COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	South Metro Water Supply Authority
Name of Water Project	XBAT Pilot Study
Grant Request Amount	**$800,000.00**
Primary Category	$800,000.00
Engagement & Innovation Activities	
Total Applicant Match	**$325,000.00**
Applicant Cash Match	$300,000.00
Applicant In-Kind Match	$25,000.00
Total Other Sources of Funding	**$436,000.00**
Aurora Water	$300,000.00
Denver Water	$10,000.00
Aurora Water	$25,000.00
Denver Water	$1,000.00
Metro Water Recovery	$75,000.00
Metro Water Recovery	$25,000.00
Total Project Cost	**$1,561,000.00**

Applicant & Grantee Information

Name of Grantee: South Metro Water Supply Authority
Mailing Address: 8400 East Prentice Avenue, Ste 315 Greenwood Village CO 80111
FEIN: 611,497,221

Organization Contact: Chris Muller
Position/Title: Senior Water Resources Engineer
Phone: 7205308282
Email: chrismuller@southmetrowater.org

Organization Contact - Alternate: Erik Jorgensen
Position/Title:
Phone: 720-934-7391
Email: erikjorgensen@southmetrowater.org

Grant Management Contact: Chris Muller
Position/Title: Senior Water Resources Engineer
Phone: 7205308282
Email: chrismuller@southmetrowater.org

Description of Grantee/Applicant

No description provided

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.
- [x] Engagement & Innovation Activities
  Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website.
- [ ] Watershed Restoration & Recreation
  Projects that promote watershed health, environmental health, and recreation.
- [ ] Water Storage & Supply
  Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.

Location of Water Project

Latitude	39.761390
Longitude	104.854340
Lat Long Flag	Precise coordinates: Project coordinates are readily definable and precisely define the location of the project
Water Source	South Platte River Water from Prairie Waters Project and Sand Creek Water Reclamation Facility Effluent
Basins	Metro
Counties	Arapahoe; Adams; Douglas; Denver
Districts	8-South Platte Cheesman to Denver Gage

Water Project Overview

Major Water Use Type	Municipal
Type of Water Project	Design / Engineering
Scheduled Start Date - Design	4/15/2024
Scheduled Start Date - Construction	

Description

We are proposing to pilot an XBAT system and a RO system at the Aurora Water's Sand Creek Water Reclamation Facility to be able to compare the system costs and benefits. The project will quantify and compare the resulting water quality; operations and maintenance costs; brine quantity; and brine classification for disposal. The pilot will run for a minimum of 6 months to collect data that will be used to develop a pilot study report

summarizing these findings. We believe this technology could continue to advance water reusability in Colorado without the use of high-pressure membranes. We also believe the potential reduction in operating and maintenance costs with increased water recovery rates could lead to water providers using this technology instead of seeking out new water supplies for the purpose of blending to meet water quality standards.

Measurable Results

0	New Storage Created (acre-feet)
0	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
0	Existing Storage Preserved or Enhanced (acre-feet)
0	New Storage Created (acre-feet)
0	Length of Stream Restored or Protected (linear feet)
0.00	Length of Pipe, Canal Built or Improved (linear feet)
$0	Efficiency Savings (dollars/year)
0	Efficiency Savings (acre-feet/year)
0	Area of Restored or Preserved Habitat (acres)
0	Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement (acre-feet)
300,000	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
300,000	Number of Coloradans Impacted by Engagement Activity

Other

This is a pilot study that could open the door for future projects that could have a quantifiable water savings

Water Project Justification

Colorado municipal water providers continue to try to close the water gap by optimizing renewable water supplies. To optimize these supplies, municipal water providers are trying to maximize reusability of water by being able to control the total dissolved solids in the water and in the future will need to be able to meet direct potable reuse standards. Traditionally this challenge has led water providers to evaluate reverse osmosis (RO) systems that are expensive to operate and can recover as little as 85% of the water, with the other 15% typically being lost to deep well injection. A new ion exchange approach is being tested (XBAT) that hopes to result in lower operation and maintenance costs with up to a 99.2% recovery rate and help meet direct potable reuse requirements. By reducing the water lost during the process, municipalities would not need to pursue as much much water to meet growing demands.

Related Studies

An XBAT pilot has been done is Florida but we are unaware of any pilots in Colorado. We are also unaware of any pilots that test that directly compare XBAT and RO on the same water at the same time.

Taxpayer Bill of Rights

We do not foresee any tabor limitation concerns