Water Supply Reserve Fund
Water Activity Summary Sheet
March 21-22, 2018
Agenda Item 25(q)

Applicant & Grantee:	South Metro WISE Authority
Water Activity Name:	Regional Investigation of Salinity Management Options
Water Activity Purpose:	Municipal/Industrial Study
County:	Adams, Arapahoe, Denver, Douglas, and Jefferson Counties
Drainage Basin:	South Platte
Water Source:	South Platte return flows
Amount Requested:	$30,000 Metro Account $97,500 Statewide Account $127,500 Total Grant Request
Matching Funds:	Basin Account Match = $30,000 • 31% of statewide request (meets 10% min) Applicant Match (cash & in-kind) = $67,500 • 69% of the statewide request (meets 10% min) Total Match (Basin & Applicant) = $97,500 • 100% of the statewide request (meets 50% min) • 50% of the total project cost of $195,000

Staff Recommendation:
Staff recommends approval of up to $30,000 from the Metro Account and $97,500 from the Statewide Account to fund the project: Regional Investigation of Salinity Management Options.

Water Activity Summary: WSRF grant funds, if approved, will help the South Metro WISE Authority (SMWA) address water quality issues, including salinity management alternatives. This work is a continuation of the partnership between Aurora Water, Denver Water, and the WISE Authority to fully develop this regional water supply project. The Water Delivery Agreement between the parties addresses the need for this study, for the partners to utilize a treated, but unblended, water supply from Aurora Water's Prairie Waters system to Denver Water and the Authority through the WISE Authority distribution system.

The study will identify options to reduce salinity levels in water diverted from the South Platte River north of the Denver Region allowing for 10,000 acre-feet of reuse water to be utilized. The WISE Project includes the delivery of Aurora Water and Denver Water reusable return flows to the SMWA, allowing SMWA members to reduce dependence on non-renewable groundwater. WISE water is diverted from the South Platte River north of the Metro region, which regularly has Total Dissolved Solids concentrations exceeding the U.S. EPA secondary maximum contaminant level of 500 mg/L. Two common methods for reducing TDS concentrations are blending elevated TDS water with low TDS water or physical removal with desalination treatment technologies.

Discussion: As described in the Metro Roundtable chair's recommendation letter, this project was supported and recommended for approval on January 11, 2018. The WISE Partnership has been identified as a Metro and South Platte IPP for a number of years. This project assists in satisfying Colorado's Water Plan Critical Goals and Actions as identified in Chapter 10.3, A. Supply and Demand to help provide valuable information for water users on the South Platte River in future planning.

Through May 2030, Aurora Water and Denver Water have agreed to provide WISE with low TDS blending water. Following May 2030, Aurora Water and Denver Water may have other needs for this water and therefore may not be able to provide low TDS blend water to WISE. This investigation explores a wide array of options to mitigate high TDS reusable return flows from the South Platte. When practical, options will be configured to allow others in the region to use desalination options to combat similar salinity issues. This investigation is scheduled to start mid-June of 2018 and will be completed by June of 2019.

The WISE Authority was formed to implement the Water Infrastructure and Supply Efficiency (WISE) Project. The WISE Project membership includes: Centennial Water & Sanitation District, Cottonwood Water & Sanitation District, Dominion Water & Sanitation District, Inverness Water & Sanitation District, Meridian Metropolitan District, Parker Water & Sanitation District, Rangeview Metropolitan District, Stonegate Village Metropolitan District, and Town of Castle Rock. These municipalities serve the majority of water users in Douglas County and a small portion of water users in Arapahoe County.

Issues/Additional Needs: No additional needs have been identified.

Eligibility Requirements: The application meets requirements of all eligibility components.

Evaluation Criteria: Staff has determined this activity satisfies the Evaluation Criteria.

Funding Summary / Matching Funds:

Funding Source	**Cash**	**In-Kind**	**Total**
South Metro WISE Authority	$22,500	$12,000	$34,500
Denver Water	$11,250	$3,500	$14,750
Aurora Water	$11,250	$7,000	$18,250
Subtotal	**$45,000**	**$22,500**	**$67,500**
WSRF Metro Account	$30,000	n/a	$30,000
WSRF Statewide Account	$97,500	n/a	$97,500
Totals	**$172,500**	**$22,500**	**$195,000**

CWCB Project Manager: Megan Holcomb

Metro Roundtable

January 24, 2018

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, CO 80203

RE: Metro Roundtable Letter of Support

Dear Honorable Board Members,

On behalf of the Metro Roundtable, acting as its Chairwoman, I am writing to express the Roundtable's support for the Water Supply Reserve Fund (WSRF) grant program application submitted by the South Metro WISE Authority (Authority) for the Salinity Management Study project.

The next phase of the Water Infrastructure and Supply Efficiency (WISE) Partnership will address water quality issues, including salinity management alternatives. This work is a continuation of the partnership between Aurora Water, Denver Water, and the WISE Authority to fully develop this regional water supply project. The Water Delivery Agreement (WDA) between the parties addresses the need for this study, for the partners to utilize a treated, but unblended, water supply from Aurora Water's Prairie Waters system to Denver Water and the Authority through the WISE Authority distribution system. The WISE Partnership has been identified as an IPP for a number of years.

The Authority is seeking a CWCB WSRF grant to help with this investigation, which will explore a wide array of options to mitigate high TDS reusable return flows from the South Platte. When practical, options will be configured to allow others in the region to use desalination options to combat similar salinity issues. This investigation is scheduled to start mid-June of 2018 and will be completed by June 2019. The Metro Roundtable is contributing $30,000 in cash funding, with the remaining funding and in-kind services primarily provided by the Authority, with contributions from Aurora Water and Denver Water. We believe that this study will provide invaluable information for water users on the South Platte River in their future planning. Please contact me at Barbara@roxwater.org if you have any questions regarding this Letter of Support.

Sincerely,

/s/ *Barbara Biggs*

Barbara Biggs, Chairwoman
Metro Roundtable

Last Update: August 3, 2017

Colorado Water Conservation Board

Water Supply Reserve Fund
Grant Application

Instructions

All WSRF grant applications shall conform to the current 2016 WSRF Criteria and Guidelines.

To receive funding from the WSRF, a proposed water activity must be approved by a Roundtable(s) **AND** the Colorado Water Conservation Board (CWCB). The process for Roundtable consideration and recommendation is outlined in the 2016 WSRF Criteria and Guidelines. The CWCB meets bimonthly according to the schedule on page 2 of this application.

If you have questions, please contact the current CWCB staff Roundtable liaison:

Arkansas	**Gunnison | North Platte | South Platte | Yampa/White**	**Colorado | Metro | Rio Grande | Southwest**
Ben Wade	Craig Godbout	Megan Holcomb
ben.wade@state.co.us	craig.godbout@state.co.us	megan.holcomb@state.co.us
303-866-3441 x3238	303-866-3441 x3210	303-866-3441 x3222

WSRF Submittal Checklist (Required)

	I acknowledge this request for funding was recommended for CWCB approval by the sponsoring Basin Roundtable(s).
X	I acknowledge I have read and understand the 2016 WSRF Criteria and Guidelines.
X	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract.(1)
Exhibit A	
X	Statement of Work(2) *(Word – see Exhibit A Template)*
X	Budget & Schedule(2) *(Excel Spreadsheet – see Exhibit A Template)*
X	Letters of Matching and/or Pending 3rd Party Commitments(2)
Exhibit C	
NA	Map(2)
NA	Photos/Drawings/Reports
X	Letters of Support Metro Basin Roundtable
X	Certificate of Insurance(3) (General, Auto, & Workers' Comp.)
Contracting Documents	
	Certificate of Good Standing(3)
	W-9(3)
	Independent Contractor Form(3) (If applicant is individual, not company/organization)
	Electronic Funds Transfer (ETF) Form(3)

(1) Click "Grant Agreements". For reference only/do not fill out or submit/required for contracting
(2) Required with application if applicable.
(3) Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.

Last Update: August 3, 2017

Schedule		
CWCB Meeting	**Application Submittal Dates**	**Type of Request**
January	December 1	Basin Account; BIP
March	February 1	Basin/Statewide Account; BIP
May	April 1	Basin Account; BIP
July	June 1	Basin Account; BIP
September	August 1	Basin/Statewide Account; BIP
November	October 1	Basin Account/BIP

Desired Timeline	
Desired CWCB Hearing Month:	March 2018
Desired Notice to Proceed Date:	June 15, 2018

Water Activity Summary	
Name of Applicant	South Metro WISE Authority
Name of Water Activity	Investigation of Salinity Management Options for the WISE Partnership with Potential Shared Benefits by Other Metro Basin Water Users

Approving Roundtable(s)	Basin Account Request(s)(1)
Metro Roundtable	$30,000
Basin Account Request Subtotal	$30,000
Statewide Account Request(1)	$97,500
Total WSRF Funds Requested (Basin & Statewide)	$127,500
Total Project Costs	$195,000

(1) Please indicate the amount recommended for approval by the Roundtable(s)

Last Update: August 3, 2017

Grantee and Applicant Information	
Name of Grantee(s)	South Metro WISE Authority
Mailing Address	8400 East Prentice Avenue, Greenwood Village, CO 80111
FEIN	46-3061238
Grantee's Organization Contact(1)	Chris Muller
Position/Title	Water Resources/Design Engineer
Email	chrismuller@southmetrowater.org
Phone	(720) 216-5158
Grant Management Contact(2)	Mikal Martinez
Position/Title	Admin / Accounting Assistant
Email	mikalmartinez@southmetrowater.org
Phone	(720) 216-5158
Name of Applicant (if different than grantee)	NA
Mailing Address	NA
Position/Title	NA
Email	NA
Phone	NA

(1) Person with signatory authority
(2) Person responsible for creating reimbursement invoices (Invoice for Services) and corresponding with CWCB staff.

Description of Grantee
Provide a brief description of the grantee's organization (100 words or less).
South Metro WISE Authority (WISE Authority) was formed to implement the Water Infrastructure and Supply Efficiency (WISE) Project. The WISE Project membership includes: Centennial Water & Sanitation District, Cottonwood Water & Sanitation District, Dominion Water & Sanitation District, Inverness Water & Sanitation District, Meridian Metropolitan District, Parker Water & Sanitation District, Rangeview Metropolitan District, Stonegate Village Metropolitan District, and Town of Castle Rock. These municipalities serve the majority of water users in Douglas County and a small portion of the water users in Arapahoe County.

Last Update: August 3, 2017

Type of Eligible Entity (check one)	
	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, homeowner's associations, corporations
	Private Individuals, Partnerships, and Sole Proprietors: are eligible for funding from the Basin Accounts but not for funding from the Statewide Account.
	Non-governmental organizations: broadly, any organization that is not part of the government
	Covered Entity: as defined in Section 37-60-126 Colorado Revised Statutes

Type of Water Activity (check one)	
✓	Study
	Implementation

Category of Water Activity (check all that apply)		
	Nonconsumptive (Environmental)	
	Nonconsumptive (Recreational)	
	Agricultural	
✓	Municipal/Industrial	
	Needs Assessment	
	Education & Outreach	
	Other	Explain:

Location of Water Activity	
Please provide the general county and coordinates of the proposed activity below in **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Adams, Arapahoe, Denver, Douglas, and Jefferson Counties
Latitude	39.623078° N
Longitude	104.663117° W

Last Update: August 3, 2017

Water Activity Overview
Please provide a summary of the proposed water activity (200 words or less). Include a description of the activity and what the WSRF funding will be used for specifically (e.g. studies, permitting, construction). Provide a description of the water supply source to be utilized or the water body affected by the activity. 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, area of habitat improvements. If this project addresses multiple purposes or spans multiple basins, please explain. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, and Schedule.
The WISE Project includes the delivery of Aurora Water and Denver Water reusable return flows to the SMWA, allowing SMWA members to reduce dependence on non-renewable groundwater. WISE water is diverted from the South Platte River north of the Metro region, which regularly has Total Dissolved Solids concentrations exceeding the U.S. EPA secondary maximum contaminant level of 500 mg/L. Two common methods for reducing TDS concentrations are blending elevated TDS water with low TDS water or physical removal with desalination treatment technologies. Through May 2030, Aurora Water and Denver Water have agreed to provide WISE with low TDS blending water. Following May 2030, Aurora Water and Denver Water may have other needs for this water and therefore may not be able to provide low TDS blend water to WISE. This investigation explores a wide array of options to mitigate high TDS reusable return flows from the South Platte. When practical, options will be configured to allow others in the region to use desalination options to combat similar salinity issues. This investigation is scheduled to start mid-June of 2018 and will be completed by June of 2019.

Measurable Results		
To catalog measurable results achieved with WSRF funds please provide any of the following values.		
	New Storage Created (acre-feet)	
10,000 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)	
	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
	Area of Restored or Preserved Habitat (acres)	
	Length of Pipe/Canal Built or Improved	
Feasible options to reduce salinity levels identified.	Other	Explain: Study will identify options to reduce salinity levels in water diverted from the South Platte River north of the Denver Region allowing for 10,000 acre-feet of reuse water to be utilized.

Last Update: August 3, 2017

Water Activity Justification

Provide a description of how this water activity supports the goals of Colorado's Water Plan, the most recent Statewide Water Supply Initiative, and the respective Roundtable Basin Implementation Plan and Education Action Plan (1). 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).

For applications that include a request for funds from the Statewide Account, the proposed water activity shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan criteria for state support (CWP, Section 9.4, pp. 9-43 to 9-44;) (Also listed pp. 4-5 in 2016 WSRF Criteria and Guidelines).

Demonstrating a commitment to collaboration:
This work will be a collaborative effort between the 10 WISE Authority members and Aurora Water and Denver Water. In addition, the group will collaborate with East Cherry Creek Valley Water and Sanitation District on their lessons learned on inland desalination. Also, the study will identify potential solutions that may be used by others in the region to combat similar salinity issues.

Addressing an identified water gap:
The South Plate Basin Implementation Plan (BIP) states that, to address the relatively large projected supply gaps, we need to maximize the successive use and reuse (Section S.3.2) of water in the basin. The BIP subsequently states that the primary challenge with reuse in this region is that many of the waters are salinity impaired (Section S.3.7).

As described in detail in **Exhibit A**, this project investigates new strategies and technologies to manage salinity challenges and maximize the potential for successive reuses of water. If successful, the result of this project would reduce pressure for agricultural transfers and increased climate resiliency. This project is an IP&P as shown in Table 4-10 of the BIP.

Demonstrating sustainability:
SMWA members are using WISE water to replace a significant amount of their historical pumping of non-sustainable groundwater. The source of WISE water is reusable return flows which is a reliable supply and use of this water limits the need for additional transbasin diversions, which indirectly helps sustain agriculture and meet environmental needs. The project is also consistent with the South Platte Water Related Activities Program (SPWRAP), which works toward the recovery of threatened and endangered species. The project will not increase the risk of non-compliance with any interstate compacts.

Established fiscal and technical feasibility:
The WISE Authority, Denver Water and Aurora Water have the funds to support the remaining portion of the study. The WISE Partnership will be ready to proceed with the investigation as soon as the grant funding is made available. The anticipated project start date will be mid-June of 2018. No permits will be required to complete the scope of work included in this grant application.

This investigation will provide the partners with an improved understanding of key long-term fiscal and technical considerations associated with larger scale salinity management.

(1) Access Basin Implementation Plans or Education Action Plans from Basin drop down menu.

Matching Requirements: Basin Account Requests

Last Update: August 3, 2017

Matching Requirements: Basin Account Requests	
Basin (only) Account grant requests require a 25% match (cash and/or in-kind) from the Applicant or 3rd party and shall be accompanied by a **letter of commitment** as described in the 2016 WSRF Criteria and Guidelines (submitted on the contributing entity's letterhead). Attach additional sheet if necessary.	
Contributing Entity	Amount and Form of Match (note cash or in-kind)
Total Match	
If you requested a Waiver to the Basin Account matching requirements, indicate the percentage you wish waived.	

Matching Requirements: Statewide Account Requests	
Statewide Account grant requests require a 50% match as described in the 2016 WSRF Criteria and Guidelines. A minimum of 10% match shall be from Basin Account funds (cash only). A minimum of 10% match shall be provided by the applicant or 3rd party (cash, in-kind, or combination). The remaining 30% of the required match may be provided from any other source (Basin, applicant, or 3rd party) and shall be accompanied by a **letter of commitment.** Attach additional sheet if necessary.	
Contributing Entity	Amount and Form of Match (note cash or in-kind):
Metro Basin Account	$30,000 cash
South Metro WISE Authority	$22,500 cash
Denver Water	$11,250 cash
Aurora Water	$11,250 cash
South Metro WISE Authority	$12,000 in-kind
Denver Water	$3,500 in-kind
Aurora Water	$7,000 in-kind
Total Match	$97,500 cash and in-kind
If you requested a Waiver to the Statewide Account matching, indicate % you wish waived. (Max 50% reduction of requirement).	

Last Update: August 3, 2017

Related Studies

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

"East Cherry Creek Valley Water and Sanitation District Zero Liquid Discharge (ZLD) Pilot Study", funded by a grant (Contract No. 150412) from the State of Colorado, Colorado Water Conservation Board (CWCB), prepared for ECCV, prepared by CDM, 2008.

"Implementation of an Inland Brackish Groundwater Supply Project from Groundwater Recharge to Reverse Osmosis Treatment Plant and Brine Disposal", prepared for ECCV, prepared by ECCV et al., 2011.

"Regulatory and Permitting Review of a New RO Treatment Plant and Concentrate Disposal Alternatives", prepared for South Metro Water Supply Authority, prepared by CH2M Hill, 2018.

Previous CWCB Grants

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

1) SMWA on behalf of the Water Infrastructure and Supply Efficiency (WISE) Partnership
2) Western Pipeline Connection Engineering and Design
3) Metro Basin
4) September 2013
5) Contract # CTGG1 2015-391

1) SMWA on behalf of the Water Infrastructure and Supply Efficiency (WISE) Partnership
2) Conjunctive Use Infrastructure
3) Metro Basin, North Platte Basin, South Platte Basin, Colorado Basin, Arkansas Basin, Gunnison Basin, and Yampa/White Basin
4) September 2015
5) Contract # CTGG1 2016-1081

1) SMWA on behalf of the WISE Partnership
2) WISE Binney Connection
3) Metro Basin
4) November 2017
5) Contract # Pending

Tax Payer Bill of Rights

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

The WISE Authority does not anticipate any TABOR issues.

Last Update: January 9, 2018 (d.vigil)

Colorado Water Conservation Board	
Water Supply Reserve Fund	
Exhibit A - Statement of Work	
Date:	1/24/2018
Water Activity Name:	Investigation of Salinity Management Options for the WISE Partnership with Potential Shared Benefits by Other Metro Water Users
Grant Recipient:	South Metro WISE Authority
Funding Source:	Metro Basin Roundtable Account and Statewide Account

Water Activity Overview: (Please provide brief description of the proposed water activity (no more than 200 words). Include a description of the overall water activity and specifically what the WSRF funding will be used for.

The WISE Project includes the delivery of Aurora Water and Denver Water reusable return flows to the SMWA, allowing SMWA members to reduce dependence on non-renewable groundwater. WISE water is diverted from the South Platte River north of the Metro region, which regularly has Total Dissolved Solids concentrations exceeding the U.S. EPA secondary maximum contaminant level of 500 mg/L. Two common methods for reducing TDS concentrations are blending elevated TDS water with low TDS water or physical removal with desalination treatment technologies.

Through May 2030, Aurora Water and Denver Water have agreed to provide WISE with low TDS blending water. Following May 2030, Aurora Water and Denver Water may have other needs for this water and therefore may not be able to provide low TDS blend water to WISE. This investigation explores a wide array of options to mitigate high TDS reusable return flows from South Platte. When practical, options will be configured to allow others in the region to use desalination options to combat similar salinity issues. This investigation is scheduled to start mid-June of 2018 and will be completed by June of 2019.

Objectives: (List the objectives of the project)

1) Investigate how treatment options can be configured to reduce salinity in South Platte River return flows.
2) Study options for brine disposal beyond deep well injection including landfill disposal.
3) Develop blending concepts incorporating the extension of existing blending concepts and the identification of new blending concepts.
4) Gain deeper insight into long-standing questions on inland salinity management and brine disposal principals.

Last Update: January 9, 2018 (d.vigil)

Tasks
Provide a detailed description of each task using the following format:
Task 1 – Salinity Removal Options
Description of Task:
Evaluate treatment technologies and treatment site locations to physically remove dissolved solids from South Platte River return flows.
Method/Procedure:
Options Workshop: A workshop will be held with the project participants to discuss potential locations for desalination facilities. Sites expected to be considered include sites located near the Prairie Waters Project (PWP) North Campus, along the PWP Pipeline, and near the Aurora Binney Water Purification Facility. The merit of other potential sites will also be discussed. Desalination technologies will also be discussed with a focus on comparing benefits of traditional reverse osmosis technologies versus selective membrane technology that can selectively remove target ions (e.g sodium and chloride) while leaving other constituents in the water to minimize brine stream volume. In the later stages of the workshop, the goal will be to select three (3) sites and two (2) desalination technologies to be reviewed in more detail. Meeting minutes will be prepared by the consultant. **Prepare 3 Fact Sheets:** This task includes the preparation of fact sheets with concise write-ups of the selected sites, simple layout of the facilities on an aerial map, and the flow and process schematics unique to each site. Next, a 90-minute follow-up meeting will be held to jointly review the fact sheets to confirm all parties have a common understanding before performing more detailed analyses. **Prepare Site Plans and Cost Estimates:** Layout new building locations and identify the connection points to existing facilities on a more detailed aerial map. Outline considerations for which entity would be the operator in responsible charge for the facilities. Discuss site access considerations and site security, particularly for sites that may have more than one utility routinely accessing the site. Develop rough order of magnitude cost estimates for each site. **Prepare Operations Considerations Writeup:** Water through this system would be delivered at variable rates. A brief write-up will discuss how this impacts sizing of the facilities and estimate how much capacity should be provided.
Grantee Deliverable: (Describe the deliverable the grantee expects from this task)
A summary of the key findings of the three evaluated sites will be documented in a technical memorandum. Meeting minutes, fact sheets, and site plans will be attachments to the TM providing a comprehensive summary of the work performed with planning level cost estimate.
CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)
The CWCB will be provided a copy of the Technical Memorandum prepared for the grantee. The CWCB will also receive status report following 6 months of work and a final report prepared in accordance with the reporting requirements below.
Tasks

Last Update: January 9, 2018 (d.vigil)

Tasks
Provide a detailed description of each task using the following format:
Task 2 – Brine Disposal Options
Description of Task:
Evaluate the benefits and risks of deep well injection for disposal of brine and evaluate feasibility of alternate disposal methods.
Method/Procedure:
Engage Subject Matter Experts: Desalination subject matter experts will be engaged to provide rough estimates of the relative difference in brine disposal volumes between traditional reverse osmosis membranes and selective membranes. Deep well brine disposal experts will be engaged to qualify the benefits and potential risks of deep well injection of the estimated volumes. Landfill experts will be engaged to writeup key considerations regarding the potential opportunities and limitations of sending concentrated brine to non-hazardous versus hazardous waste landfills. **Interview Landfill Operators:** Landfills require Toxicity Characteristic Leaching Procedure (TCLP) testing among others where the results are compared to Maximum Concentration of Contaminants for Toxicity Characteristic for non-hazardous landfills as defined by the EPA. However, there can be exclusions and exemptions from the standard requirements at each landfill. This task includes interviews with both non-hazardous and hazardous material landfill operators in Colorado to discuss their ability and limitations of accepting a concentrated brine waste material. **Characterization of Brine:** Based on information learned from landfill interviews and subject matter expert input, calculations will be performed to estimate concentrations of contaminates in brine generated from desalination of South Platte River return flows. This effort includes assessing historical raw water quality data from the Prairie Waters Project and calculating the resulting brine stream concentrations that would occur due to the use of selective and non-selective membranes to remove dissolved solids. The feasibly of using Aurora Water laboratory facilities and laboratory staff to perform a laboratory experiment that would produce a representative brine sample will also be assessed. However, there are no standard laboratory procedures for performing such an experiment and this approach would not be as accurate as performing an extended pilot program using actual proposed treatment technologies. If laboratory experiments are performed, the work will be done using Aurora Water in-kind services and the findings will be compared to the calculated findings.
Grantee Deliverable: (Describe the deliverable the grantee expects from this task)
The findings of this study will be summarized in a technical memorandum and will provide the WISE Partnership, and other water utilities considering inland desalination, with a better understanding of potential opportunities and risks of brine disposal including potential effects on operations and maintenance costs.
CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)
The CWCB will be provided a copy of the Technical Memorandum prepared for the grantee. The CWCB will also receive up status report following 6 months of work and a final report prepared in accordance with the reporting requirements below.

Tasks
Provide a detailed description of each task using the following format:
Task 3 – Investigate Blending Options
Description of Task:
Evaluate the opportunity to blend low salinity waters with the elevated salinity South Platte River return flows to reduce or eliminate the need for desalination treatment.
Method/Procedure:
Options Workshop: This task includes a brainstorming session to develop (in schematic form) as many potential blending concepts as possible. In the later stages of the workshop, the goal will be to select five (5) options to be reviewed in more detail. Meeting notes on the key points of discussion for this workshop will be prepared by the consultant. **Prepare 5 Fact Sheets:** Up to five blending strategies will be documented in 2-page write-ups with schematic figures of the concept and a qualitative discussion of benefits and challenges of each concept. The findings of the mass balance analysis will be presented to the WISE Partnership in a follow-up meeting and it is expected that the concepts may be modified slightly based on the discussions. **Prepare Cost Estimates:** Rough order of magnitude capital cost estimates and operation costs will be developed for the facilities required for each blending strategy. This might include pipeline costs, pump station costs, blending tank or reservoir costs, and or costs to share/utilize existing facilities owned by others.
Grantee Deliverable: (Describe the deliverable the grantee expects from this task)
A summary of the key findings of the five blending strategies will be documented in a technical memorandum. Meeting minutes and fact sheets will be attachments to the TM providing a comprehensive summary of the work performed.
CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)
The CWCB will be provided a copy of the Technical Memorandum prepared for the grantee. The CWCB will also receive a status report following 6 months of work and a final report prepared in accordance with the reporting requirements below.

Last Update: January 9, 2018 (d.vigil)

Budget and Schedule

Exhibit B - 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. A separate excel formatted Budget is required for engineering costs to include rate and unit costs.

Reporting Requirements

Progress Reports: The grantee 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. The CWCB may withhold reimbursement until satisfactory progress reports have been submitted.

Final Report: At completion of the project, the grantee shall provide the CWCB a Final Report on the grantee'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.

Payments

Payment will be made based on actual expenditures, must include invoices for all work completed and must be on grantee's letterhead. 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.

The CWCB will pay the last 10% of the entire water activity 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 water activity and purchase order or contract will be closed without any further payment. Any entity that fails to complete a satisfactory Final Report and submit to CWCB within 90 days of the expiration of a purchase order or contract may be denied consideration for future funding of any type from CWCB.

Performance Requirements

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 B. Per Grant Guidelines, the CWCB will pay out the last 10% of the budget when the final deliverable is completed to the satisfaction of CWCB staff. Once the final deliverable has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.
(b) Accountability: Per the 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 the 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 Supply Reserve Fund

EXHIBIT B - BUDGET AND SCHEDULE - Direct & Indirect (Administrative) Costs

Date: 1/24/2018

Water Activity Name: Investigation of Salinity Management Options for the WISE Partnership with Potential Shared Benefits by Other Metro Water Users

Grantee Name: South Metro WISE Authority

Task No.[1]	Description	Start Date[2]	End Date	Matching Funds (cash & in-kind)[3]	WSRF Funds (Basin & Statewide combined)[3]	Total
1	Investigate Salinity Removal Options	6/15/2018	6/15/2019	$ 25,500.00	$ 53,000.00	$ 78,500.00
2	Investigate Brine Disposal Options	6/15/2018	6/15/2019	$ 20,100.00	$ 32,900.00	$ 53,000.00
3	Investigate Blending Options	6/15/2018	6/15/2019	$ 21,900.00	$ 41,600.00	$ 63,500.00
			Total	$ 67,500.00	$ 127,500.00	$ 195,000.00

(1) The single task that include costs for Grant Administration must provide a labor breakdown (see Indirect Costs tab below) where the total WSRF Grant contribution towards that task does not exceed 15% of the total WSRF Grant amount.

(2) Start Date for funding under $100K - 45 Days from Board Approval; Start Date for funding over $100K - 90 Days from Board Approval.

(3) Round values up to the nearest hundred dollars.

• Reimbursement eligibility commences upon the grantee's receipt of a Notice to Proceed (NTP)

• NTP will not be accepted as a start date. Project activities may commence as soon as the grantee enters contract and receives formal signed State Agreement.

The CWCB will pay the last 10% of the entire water activity budget when the Final Report is completed to the satisfaction of the CWCB staff project manager. Once the Final Report has been accepted, the final payment has been issued, the water activity and purchase order (PO) or contract will be closed without any futher payment. Any entity that fails to complete a satisfactory Final Report and submit to the CWCB with 90 days of the expiration of the PO or contract may be denied consideration for future funding of any type from the CWCB.

• Additonally, the applicant shall provide a progress report every 6 months, beginning from the date of contract execution

• Standard contracting proceedures dictate that the Expiration Date of the contract shall be 5 years from the Effective Date.

SMWSA
SOUTH METRO WATER SUPPLY AUTHORITY

8400 East Prentice Avenue
Suite 315
Greenwood Village, CO 80111

Phone 720 216 5158
Fax 720 216 5154

January 24, 2018

Colorado Water Conservation Board
c/o Greg Johnson, Project Manager
1313 Sherman Street, Suite 721
Denver, Colorado 80203

RE: Colorado Water Plan Grant Application
Salinity Management Study Grant

Dear Honorable Board Members:

The guidelines for the Water Supply Reserve Fund grant program require the submittal of a Letter of (financial) Commitment by the grant applicant. The South Metro WISE Authority does hereby commit to provide the outstanding financial obligation and in-kind services for the Salinity Management Study project after applicable grant funds have been applied. The total estimated cost of the project is $195,000.

The South Metro WISE Authority partners, Aurora Water and Denver Water, will be providing in-kind and financial support to the project as well. The partners' support will be subject to an Intergovernmental Agreement (IGA) between the parties, which will be reviewed by and is subject to the approval of the parties' Boards and Council as applicable. It is anticipated that the subject IGA will define the cooperative future efforts of the parties, as well as the financial obligation, as needed for this grant project and other joint tasks related to the WISE Partnership, its operations, and infrastructure development.

We look forward to working with the Colorado Water Conservation Board and its staff on this next phase of the WISE Partnership, and we believe that the results of this work will have regional and state-wide benefits as well. If you have any questions or require any additional information, please do not hesitate to contact me at lisadarling@southmetrowater.org or (720) 216-5158.

Sincerely,

Lisa Darling, Executive Director