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	SMWSA Regional ASR Project Phase 2: Modeling & Characterization of the Groundwater System
Grant Request Amount	**$640,000.00**
Primary Category	$640,000.00
Water Storage & Supply	
Total Applicant Match	**$216,000.00**
Applicant Cash Match	$166,000.00
Applicant In-Kind Match	$50,000.00
Total Other Sources of Funding	**$0.00**
Total Project Cost	**$856,000.00**

Applicant & Grantee Information

Name of Grantee: South Metro Water Supply Authority
Mailing Address: 116 Inverness Drive #270 Englewood CO 80112

Organization Contact: Lisa Darling
Position/Title: Executive Director
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Organization Contact - Alternate: Chris Muller
Position/Title: Senior Water Resources Engineer
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Grant Management Contact: Lisa Darling
Position/Title: Executive Director
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Grant Management Contact - Alternate: Angie Grunder
Position/Title:
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Engineering Contact: Nathan Watson
Position/Title: Water Resources Engineer
Phone: 7202165158
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Description of Grantee/Applicant

No description provided

Type of Eligible Entity

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- [ ] 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.
- [x] 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	39.619490
Longitude	-104.891000
Lat Long Flag	County centroid: Coordinates based on centroid of county boundary
Water Source	Member-renewable water supplies to be stored in the Denver Basin aquifers
Basins	Metro
Counties	Douglas; Arapahoe
Districts	

Water Project Overview

Major Water Use Type	Municipal
Type of Water Project	Study
Scheduled Start Date - Design	1/1/2026
Scheduled Start Date - Construction	

Description

Phase 1 of the SMWSA (South Metro Water Supply Authority) Regional ASR (Aquifer Storage & Recovery) Study identified the South Metro area as one of the preeminent locations in Colorado to implement ASR on a regional level due to the existing ASR infrastructure & the ideal characteristics of the aquifers in the region.

Phase 2 will further evaluate the feasibility of implementing a regional ASR system in the South Metro region by

refining the USGS (United States Geological Survey) model that currently provides the hydrogeological framework of the area. This process would include a few critical steps including: 1) an evaluation of any legal concerns that may arise due to water administration and accounting, emerging water quality restrictions and contaminants, 2) the refinement of the current USGS groundwater model for the South Metro area, and 3) the development of a model to evaluate the effects that an ASR system would have on the surrounding hydrogeologic subsurface.

This phase of the project will perform the legal & modeling work simultaneously to allow for completion over a 3-year timeframe. For this reason, the task list is subdivided into Tasks 1-2 (Gabe Racz, esq., Clark Hill PLC) and Tasks 3-8 (INTERA).

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)
Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
Number of Coloradans Impacted by Engagement Activity

Other

The modeling process of Phase 2 will help us determine the feasibility of a regional ASR system within the South Metro area. If proven feasible, additional storage in the Denver Basin aquifers will be accessible while simultaneously assisting in the mitigation of local aquifer declines.

Water Project Justification

Chapter 5 of the latest Colorado Water Plan (2023) addresses the opportunity for additional storage through ASR (pg. 175). The proposed study will develop a refined model of the South Metro region as a whole, as well as its ability to execute ASR on a regional scale. Centennial Water and Sanitation District, East Cherry Creek Valley and the Town of Castle Rock have been identified as the regional hubs for this project, as their preexisting work with ASR can be built off of. The resultant model would be able to test numerous injection & extraction scenarios on an extremely focused level in order to monitor & track mound characteristics as well as identify reasonable durations of storage as to avoid adverse impacts to the aquifer.

This project will also address Section 4 of the South Platte Basin Implentation Plan (pg. 26-30). This section of the plan includes the following goals, with the correspondent description on how they relate to the regional ASR project.

Goal 1 - Encourage the Implementation of Projects: Many of the SMWSA (South Metro Water Supply Authority) members already either have permits to perform/ pilot ASR, or they already have existing ASR infrastructure. Phase 2 of this study will assess the feasibility of the interconnection of separate ASR systems to form a regional ASR network.

Goal 2 - Maximize Development of Native South Platte Supplies: A refined groundwater model will allow SMWSA members to develop new storage strategies and provide additional yield & resilience in times of need.

Goal 3 - Maintain and Improve Municipal & Industrial Conservation & Efficiency: In comparison to surface water, ASR is not subject to evaporative losses when stored underground. Furthermore, in years of excess runoff, ASR can serve as an additional storage strategy. Ultimately, this means that our members retain more of the water that they have purchased. Regarding conservation, an optimized ASR system would assist in mitigating local aquifer declines.

Related Studies

South Metro Water Supply Authority Regional Aquifer Storage Recovery (ASR) Groundwater Model (Phase 1)

Taxpayer Bill of Rights

N/A