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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:

Supply and Demand Gap Projects	Gregory.Johnson@state.co.us
Water Storage Projects	Anna.Mauss@state.co.us
Conservation, Land Use Planning	Kevin.Reidy@state.co.us
Engagement & Innovation Activities	Mara.MacKillop@state.co.us
Agricultural Projects	Brent.Newman@state.co.us
Environmental & Recreation Projects	Linda.Bassi@state.co.us

Applicants interested in submitting an 'Intent to Apply' in the future are encouraged to check here ☐ and fill in all sections with the best information available at the time. Exhibits may be excluded.

This "Intent to Apply" will help CWCB prioritize Projects that are not ready for fully completed Water Plan Grant Application due to the initial timeframe and required deadlines.

FINAL SUBMISSION: Submit all application materials 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.

Water Project Summary

Name of Applicant	**PIKES PEAK REGIONAL WATER AUTHORITY**
Name of Water Project	**El Paso County Groundwater Depletions: Project Implementation Strategies to Meet the Supply & Demand Gap**
CWP Grant Request Amount	$ 112,500.00
Other Funding Sources USGS match	$ 30,000.00
Other Funding Sources El Paso County	$ 50,000.00
Other Funding Sources	
Applicant Funding Contribution	$ 32,500.00 (cash and in kind)
Total Project Cost	$ 225,000.00

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Applicant & Grantee Information	
Name of Grantee(s)	Pikes Peak Regional Water Authority
Mailing Address	231 Security Blvd., Colorado Springs, CO
FEIN	84-14288849
Organization Contact	Elise Bergsten
Position/Title	Manager
Email	elise.balancedmgmt@gmail.com
Phone	719-963-1809
Grant Management Contact	same
Position/Title	
Email	
Phone	
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).
Pikes Peak Regional Water Authority is a water authority, a body corporate and politic, a separate governmental entity, a political subdivision and a public corporation of the State of Colorado, pursuant to Section 18(2)(a) and 2(b) of Article XIV, Constitution of the State of Colorado, and to § 29-1-204.2, Colorado Revised Statutes. The purpose of the Authority is to affect the development of renewable water resources, systems, and facilities and/or drainage facilities in whole or in part for the benefit of the Members and their inhabitants, and others; in short, to implement regional solutions to water supply issues.

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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.
X	**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
	Construction
X	Identified Projects and Processes (IPP)
X	Other Specific Implementation Strategies for meeting groundwater depletion impacts on supply

Category of Water Project (check all that apply and include relevant tasks)	
X	Supply and Demand Gap - Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap. *Applicable Exhibit A Task(s):*
X	Water Storage - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity. *Applicable Exhibit A Task(s):*
X	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, and drought planning. *Applicable Exhibit A Task(s):*
	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website. *Applicable Exhibit A Task(s):*
	Agricultural - Projects that provide technical assistance and improve agricultural efficiency. *Applicable Exhibit A Task(s):*
	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. *Applicable Exhibit A Task(s):*

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	Other	Explain:

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/Counties	El Paso
Latitude	38.888
Longitude	-104.825

Water Project Overview
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. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.

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Water Project Overview

The **: Project Implementation Strategies** report is intended to address the impending municipal water supply gap resulting from 50 years of groundwater depletions in the Denver Basin and Upper Black Squirrel aquifers El Paso County. The El Paso County Water Master Plan, a wide-reaching initiative encompassing over 40 public service providers, is currently reviewing public policies promulgated under the El Paso County Land Use Code. Led by the EPC Community Development Department, the Water Master Plan will become a foundational document precedent to an updated El Paso County Comprehensive Plan. Changes in Land Use Codes are anticipated based on the initiative.

In collaboration and supported by exchange of information, data and mapping with the EPC Water Master Plan initiative, the **Project Implementation Strategies to Meet the Supply & Demand Gap** grant will provide specific actions to address the supply gap generated by groundwater depletions. However, not all EPC water providers face a municipal supply and demand gap. The **Project Implementation Strategies** will focus in depth on 5 topic areas affecting potential supply solutions. Specifically, the project will examine current depletions and estimates of costs to continue groundwater extraction, the financial capacity (debt load) of the individual and collective water providers to participate in solutions, scenarios wherein the major regional provider Colorado Springs Utilities might equitably support regionalization and evaluation of methods for reuse to extinction of fully consumable water arising within El Paso County to offset regional deficits.

In addition, the grant will evaluate the feasibility of alluvial aquifer storage in the Upper Black Squirrel Designated Groundwater Basin. An El Paso County Water Authority (now PPRWA) sponsored study in 2008 by the Colorado Geologic Survey identified Upper Black Squirrel as capable of alluvial aquifer storage up to 200,000 acre-feet. While contributing to the depth and breadth of the EPC Water Master Plan, the **Project Implementation Strategies** will provide specific recommendations for implementation of projects to meet the municipal supply gap.

Measurable Results

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

20,000 up to 200,000	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)
TBD	Efficiency Savings (indicate acre-feet/year OR dollars/year)
	Area of Restored or Preserved Habitat (acres)
	Quantity of Water Shared through Alternative Transfer Mechanisms
40,000	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
100,000	Number of Coloradans Impacted by Engagement Activity

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Measurable Results		
X	Other	Explain: Regional project implementation strategies for 25,000 AF Municipal Supply and Demand Gap (Nonrenewable sources)

Water Project Justification

Provide a description of how this water project supports the goals of Colorado's Water Plan, the most recent Statewide Water Supply Initiative, 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;)

Does the project proponent demonstrate a commitment to collaboration? PPRWA has been leading the charge to address the municipal supply gap in El Paso County for over 15 years. This project builds on both historic studies and a new planning initiative in collaboration with the El Paso County Development Services department's County Water Master Plan, scheduled for completion in the 4th quarter of 2018. The project will interface with the internal dialogue at Colorado Springs Utilities regarding regionalization, which is specifically referenced in the 2017 CSU Integrated Water Resource Plan. A monthly Steering Committee meeting with a broad representation from the community will provide meaningful opportunities for input, along with PPWRA monthly public meetings.

Does the project proponent address an identified water gap? The 25,000 AF municipal supply gap in El Paso County is referenced in every Needs Assessment promulgated by CWCB or the Arkansas Basin Roundtable, starting with SWSI 2004. The Arkansas Basin Implementation Plan includes a specific goal to address groundwater depletions, which in El Paso County includes both the Denver Basin aquifer and the Upper Black Squirrel designated groundwater basin.

Colorado State Demographers Office

Greater Metro C. Springs	2016 682,886	Population	
Colorado Springs	460,953	SDS Partners	Ratio
Fountain	29,581	490,534	71.8%
Monument	6,241		
Palmer Lake	2,710	GroundWater	Ratio
Unincorp. Area	183,401	192,352	28.2%

Does the project proponent demonstrate sustainability? The purpose of this Addendum is to build on current best practices for conservation while maximizing the use of water resources via a) reuse to extinction of fully consumable water, b) conjunctive use of surface water and groundwater, c) water sharing agreements d) efficient use of existing infrastructure and optimal regionalization of new construction and e) aquifer storage projects.

Does the project proponent establish the fiscal and technical feasibility of the project?
Addressing the municipal supply gap in a timely manner (prior to full depletion of the Denver Basin useful life) suggests that a regional solution, in collaboration with the communities' recent investment in the Southern Deliver System, will be the most cost effective. That raises the question of local contribution and the financial capability of the small, county-based entities to repay debt, particularly given the wide disparity between bonded indebtedness of some Title 32 special districts. Southern Delivery System serves about 70% of El Paso County's citizens. Therefore, in-kind contributions of fiscal and technical expertise from CSU and its SDS partners is a critical component to successful achievement of the CWP measurable objective of *"reducing the projected 2050 municipal and industrial gap from as much as 560,000 acre-feet to zero acre-feet by 2030."*
A detailed **: Project Implementation Strategies** report to accompany the County's Water Master Plan is intended to answer the question of whether a viable, sustainable solution to groundwater depletions

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Water Project Justification

is possible and if so, what might be required of the groundwater dependent entities that would benefit from that solution. A further opportunity to meet the current gap involves feasibility for an alluvial aquifer storage project in the Upper Black Squirrel aquifer.

Related Studies

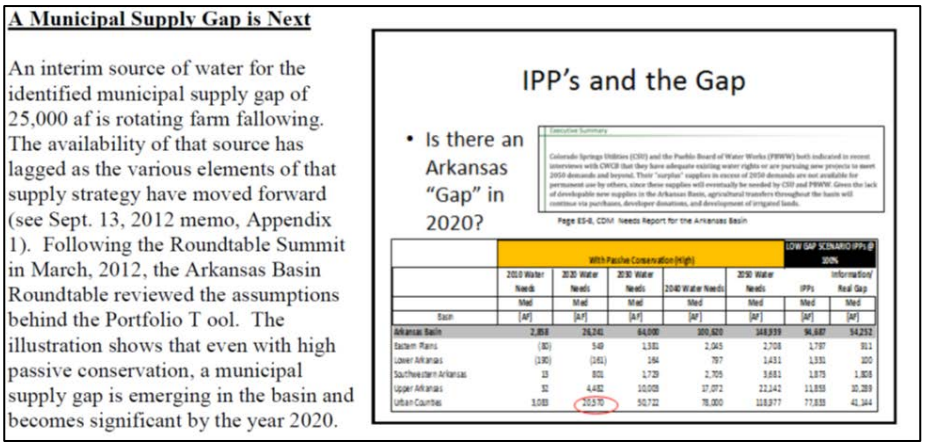
Please provide a list of any related studies, including if the water project is complementary to or assists in the implementation of other CWCB programs.

-**Transit Loss Model extension to Monument Creek as an adjunct tool for development of the Arkanas Basin DSS 2007**

-**Upper Black Squirrel Alluvial Aquifer Storage Study 2008**

-**Meeting the Needs of the Arkansas Basin, 2012 Update Memorandum**

The Portfolio Tool developed for Low-No Regrets Scenario planning process is referenced in this 2012 Needs report to the CWCB board.



A Municipal Supply Gap is Next

An interim source of water for the identified municipal supply gap of 25,000 af is rotating farm fallowing. The availability of that source has lagged as the various elements of that supply strategy have moved forward (see Sept. 13, 2012 memo, Appendix 1). Following the Roundtable Summit in March, 2012, the Arkansas Basin Roundtable reviewed the assumptions behind the Portfolio T ool. The illustration shows that even with high passive conservation, a municipal supply gap is emerging in the basin and becomes significant by the year 2020.

IPP's and the Gap

- Is there an Arkansas "Gap" in 2020?

-**PPRWA Regional Infrastructure Study 2016**

-**PPRWA Area 3 Study 2017**

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;

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Previous CWCB Grants, Loans or Other Funding
5) Contract number or purchase order; 6) Percentage of other CWCB funding for your overall project.

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.
PPRWA does not receive revenue from taxes, all income is based on member contributions.

Submittal Checklist	
	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract.
Exhibit A	
X	Statement of Work(1)
X	Budget & Schedule(1)
	Letters of Matching and/or Pending 3rd Party Commitments(1)
Exhibit C	
X	Map (if applicable)(1)
X	Photos/Drawings/Reports (Studies on file at CWCB on the Arkansas Basin RT page)
Pending 2/14/18	Letters of Support (Support letter from Basin Roundtable encouraged)
	Certificate of Insurance (General, Auto, & Workers' Comp.) (2)
	Certificate of Good Standing with Colorado Secretary of State(2)
	W-9(2)
	Independent Contractor Form(2) (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY	
	Engagement & Innovation 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.

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Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work	
Date:	**February 1, 2018**
Name of Applicant:	**Pikes Peak Regional Water Authority**
Name of Water Project:	**El Paso County Groundwater Depletions: Project Implementation Strategies to Meet the Supply & Demand Gap**
Funding Source:	**Colorado Water Plan Supply and Demand Gap Grant**

Water Project Overview: Please provide a summary of the proposed water project (200 words or less). The same summary can be used from Page 5 of the CWP Grant Application.

The **El Paso County Groundwater Depletions: Project Implementation Strategies to Meet the Supply & Demand Gap** (the "Strategies") will address the impending municipal water supply gap resulting from 50 years of groundwater depletions in the Denver Basin and Upper Black Squirrel aquifers of El Paso County. The El Paso County Water Master Plan, a wide-reaching initiative encompassing over 40 public service providers, is currently reviewing public policies promulgated under the El Paso County Land Use Code. Led by the EPC Community Development Department, the Water Master Plan will become a foundational document precedent to an updated El Paso County Comprehensive Plan. The land use and water efficiency effects of code changes will be included in the deliverables from the grant and is incorporated as "match" for some grant elements.

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Addressing the municipal supply gap in a timely manner (prior to full depletion of the Denver Basin useful life) suggests regional solutions, but specific implementation strategies and recommendations are needed. A solid feasibility study to capture the documented 200,000 acre-foot alluvial aquifer storage capacity in the Upper Black Squirrel basin moves the Arkansas BIP goal for 70,000 af of new storage forward.

Objectives: List the objectives of the project.

1. Assess the current extent of depletions of groundwater sources and estimate an event horizon where additional capital expenditures are required to sustain service to existing customers, in collaboration with the USGS.
2. Survey, collate and summarize the individual and collective financing capacity of EPC water providers to determine capacity for regional projects and/or projects for interim service from Colorado Springs Utilities (CSU).
3. Identify opportunities and constraints for regional solutions which include CSU, propose specific project profiles and parameters for successfully addressing regional water supply gaps on an equitable basis, identify the timing and extent of regional economic impacts from a failure to meet the regional water supply gap by the Colorado Water Plan Objective date of the Year 2030.
4. Develop regional project solutions, based on previous studies and dialogue with regional providers, that increases the reuse to extinction of fully consumable water that arises within El Paso County by El Paso County providers.
5. Document the regional economic interdependency of the entities in El Paso County to validate the

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importance of a regional water supply solution(s).

6. Develop a feasibility study level assessment of costs, design, timelines and funding aspects for an alluvial aquifer storage project in the Upper Black Squirrel groundwater basin or vicinity.

7. Administration and Project Management of the project for the grant and all participants and funding sources.

Tasks
Provide a detailed description of each task using the following format:
Task 1 – Assess Groundwater Depletions
Description of Task:
As groundwater supplies are depleted, supply wells lose pumping capacity. Water providers that rely on this water source face capital expenditures for new wells or refurbishment of existing wells just to meet existing demand. These capital expenditures by fiscally constrained water purveyors are then no longer available for application to renewable supply solutions or collaborative regional projects. USGS has a network of monitoring wells in the study area. This Task will provide a "snapshot" of current static water levels, estimate future static water levels based on projected pumping rates, and in dialogue with effected water providers, articulate the capital expenditures required to sustain current levels of service.
Method/Procedure:
1. Measure wells with historic water level data 2. Add well data in new locations as appropriate 3. Apply an appropriate projection of depletion 4. Review projects with the EPC Water Master Plan Steering Committee
Grantee Deliverable: Describe the deliverable the grantee expects from this task
Summary of data and projects, with commentary as appropriate by technical review participants. Estimates of near-term capital expenditures by sub-regions.
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
Project Implementation Strategies report and with USGS data regarding estimates of longevity of depleting groundwater sources for municipal providers in the study area. Project recommendations for implementation of regional water solutions to achieve the Colorado Water Plan objective of reducing the Municipal Supply and Demand Gap by 2030.

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Tasks
Provide a detailed description of each project task using the following format:
Task 2 – Financial Capacity Survey and Projections
Description of Task:
The funding sources for many small, metropolitan district providers in El Paso County are water rates and tap fees, others have *ad valorem* taxes in addition to water rate revenue. Each individual water purveyor, whether a Title 32 District or statutory town or city, has some combination of debt and revenue sources to service its debt. In the case of Title 32 Districts, the debt capacity of a metropolitan district might also be applied to other capital improvement besides water supply, such as road, parks or stormwater features. The capacity of any entity to participate in water solutions, whether internal or regional, is directly impacted by the relationship between revenue and debt load. By examining the audited financial statement each entity files annually with the Division of Local Governments, an overview can be obtained for each provider of the financial capacity to either: a. continue capitalizing additional capacity to extract water from the aquifers, or b. participate in a regional project to address conversion from nonrenewable groundwater to a sustainable water source. Financial capacity may (or may not) hamper financing regional water solutions. This Task will address questions such as: "What is the credit capacity of potential project participants and how might the newly created Loan Guarantee Fund from CWCB assist some participants in a regional project? At what point does capital spent on sustaining or expanding capacity from nonrenewable sources hamper or eliminate capacity to participate in regional projects to convert to other water sources?"
Method/Procedure:
1. Identify the water providers to include in the financial survey in collaboration with the Project Management team and Steering Committee of the El Paso County Water Master Plan. 2. Summarize total debt, funding sources and estimate (via direct contact with the provider if possible) for near-term capital expenditures. 3. Project the timing and capacity of subregional sets of providers on a rational configuration to determine total project funding capacity at current CWCB Water Loan Program rates and terms. 4. Provide conclusions and recommendations for next steps to initiate transition from nonrenewable water sources.
Grantee Deliverable: Describe the deliverable the grantee expects from this task
Written report with summary tables, projections and recommendations. Attachments to the report that include public documents, meeting notes and other pertinent information as appropriate.
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
Project Implementation Strategies report with summary information on financial capacity and projections. Recommendations regarding application of a Loan Guarantee Fund program by CWCB to facilitate financing of regional water supply solutions to address the documented municipal supply gap. El Paso County Water Master Plan Report and Recommendations for changes to Land Use Codes.

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Task 3 – Colorado Springs Utilities' Opportunities and Constraints

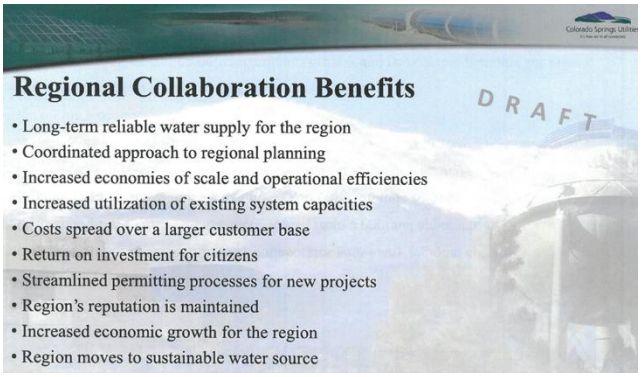
Description of Task:

With completion of the Southern Delivery System project (SDS), Colorado Springs Utilities (CSU) has achieved a more reliable water supply arrangement for the City of Colorado Springs and its SDS partners for the foreseeable future. Many of the El Paso County water providers are entirely groundwater based system, challenged by the impact of groundwater depletions.

Are there opportunities for regional collaboration in a fashion similar to the WISE Partnership between Denver, Aurora and South Metro? The CSU Utility Policy Advisory Committee (UPAC) has been charged by the Utility Board to provide recommendations on "regionalization" as that term is included in the 2017 CSU Integrated Water Resource Plan (Feb 22, 2017 approval).

Colorado State Demographers Office

Greater Metro C. Springs	2016 682,886	Population	
Colorado Springs	460,953	SDS Partners	Ratio
Fountain	29,581	490,534	71.8%
Monument	6,241		
Palmer Lake	2,710	GroundWater	Ratio
Unincorp. Area	183,401	192,352	28.2%



On February 7, 2018, the UPAC reviewed its final recommendations for adoption by the CSU Board of Directors. The draft policy recommendations are based on the many benefits of regional collaboration. This Task is intended to examine the physical delivery, sub-regional distribution, water quality and governance issues fundamental to an effective regional solution to sustainable water supply.

Will water delivery be raw water or potable water? Are there opportunities for sub-regional transmission infrastructure, either existing or to-be-constructed, that could serve multiple county water providers? Does source water quality from either a county provider or CSU affect a regional solution? What are the lessons learned from the WISE partnership and how could an El Paso County project take advantage of lessons learned in that initiative?

Method/Procedure:

1. Organize sub-regional working groups to review existing infrastructure capacity and interconnections.
2. Interface with CSU water resource planners to identify opportunities and constraints.
3. Review and summarize constraints on regional service based on relevant permits (e.g. the SDS Pueblo County 1041 Permit, NEPA Record of Decision, etc.), related policies (e.g. inclusion in the Southeast Colorado Water Conservancy District), and other reference documents (existing regional water service contracts, City Code provision regard water service with annexation vs. without annexation).
4. Identify and provide specific project implementation strategies on opportunities for regional collaboration, such as use of existing water supply portfolios.

Grantee Deliverable: Describe the deliverable the grantee expects from this task

Project Implementation Strategies report and presentation on summary of task items. Identification of project specific land use codes, such as the EPC Drainage Criteria Manual, that are related to identified permits and policies regarding regional water service.

CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task. Project Implementation Strategies report and El Paso County Water Master Plan Report with

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Recommendations regarding compliance with SDS 1041 permit requirements.

Tasks

Task 4– Fully Consumable Water Reuse within El Paso County

Description of Task:

One benefit of groundwater as a municipal supply source is the fully consumable nature of the return flow. Denver Basin aquifer sources and historically-quantified renewable sources are often decreed for use and reuse to extinction. To better quantify and track fully consumable return flow, from 2003 to 2007 the Pikes Peak Regional Water Authority collaborated with CWCB and CSU to extend the USGS computer generated Transit Loss Model on Fountain Creek to include Monument Creek. Extension of the Model up the reach of Monument Creek captures Denver Basin return flow in the calculation of fully consumable water. The Model is calibrated by USGS gauges and distinguishes between native and nonnative water to one-hundredth of an acre-foot.

Recent PPRWA regional studies have identified possible storage and reuse opportunities. How much water is available? Where is the water available? When is the water available? What storage is available for retiming the water usage? What water treatment capacity is available or required to capture and reuse the water to extinction? What are the parameters of a transaction that might capture and fully consume water which is currently discharged to the tributaries of Fountain Creek?

Method/Procedure:

1. Leverage the Transit Loss Model operations via interface with the Transit Loss Committee of PPRWA and the Division 2 Office of DWR.
2. Capture the current reusable water supply availability, by location, quantity and timing.
3. Project scenarios for reuse to extinction and propose projects or methods to achieve that reuse.
4. Leverage and build upon current recommendations with sources of reusable water prior to presenting results to potential users of fully consumable water.

Grantee Deliverable: Describe the deliverable the grantee expects from this task

Written report and presentation on summary of task items. Project specific recommendations for implementation. Coordination with the Division 2 Engineers Office and the District 10 Water Commissioners office.

CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task; Project Implementation Strategies report and El Paso County Water Master Plan Report and Recommendations for changes to Land Use Codes.

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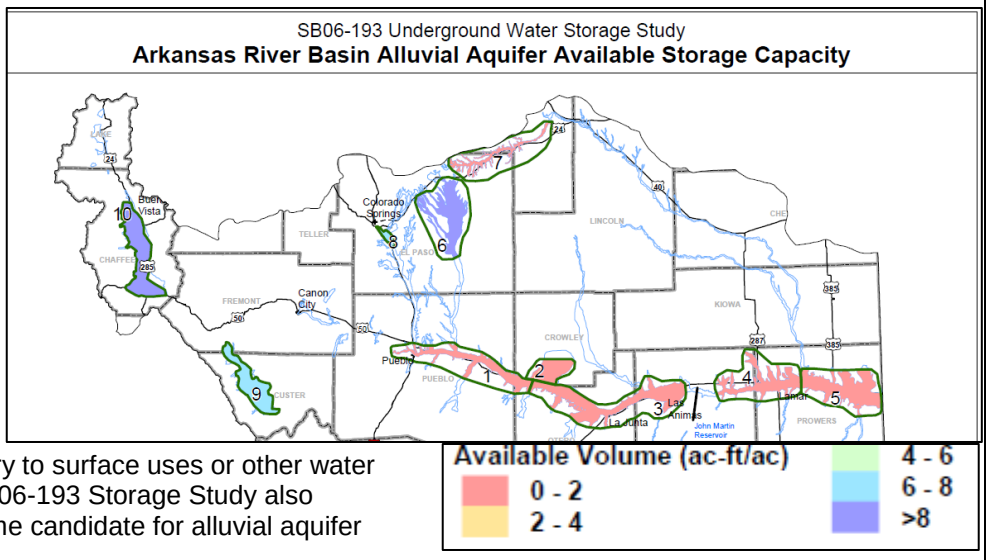
Task 5– Alluvial Aquifer Feasibility Study, Upper Black Squirrel Designated Groundwater Basin

Description of Task:

In 2006, with CWCB and Arkansas Roundtable support, the PPRWA completed a stakeholder driven study of the alluvial aquifer storage capacity of the Upper Black Squirrel Designated Groundwater basin. Participants included the Upper Black Squirrel Groundwater Management District, Colorado Springs Utilities and many of the El Paso County water purveyors. The Study was conducted by the Colorado Geologic Survey and completed in 2008. The report concludes that 200,000 plus acre-feet of storage capacity is available in the de-watered regions within the basin without likely injury to surface uses or other water rights. The Senate Bill 06-193 Storage Study also identified UBS as a prime candidate for alluvial aquifer storage.



Alluvial aquifer storage in the UBS was depicted in the Arkansas Basin Implementation Plan in Section 4.8 as a potential strategy for addressing climate change and impacts from changes in hydrology in the Colorado River basin (imports).

Method/Procedure:

1. Assemble stakeholders and funding participants to develop a target project site(s) for investigation.
2. Exchange infrastructure information with the EPC Water Master Plan team to eliminate overlap, identify delivery strategies.
3..Estimate design, cost-to-construct, timeline, permitting and collateral expenses related to project implementation.
4. Coordinate with Colorado Springs Utilities and SDS partners regarding raw water availability.

Grantee Deliverable: Describe the deliverable the grantee expects from this task

Written report and presentation on summary of task items. Project specific recommendations for implementation. Coordination with the Upper Black Squirrel Groundwater Management District. Project Implementation Strategies report and detailed Alluvial Aquifer Storage Feasibility Study with recommendations for implementation.

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CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task; Project Implementation Strategies report and detailed Alluvial Aquifer Storage Feasibility Study with recommendations for implementation.

Tasks
Provide a detailed description of each task using the following format:
Task 6 – Administration and Project Management
Description of Task:
Administer the grant, providing timely reporting, project schedule and funding status, coordination of vendors, final reconciliation of all funds.
Method/Procedure:
Good accounting, project management, and administrative activities
Grantee Deliverable: Describe the deliverable the grantee expects from this task
Invoices, summaries
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
6 monthly progress reports, summary of all billing and payment, final reconciliation of all funds, and overall project performance and issues. Project Implementation Strategies report and El Paso County Water Master Plan Report and Recommendations for changes to Land Use Codes.
Budget and Schedule
This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the

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Tasks
Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

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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. The CWCB may withhold reimbursement until satisfactory progress reports have been submitted.
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 withhold disbursement the last 10% of the budget until 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.

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COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Exhibit A
Budget and Schedule

Date: January 10,2018

Name of Applicant: Pikes Peak Regional Water Authority

Name of Water Project: El Paso County Water Master Plan: Small Area Focus Addendum

Task No.	Task Description	Start Date[(1)]	End Date	Grant Funding Request	Match Funding	Total
1	Assess Groundwater Depletions	NTP + 45	NTP + 270	$10,000	$30,000	$40,000
2	Financial Capacity Survey and Projections	NTP + 45	NTP + 270	$40,000	$10,000	$50,000
3	CSU Opportunties and Constraints	NTP + 45	NTP + 270	$20,000	$20,000	$40,000
4	Reuse within El Paso County	NTP + 45	NTP + 270	$22,500	$22,500	$45,000
5	Alluvial Aquifer Storage in UBS Basin	NTP + 45	NTP + 270	$15,000	$30,000	$45,000
6	Administration	NTP + 45	NTP + 270	$5,000		$5,000
						$0
						$0
						$0
						$0
						$0
						$0
						$0
						$0
			Total	$112,500	$112,500	$225,000

(1) Start Date for funding under $100K, minimum 45 Days from Board Approval; Start Date for funding over $100K, minimum 90 Days from Bo

·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 grantee enters contract and receives formal NTP if

·The applicant shall provide a progress repost every 6 months, beginning from the date of contract execution.

·CWCB will withhold disbursement of the last 10% of the total grant amount until a Final Report is completed to the satisfaction of CWCB

MEMORANDUM

To: Pikes Peak Regional Water Authority

CC: Cherokee District Manager

From: Gary Barber

Re: Alluvial Aquifer Recharge Feasibility Study

Date: November 1, 2017

PPRWA Directors:

I am writing as a consultant to Cherokee Metropolitan District to request sponsorship for a Feasibility Study of an Alluvial Aquifer Recharge project.

Background

A. In 2008, the El Paso County Water Authority completed a study of recharge potential in the Upper Black Squirrel aquifer. The report by the Colorado Geologic Survey included a depiction of the regional infrastructure, including the Cherokee/Meridian Ranch WWTP and recharge facility. Contributors to the UBS Recharge Study included PPRWA members, Colorado Springs Utilities and Upper Black Squirrel Designated Groundwater Management District.

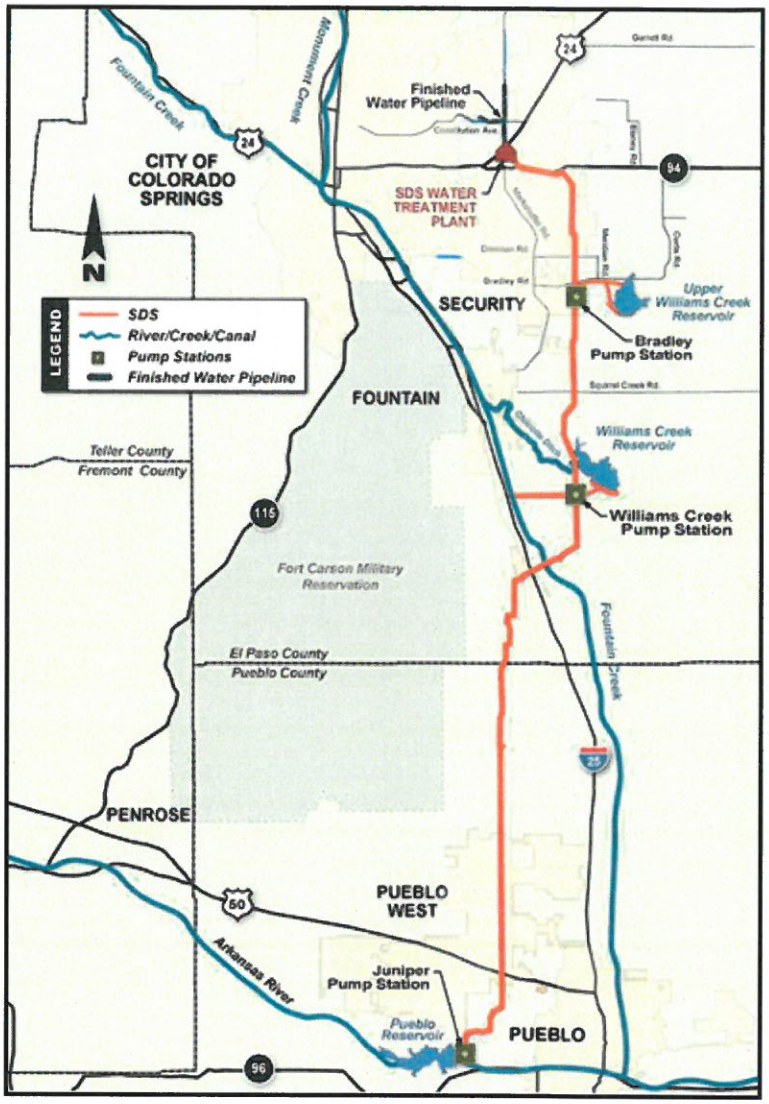
B. Cherokee is facing discharge permit limits related to TDS its WWTP and related recharge facility. Investigations are underway to address this issue via reverse osmosis or other treatment modality.

C. As an alternative, a proposal to blend effluent with low TDS water conveyed via the SDS pipeline for alluvial aquifer storage was suggested to the Cherokee Manager and Board of Directors. The Board authorized a discussion with CSU staff on the subject.

D. An investigative meeting with CSU staff indicated a willingness to listen to the concept with the request that the project be under the sponsorship of the Pikes Peak Regional Water Authority rather than a single district or entity.

E. The Colorado Water Conservation Board has two programs that can support a feasibility study for alluvial aquifer storage: 1) Colorado Water Plan grants for new storage, and; 2) Feasibility study funding for projects that will subsequently borrow funds from the Water Project Loan Program. Both programs are managed by Ms. Anna Mauss of CWCB staff and require a 50% cash/in kind match by the project proponent. Ms. Mauss indicated that the CWP grant deadline is February 1, 2018, however, the loan feasibility funding is available on a discretionary basis.

F. The UBS Recharge Study included a depiction of land ownership within the designated basin. The State Land Board has large land holdings within the basin and to the south of the basin. A preliminary discussion with SLB staff indicated a willingness to consider an alluvial aquifer storage program beneath SLB land holdings.



Discussion

Alluvial aquifer storage is method used throughout the West for water storage, but has a small footprint in Colorado. The advantage of alluvial storage is reduction in evaporative loss. Successful alluvial storage requires appropriate geologic conditions and a source of consumable water to store. In surveying alternatives to meet TDS discharge standards, a "blending" strategy that took advantage of existing infrastructure was deemed worthy of further investigation by the Cherokee directors.

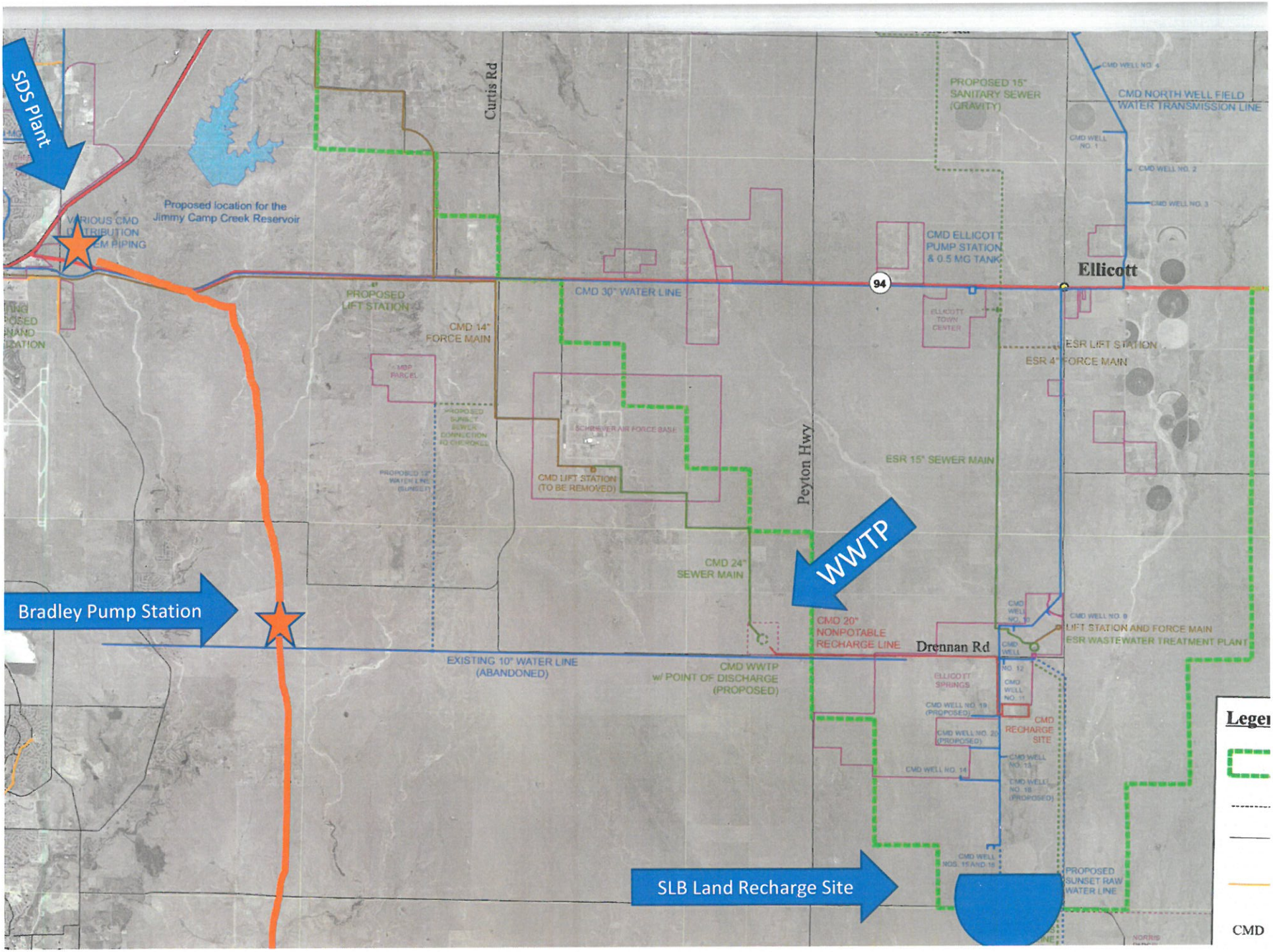
SDS delivers raw water via a pipe and pump system to the treatment plant and Hwy's 94 & 24. As SDS grows into its full demand capacity, an interim storage option to create a drought-proof reserve of underground water could also provide the benefit of postponing the capital costs of a reverse osmosis treatment facility. Under PPRWA sponsorship, regional benefits and potential regional partnerships can be explored.

Request

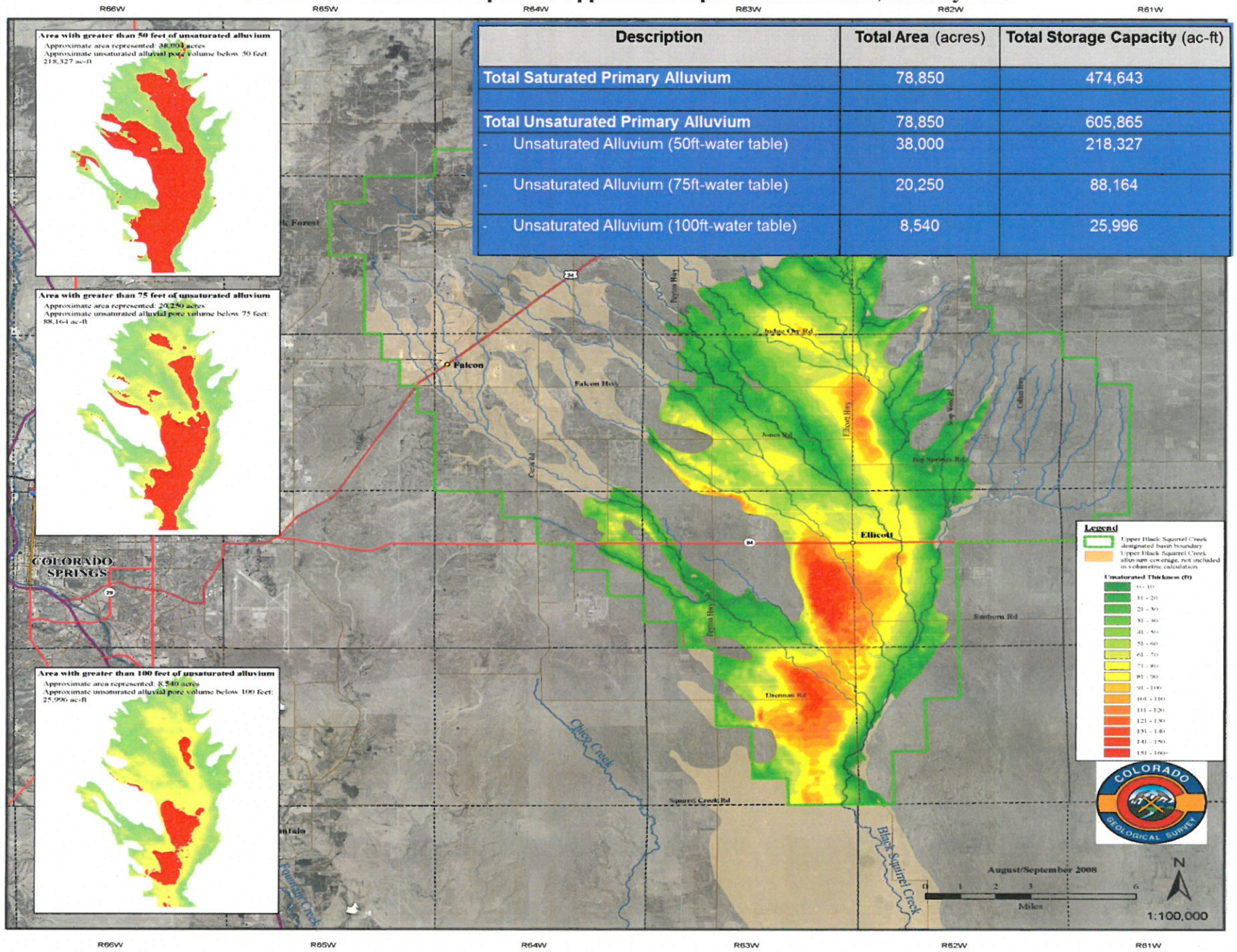
Affirmation by PPRWA directors to sponsor an Alluvial Aquifer Storage Feasibility Study with funding by CWCB and project participants.

Thank you for your consideration of this request.

GB


SDS Plant
Proposed location for the Jimmy Camp Creek Reservoir
VARIOUS CMD DISTRIBUTION SYSTEM PIPING
Curtis Rd
PROPOSED 15" SANITARY SEWER (GRAVITY)
CMD NORTH WELL FIELD WATER TRANSMISSION LINE
CMD WELL NO. 4
CMD WELL NO. 1
CMD WELL NO. 2
CMD WELL NO. 3
CMD ELLICOTT PUMP STATION & 0.5 MG TANK
Ellicott
94
CMD 30" WATER LINE
PROPOSED LIFT STATION
CMD 14" FORCE MAIN
ELLICOTT TOWN CENTER
ESR LIFT STATION
ESR 4" FORCE MAIN
MDP PARCEL
PROPOSED SUNSET SEWER CONNECTION TO CHEROKEE
SCHRIEVER AIR FORCE BASE
CMD LIFT STATION (TO BE REMOVED)
Peyton Hwy
ESR 15" SEWER MAIN
CMD 24" SEWER MAIN
WWTP
Bradley Pump Station
CMD 20" NONPOTABLE RECHARGE LINE
Drennan Rd
CMD WELL NO. 17
CMD WELL NO. 9
LIFT STATION AND FORCE MAIN ESR WASTEWATER TREATMENT PLANT
CMD WELL NO. 12
EXISTING 10" WATER LINE (ABANDONED)
CMD WWTP w/ POINT OF DISCHARGE (PROPOSED)
ELLICOTT SPRINGS
CMD WELL NO. 11
CMD WELL NO. 19 (PROPOSED)
CMD RECHARGE SITE
CMD WELL NO. 20 (PROPOSED)
CMD WELL NO. 13
CMD WELL NO. 14
CMD WELL NO. 18 (PROPOSED)
CMD WELL NOS. 15 AND 16
SLB Land Recharge Site
PROPOSED SUNSET RAW WATER LINE
Legend
CMD

Unsaturated Thickness Map in the Upper Black Squirrel Creek Basin, January 2008



Description	Total Area (acres)	Total Storage Capacity (ac-ft)
Total Saturated Primary Alluvium	78,850	474,643
Total Unsaturated Primary Alluvium	78,850	605,865
- Unsaturated Alluvium (50ft-water table)	38,000	218,327
- Unsaturated Alluvium (75ft-water table)	20,250	88,164
- Unsaturated Alluvium (100ft-water table)	8,540	25,996