irrigation return flows. The deliverables from this project will include values of seasonal irrigation in gallons per pervious square foot for various housing and landscape types, and could be used to predict water demand with future growth densities, develop water budgets, and inform land use planning decisions as they relate to water use in Fort Collins and across urban areas in Colorado.

The proposed project is complementary to a number of other CWCB programs. The Colorado Water and Growth Dialogue with the Keystone Policy Center is focusing on Aurora Water and Denver Water. The proposed study area of Fort Collins will be compared to results from Aurora and Denver to see how variable the relationship between water demand and housing density is for different urban areas within Colorado. The empirical results from Fort Collins will be used to inform typical irrigation gallons per pervious square foot (GPSF) and GPSF variability in the model and tool that is being produced from the Colorado Water and Growth Dialogue.

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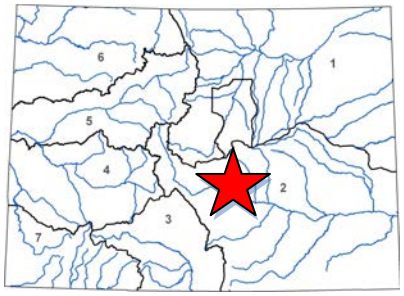
Homebuyer Landscape Outreach Program
Colorado Springs Utilities

November 2017 Board Meeting
Initial Consideration

Water Plan Grant Application



LOCATION	
County/Counties:	El Paso
Drainage Basin:	Arkansas

DETAILS	
Total Project Cost:	$100,000
Water Plan Grant Request:	$50,000
Applicant Match:	$50,000
Project Type(s):	Education
Project Category(Categories):	Engagement & Innovation
Measurable Result:	≈800 (16,000 contacted) impacted by engagement activity. ≈3 AF/year directly; likely more indirectly – efficiency savings

The project will promote the efficient use of water in the landscape and introduce participants to the resources Utilities provides to help them make the most effective use of our water resources now and in the future. Collaborator objectives in the project include improved urban forest health, improved stormwater management, reduced peak energy demand, increased quality of life and property values, and stronger community engagement.

This project will engage residential water customers in a variety of water issues. Utilities will invite water customers who buy a home in 2018 to participate in a class which will provide them with information about our water system, Colorado water issues, and water use efficiency. We will provide information about the value of landscapes; how to maximize value by investing in water efficient, resilient, and sustainable landscapes; and offer additional online/email education over time.

Utilities will provide an incentive for homebuyers to participate in the form of a tree coupon redeemable at local nurseries. We will work collaboratively with the City of Colorado Springs' Forestry and Stormwater Departments, Utilities' Energy Division, Green Industry professionals, neighborhood associations, and realtors. These collaborators will help participants learn to consider stormwater management, tree health, property value, and energy efficiency in their landscaping efforts.

Approximately 16,000 residential customers in our water service area will be notified each year. We expect to limit participation to 800 customers each year. Once involved, many of these customers will remain engaged through ongoing activities and resources we provide.

The water use efficiency aspects of this project helps us meet the Arkansas Basin Implementation Plan goal of meeting the municipal supply gap in each county within the basin listed in section 1.6.2.1. The project also fits within Chapter 4 Projects and Methods under 4.3 Municipal Water Conservation in section 4.3.3.6 Customer Education and section 4.3.3.8 Landscape Management in the BIP.

By engaging deeply and in an ongoing manner with our customers and promoting existing resources on various water and water use efficiency issues, this project also moves us toward reaching the Colorado Water Plan Conservation Stretch Goal.