Water Supply Reserve Account – Grant and Loan Program
Water Activity Summary Sheet
March 22-23, 2017
Agenda Item 24b

Co-Applicants:	Colorado Water Protective and Development Association & Catlin Augmentation Association
Grantee:	Colorado Water Protective and Development Association
Water Activity Name:	Catlin Canal Recharge Pond Demonstration Project
Water Activity Purpose:	Agricultural
County:	Pueblo, Lincoln, Crowley, Bent, and Otero
Drainage Basin:	Arkansas
Water Source:	Arkansas River
Amount Requested/Source of Funds:	$5,000 Arkansas Basin Account $30,500 Statewide Account* $35,500 Total Grant Request * The discrepancy between the Statewide Account request in the application, the Roundtable Chair Recommendation Letter ($50,000), and that stated herein can be attributed to the applicant's voluntarily reducing their request to accommodate the Statewide Account shortfall.
Matching Funds:	Basin Account Match ($5,000) = 16.4% of Statewide Account request (meets 10% min); Applicant's In-kind Match ($44,400) = 145.6% of Statewide Account request (meets 10% min); Total Match (Basin & Applicant Match of $49,400 = 162% of Statewide Account request (meets 50% min). (refer to *Funding Summary/Matching Funds* section)

Staff Recommendation:

Staff recommends approval of up to $5,000 from the Arkansas Basin Account; and $30,500 from the Statewide Account to help fund the project titled: Catlin Canal Recharge Pond Demonstration Project

Water Activity Summary:

If funded, the objectives of this project are to: (1) demonstrate the physical and legal viability of locating and constructing recharge facilities under the Catlin Canal within the Arkansas River Basin; (2) demonstrate through actual operations, how recharge ponds can be used to meet the return flow obligations of changed water rights to protect Arkansas River Basin water rights and to meet the State's Arkansas River Compact compliance requirements; and (3) provide a proof-of-concept for the construction and use of recharge at other locations and for the purposes within the Arkansas River Basin.

.

The proposed recharge facility will help address the issue of storage in the basin. The creation of storage will come indirectly to Pueblo Reservoir through a mechanism of less storage by the Colorado Water Protective and Development Association (CWPDA) & Catlin Augmentation Association (CAA). This mechanism will take the water currently stored in the reservoir downstream along the Catlin Canal delivered to the recharge facility and back to the river over the course of time, reducing the amount of storage required by the co-applicants. Based on the location and geology of the facility, the return flows could be witnessed along the Arkansas River anywhere from six months to 72 months. Creating this constant supply of water back to the river, the two entities will have less demand for storage to meet the depletion replacement maintenance under the Amended Rules of the Colorado Kansas Compact Compliance. By using recharge facilities, CWPDA's and CAA need to store and release water from Pueblo Reservoir pursuant to operation of Annual Rule 14 Replacement Plans will be considerably lessened. This will free up storage for other Arkansas River water users.

The proposed recharge pond is estimated to be capable of delivering fully consumable water for replacement of out of priority well depletions and changed water rights' delayed return flow obligations of CWPDA and CAA pursuant to the Amended Rules and CAA pending change of water and future post-85 Wells Plan for Augmentation. (CAA has a pending water rights change to allow use of Catlin Canal shares as a new source of replacement water). Recharge facilities will help with the timing of the water that is returned to the river leading to smaller releases from reservoirs, most closely matching the timing replacement water accretion to the wells' stream depletions ultimately leading to protection of Arkansas River Water Rights and Compact Compliance and while reducing the reservoir storage needs.

The Catlin Canal is the ideal location for CWPDA to build a recharge facility due to the large depletions that are created in the Arkansas River under the Catlin Canal. The canal itself is approximately 34 miles in length, servicing 18,600 irrigated acres. Per the H-I modeling performed by Division of Water Resources, the irrigation well pumping under the Catlin Canal and Catlin Canal irrigation return flows, impact the river in reaches 6, 7, and 8. The river reach extends from a point about four miles west of Manzanola to La Junta. Specifically, CWPDA services 30 members whom of which own 112 wells, reportedly irrigating 9,270 acres. CAA members own approximately 41 percent of the Catlin Canal shares and irrigate approximately 7,761 acres. Given this largely concentrated area, CWPDA and CAA have the intent to focus replacement and augmentation by recharge accretions to the Arkansas River in the reach from Manzanola to La Junta. Another advantage to identifying the Catlin Canal is the use of member supplied decreed Catlin Canal shares that can be used for augmentation and replacement in addition to CWPDA's surface and reservoir supplies.

In order to meet the depletion replacement maintenance in dry years, the ideal location of the facility will be constructed under geological formations that will carry return flows back to the river over the course of 72 months or more. The geology will also help ensure that the facility is not constructed on alluvial shale hence, helping to reduce the mineral content returning to the river. This analysis should help in identifying water quality benefits to the project as well. An ideal location will be in a geological region with little to no shale, far enough for 72-month recharge, and ease of access.

Discussion: This recharge facility will help address the storage needs outlined in the Arkansas Basin Implementation Plan (Section 1.6.1) as well as Colorado's Water Plan (6.5.1). The storage of water is one of the primary focuses of the Colorado Water Plan. This proposed project helps to identify those

needs, by creating recharge and taking less pressure off the current existing water supplies storage systems both of which would assist in meeting both the M&I and agricultural water gaps.

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

Eligibility Requirements:
The application meets requirements of the three subsections of the Eligibility Requirements: General Eligibility, Entity Eligibility, and Water Activity Eligibility.

Eligibility Based on Funding Match Requirements:
The application meets the Statewide Account Matching requirements.

Evaluation Criteria:
This activity has undergone review and evaluation and staff has determined that it satisfies the Evaluation Criteria. Please refer to WSRF Application for applicant's detailed response.

Funding Source	Cash	In-kind	Total
CWPDA and CAA Membership	$44,400	$0	$44,400
WSRF Arkansas Basin Account	$5,000	n/a	$5,000
WSRF Statewide Account	$30,500	n/a	$30,500
Total Project Costs	$79,900	$0	$79,900

CWCB Project Manager: Ben Wade

All products, data and information developed as a result of this grant must be provided to the CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and will help promote the development of a common technical platform. In accordance with the revised WSRA Criteria and Guidelines, staff would like to highlight additional reporting and final deliverable requirements. The specific requirements are provided below.

Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the scope of work including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings and engineering reports/designs.

Engineering: All engineering work (as defined in the Engineers Practice Act (§12-25-102(10) C.R.S.)) performed under this grant shall be performed by or under the responsible charge of professional engineer licensed by the State of Colorado to practice Engineering.

ARKANSAS BASIN ROUNDTABLE

January 19, 2017

Craig Godbout
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203

Re: WSRF Grant Application - Catlin Canal Recharge Pond Demonstration Project

Dear Craig:

At the January 11, 2017 meeting the Arkansas Basin Roundtable evaluated and approved by unanimous agreement the Water Supply Reserve Fund grant application from co-applicants Colorado Water Protective and Development Association (CWPDA) and the Catlin Augmentation Association (CAA) for the Catlin Canal Recharge Pond Demonstration Project. The Roundtable has approved the request of $50,000, of which $45,000 would come from the Statewide Account and $5,000 from the Basin Account. The two applicants will also provide total in-kind contributions of $45,000.

This project will demonstrate the use of recharge ponds in the Arkansas River Basin as a water management tool to offset out-of-priority well pumping depletions by both agricultural and municipal members of CWPDA and the CAA. WSRF funding from this grant request will be utilized, along with in-kind contributions, for site selection, securing appropriate agreements and permits, design and construction of a recharge facility under the Catlin Canal. This new ability to use recharge will not only provide added flexibility in maintaining historic return flows to stay in compliance with the Arkansas River Compact, but will also reduce the applicants need for storage in Pueblo Reservoir, which came within days of spilling account water in April of 2016.

CWPDA will be the fiscal agent for this grant and is a 501-C12 non-profit organization, incorporated in the state of Colorado in 1965.

Should you have any questions or concerns, please feel free to contact me either by telephone, 719-742-6164, or by email, sandy@white-jankowski.com.

With warmest regards,

Michael D. (Sandy) White
Chair

COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

Today's Date: December 16, 2016

Catlin Canal Recharge Pond Demonstration Project

Name of Water Activity/Project

Colorado Water Protective and Development Association & Catlin Augmentation Association

Name of Applicant

Arkansas Basin Roundtable

Amount from Statewide Account: 45,000

Amount from Basin Account(s): 5,000

Total WSRA Funds Requested: 50,000

Approving Basin Roundtable(s)
(If multiple basins specify amounts in parentheses.)

FEIN: 840904763

Application Content

Required Exhibits

A. Statement of Work, Budget, and Schedule
B. Project Map
C. As Needed (i.e. letters of support, photos, maps, etc.)

Appendices – Reference Material

1. Program Information
2. Insurance Requirements
3. WSRA Standard Contract Information (Required for Projects Over $100,000)
4. W-9 Form (Required for All Projects Prior to Contracting)

Instructions

To receive funding from the Water Supply Reserve Account (WSRA), a proposed water activity must be approved by the local Basin Roundtable **AND** the Colorado Water Conservation Board (CWCB). The process for Basin Roundtable consideration and approval is outlined in materials in Appendix 1.

Once approved by the local Basin Roundtable, the applicant should submit this application **with a detailed statement of work including budget and schedule as Exhibit A** to CWCB staff by the application deadline.

WSRA applications are due with the roundtable letter of support 60 calendar days prior to the bi-monthly Board meeting at which it will be considered. Board meetings are held in January, March, May, July, September, and November. Meeting details, including scheduled dates, agendas, etc. are posted on the CWCB website at: http://cwcb.state.co.us Applications to the WSRA Basin Account are considered at every board meeting, while applications to the WSRA Statewide Account are only considered at the March and September board meetings.

When completing this application, the applicant should refer to the WSRA Criteria and Guidelines available at: http://cwcb.state.co.us/LoansGrants/water-supply-reserve-account-grants/Documents/WSRACriteriaGuidelines.pdf. In addition, the applicant should also refer to the Supplemental Scoring Matrix applied to Evaluation Criteria Tiers 1-3 for Statewide Account requests .

The application, statement of work, budget, and schedule **must be submitted in electronic format** (Microsoft Word or text-enabled PDF are preferred) and can be emailed or mailed on a disk to:

Craig Godbout - WSRA Application
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203
Craig.godbout@state.co.us

If you have questions or need additional assistance, please contact Craig Godbout at: 303-866-3441 x3210 or craig.godbout@state.co.us.

Water Supply Reserve Account – Application Form
Revised October 2013

Part I. - Description of the Applicant (Project Sponsor or Owner);

1. Applicant Name(s): Colorado Water Protective and Development Association

Mailing address: 1220 East 3rd Street
La Junta, CO 81050

FEIN #: 840904763

Primary Contact: Kent Ricken Position/Title: CWPDA General Mgr.

Email: manager @cwpda.org

Phone Numbers: Cell: 719-406-6418 Office: 719-384-2754

Alternate Contact: Jared Gardner Position/Title: President CAA Board

Email: jaredgardner1@yahoo.com

Phone Numbers: Cell: 719-469-1402 Office: Same as cell

2. Eligible entities for WSRA funds include the following. What type of entity is the Applicant?

[ ] Public (Government) – municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities and the local entity should be the grant recipient. 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, homeowners associations, corporations.

[ ] Private individuals, partnerships, and sole proprietors are eligible for funding from the Basin Accounts but not for funding from the Statewide Account.

[x] Non-governmental organizations – broadly defined as any organization that is not part of the government.

3. Provide a brief description of your organization

Colorado Water Protective and Development Association (CWPDA) is a 501-C12 non-profit organization, incorporated in the state of Colorado in 1965. CWPDA's purpose is to provide well pumping augmentation through Colorado Amended Rules to the 1980 Colorado Compact Administration. Arkansas River Compact Administration adopted Amended Rules in the Arkansas River Basin in 1996 under Appendix A.4 of the 1980 Colorado Compact Agreement. CWPDA holds a membership of 600 members who operate approximately 980 wells. The membership is comprised of municipal, agricultural (flood, sprinkler, and drip), domestic, and industrial well users. CWPDA provides ground water to approximately 38,000 individuals across 71,000 acres in 5 counties (Pueblo, Lincoln, Crowley, Bent, and Otero).

The Catlin Augmentation Association (CAA) includes thirty-nine Catlin Canal Company shareholders, who own a sum of 7,653.419 shares. CAA Members have committed Catlin shares as a possible source of replacement water in administratively Substitute Water Supply Plans, Arkansas River Replacement Plans (Rule 14) and Surface Water Improvements Rules Plans (Rule 10) in a Water Court Change of Water Rights Application (Case No. 12CW94). CAA members have irrigation wells which, since 1994, they have pumped for irrigation use pursuant to the Amended Rules and Regulations Governing the Diversion and Use of Tributary Ground Water in the Arkansas River Basin Colorado (Amended Rules). Under the Amended Rules, replacement water for out-of-priority well depletions are accomplished through annually approved Rule 14 plans. For CAA members, these plans were operated by CWPDA and Arkansas Groundwater Users Association (AGUA). From 1994 through 2002, CAA members depended upon CWPDA and AGUA to acquire and provide the replacement water. Starting in 2003, CAA members Catlin shares have been used as a source of replacement water in Rule 14 annual plans. That practice has proven to provide with a reliable and firm augmentation water supply.

4. If the Contracting Entity is different then the Applicant (Project Sponsor or Owner) please describe the Contracting Entity here.

N/A

5. Successful applicants will have to execute a contract with the CWCB prior to beginning work on the portion of the project funded by the WSRA grant. In order to expedite the contracting process the CWCB has established a standard contract with provisions the applicant must adhere to. A link to this standard contract is included in Appendix 3. Please review this contract and check the appropriate box.

[x] The Applicant will be able to contract with the CWCB using the Standard Contract

[ ] The Applicant has reviewed the standard contract and has some questions/issues/concerns. Please be aware that any deviation from the standard contract could result in a significant delay between grant approval and the funds being available.

6. 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.
CWPDA is exempt from TABOR under IRS 501-c12 ruling.

Part II. - Description of the Water Activity/Project

1. What is the primary purpose of this grant application? (Please check only one)

	Nonconsumptive (Environmental or Recreational)
x	Agricultural
	Municipal/Industrial
	Needs Assessment
	Education
	Other Explain:

2. If you feel this project addresses multiple purposes please explain.

In addition to agricultural purposes, the project will address ongoing Arkansas River Compact compliance issues with Rule 14 well pumping for municipal users. Municipal users create depletions with the pumping of wells and the recharge site can help with time and place replacement obligations in the Arkansas River under the Catlin Canal. Along with the benefit to Rule 14 pumping obligations, there is a possibility of environmental use in wildlife habitation. The facility will be in such a location that nesting and feeding for wildlife will be ideal. Once the project is complete, there will be an educational component displaying how effective recharge facilities are in the Lower Arkansas River Basin, presented through a future recharge use report. Finally, there will be a needs assessment component which is directly related to the use of off channel storage in the Arkansas River Basin. The storage of water is a primary focus of the Colorado Water Plan and this project starts to identify those needs, by creating recharge and taking less pressure off the current storage systems.

3. Is this project primarily a study or implementation of a water activity/project? (Please check only one)

	Study	x	Implementation

4. To catalog measurable results achieved with WSRA funds can you provide any of the following numbers?

	New Storage Created (acre-feet)
	New Annual Water Supplies Developed, Consumptive or Nonconsumptive (acre-feet)
	Existing Storage Preserved or Enhanced (acre-feet)
	Length of Stream Restored or Protected (linear feet)
	Length of Pipe/Canal Built or Improved (linear feet)
	Efficiency Savings (acre-feet/year OR dollars/year – **circle one**)
	Area of Restored or Preserved Habitat (acres)
x	Other -- Explain: Recharge facility between 5 and 10 surface acres of land

4. To help us map WSRA projects please include a map (Exhibit B) and provide the general coordinates below:

Latitude: 38° 07'31.98" Longitude: 103° 56'39.86"

Since there is no current site selection for this demonstration, the coordinates of the canal itself were used and a map is provided in Exhibit B. The map displays all current Catlin Canal land of where the site selection can be made. Furthermore, a second map is used to show what land within Catlin Canal is owned by CWPDA members specifically, as CWPDA would like to utilize member land as opposed to non-member land to help with permission and ease of access.

5. Please provide an overview/summary of the proposed water activity (no more than one page). Include a description of the overall water activity and specifically what the WSRA funding will be used for. A full **Statement of Work** with a detailed budget and schedule is required as **Exhibit A** of this application.

There is an identified and pressing need to investigate the use of recharge ponds in the Arkansas River Basin. While recharge ponds have been used exclusively in other parts of Colorado, they are a relatively new water management tool in the Lower Arkansas River Valley. This funding request is for the investigation and demonstration of using recharge under the Catlin Canal in the Arkansas River Basin. The demonstrating shall involve site selection, engineering, design, pre-constructive approvals, construction, and proof-of-concept. This is an estimated $95,000 project with $50,000 in grant funding and $45,000 of in-kind contributions provided by CWPDA and CAA through membership fees.

In an overall picture, this recharge facility will help address the Colorado Water Plan by helping to find means of storage. The creating of storage will come indirectly to Pueblo Reservoir through a mechanism of less storage by CWPDA and CAA. This mechanism will take the water currently stored in the reservoir downstream along the Catlin Canal delivered to the recharge facility and back to the river over the course of time, thus reducing the amount of storage required by CWPDA and CAA. Based on the location and geology of the facility, the return flows could be witnessed along the Arkansas River anywhere from six months to 72 months. Creating this constant supply of water back to the river, the two entities will have less demand for storage to meet the depletion replacement maintenance under the Amended Rules of the Colorado Kansas Compact Compliance. By using recharge facilities, CWPDA's and CAA need to store and release water from Pueblo Reservoir pursuant to operation of Annual Rule 14 Replacement Plans will be considerably lessened. This will free up storage for other Arkansas River water users.

In addition to meeting the Colorado Water Plan, this facility will also help in the administration of water across Rule 14 plans in the Compact Compliance between Kansas and Colorado. Kansas has shown strong interest in increasing the replacement of water in time and place to help maintain historical flows in the Arkansas River. It has been argued that the flows in the river have been decreased due to Well Pumping as opposed to furrow irrigation methods. This change led to the Tule 14 Well Pumping administration to help meet those requirements, but still lacks at replacing water in a historical timing. This recharge facility will help meet those requirements of meeting replacement in time and place and help strengthen the compact agreement for Colorado and Kansas.

Most immediately, the proposed recharge pond would be capable of delivering fully consumable water for replacement of out of priority well depletions and changed water rights' delayed return flow obligations of CWPDA and CAA pursuant to the Amended Rules and CAA pending change of water and future post-85 Wells Plan for Augmentation. Well pumping has been determined to deplete the Arkansas River at the Kansas

Colorado Stateline since the 1980's at which point augmentation groups such as CWPDA formed to try and mediate the issue by replacing depletions to the river using primarily surface water and Fry-Ark Project groundwater return flows. Thus, in the Arkansas River Basin, releases of surface water are made from Pueblo Reservoir and John Martin Reservoir to help keep the river whole and offset such depletions. CAA has a pending water rights change to allow use of Catlin Canal shares as a new source of replacement water. Recharge facilities will help with the timing of the water that is returned to the river leading to smaller releases from reservoirs, most closely matching the timing replacement water accretion to the wells' stream depletions ultimately leading to protection of Arkansas River Water Rights and Compact Compliance and while reducing the reservoir storage needs.

The objectives of this project are to: (1) demonstrate the physical and legal viability of locating and constructing recharge facilities under the Catlin Canal within the Arkansas River Basin; (2) demonstrate through actual operations, how recharge ponds can be used to meet the return flow obligations of changed water rights to protect Arkansas River Basin water rights and to meet the State's Arkansas River Compact compliance requirements; and (3) provide a proof-of-concept for the construction and use of recharge at other locations and for the purposes within the Arkansas River Basin.

Through the entirety of the demonstration, cooperation between CWPDA, CAA the Catlin Canal Company, Division of Water Resources Division Office 2 (under Steve Witte), CWPDA, and land owners, will be achieved. Pursuant to agreements, Catlin Canal Company will be the company that will allow for the delivery operations to the recharge facility after construction. CWPDA will be administering all water that is delivered to the recharge facility, including, but not limited to, fully consumable water including trans-mountain water, decreed or administratively approved (Rule 14 or SWSP) augmentation/replacement water, and Catlin Canal water shares that are decreed for augmentation and replacement. The land owners must provide permission for construction, access, and maintenance during the site evaluation, construction, and post construction processes.

The Catlin Canal is the ideal location for CWPDA to build a recharge facility due to the large depletions that are created in the Arkansas River under the Catlin Canal. The canal itself is approximately 34 miles in length, servicing 18,600 irrigated acres. Per the H-I modeling performed by Division of Water Resources, the irrigation well pumping under the Catlin Canal and Catlin Canal irrigation return flows, impact the river in reaches 6, 7, and 8. The river reach extends from a point about four miles west of Manzanola to La Junta. Specifically, CWPDA services 30 members whom of which own 112 wells, reportedly irrigating 9,270 acres. CAA members own approximately 41 percent of the Catlin Canal shares and irrigates approximately 7,761 acres. Given this largely concentrated area, CWPDA and CAA have the intent to focus replacement and augmentation by recharge accretions to the Arkansas River in the reach from Manzanola to La Junta. Another advantage to identifying the Catlin Canal, is the use of member supplied decreed Catlin Canal shares that can be used for augmentation and replacement in addition to CWPDA's surface and reservoir supplies.

In order to meet the depletion replacement maintenance in dry years, the ideal location of the facility will be constructed under geological formations that will carry return flows back to the river over the course of 72 months or more. The geology will also help ensure that the facility is not constructed on alluvial shale hence, helping to reduce the mineral content returning to the river. This analysis should help in identifying water quality benefits to the project as well. An ideal location will be in a geological region with little to no shale, far enough for 72-month recharge, and ease of access.

Part III. – Threshold and Evaluation Criteria

1. Describe how the water activity meets these **Threshold Criteria.** (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines.)

a) The water activity is consistent with Section 37-75-102 Colorado Revised Statutes.[1]

The Catlin Recharge Demonstration would possibly enhance the current system of allocating water within CWPDA by ensuring maximum utilization of available water supplies, encouraging water storage savings in Pueblo Reservoir, and reducing over-delivery of Colorado water resources to Kansas under the Rule 14 Replacement Rules. The Catlin Recharge Demonstration will provide CAA an effective and efficient means of meeting its delayed return flow obligation of its changed water rights, and reduce its need for storage in the Arkansas River basin. This study would enhance and improve the utilization of current water release obligations to the Arkansas River and would help with management of resource management decisions. The grant would not be implemented in a way that would diminish, impair, or cause injury to any property or contractual right created by intergovernmental agreements, contracts, stipulations among parties to water cases, terms and conditions in water decree, or any other similar document related to the allocation or use of water.

b) The water activity underwent an evaluation and approval process and was approved by the Basin Roundtable (BRT) and the application includes a description of the results of the BRTs evaluation and approval of the activity. At a minimum, the description must include the level of agreement reached by the roundtable, including any minority opinion(s), if there was not general agreement for the activity. The description must also include reasons why general agreement was not reached (if it was not), including who opposed the activity and why they opposed it. Note- If this information is included in the letter from the roundtable chair, simply reference that letter.

Roundtable Evaluation Pending

c) The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes.[2] The Basin

[1] 37-75-102. Water rights - protections. (1) It is the policy of the General Assembly that the current system of allocating water within Colorado shall not be superseded, abrogated, or otherwise impaired by this article. Nothing in this article shall be interpreted to repeal or in any manner amend the existing water rights adjudication system. The General Assembly affirms the state constitution's recognition of water rights as a private usufructuary property right, and this article is not intended to restrict the ability of the holder of a water right to use or to dispose of that water right in any manner permitted under Colorado law. (2) The General Assembly affirms the protections for contractual and property rights recognized by the contract and takings protections under the state constitution and related statutes. This article shall not be implemented in any way that would diminish, impair, or cause injury to any property or contractual right created by intergovernmental agreements, contracts, stipulations among parties to water cases, terms and conditions in water decrees, or any other similar document related to the allocation or use of water. This article shall not be construed to supersede, abrogate, or cause injury to vested water rights or decreed conditional water rights. The General Assembly affirms that this article does not impair, limit, or otherwise affect the rights of persons or entities to enter into agreements, contracts, or memoranda of understanding with other persons or entities relating to the appropriation, movement, or use of water under other provisions of law.

[2] 37-75-104 (2)(c). Using data and information from the Statewide Water Supply Initiative and other appropriate sources and in cooperation with the on-going Statewide Water Supply Initiative, develop a basin-wide consumptive and nonconsumptive water supply needs assessment, conduct an analysis of available unappropriated waters within the basin, and propose projects or methods, both structural and nonstructural, for meeting those needs and utilizing those unappropriated waters where

Roundtable Chairs shall include in their approval letters for particular WSRA grant applications a description of how the water activity will assist in meeting the water supply needs identified in the basin roundtable's consumptive and/or non-consumptive needs assessments.

The recharge demonstration project is designed to conserve existing water resources and reduce pressure on existing water supplies and storage reservoirs, both of which assist in meeting both the M&I and agricultural water gaps identified in the Arkansas River Basin Consumptive Needs Assessment: 2030 (June 2008). The potential water savings that may result from more accurate depletion replacement under the Catlin Canal could reduce the amount of stored water supplies needed to meet Compact compliance requirements under Amended Rules, leaving such storage available to meet other needs, including M&I. Also, by decreasing the costs associated with Compact compliance for groundwater users, recharge facilities could promote further installations of recharge sites and the resultant benefits of increased productivity, and improved water quality. This means that less pressures placed on existing water supplies and existing water supplies may be extended further. This will help in filling the identified Arkansas Basin's 28,000 acre-feet M&I gap.

d) Matching Requirement: For requests from the **Statewide Fund**, the applicants will be required to demonstrate a **25 percent** (or greater) match of the total grant request from the other sources, including by not limited to Basin Funds. A minimum match of 5% of the total grant amount shall be from Basin funds. A minimum match of 5% of the total grant amount must come from the applicant or 3rd party sources. Sources of matching funds include but are not limited to Basin Funds, in-kind services, funding from other sources, and/or direct cash match. Past expenditures directly related to the project may be considered as matching funds if the expenditures occurred within 9 months of the date the contract or purchase order between the applicant and the State of Colorado is executed. Please describe the source(s) of matching funds. (NOTE: These matching funds should also be reflected in your Detailed Budget in **Exhibit A** of this application)

51.4% ($50,000) matching funds from the Arkansas Basin Roundtable **(requested)**
47.4% ($45,000) in-kind funds from CWPDA and CAA

CWPDA is a non-profit organization that obtains revenue from membership. This membership helps to pay for the engineering, legal, and day-to-day operations of the organization. Part of the membership is to help manage the water in the organization. The contribution of membership for 2017-2018 will be used to help pay for the construction of the project. After construction, CWPDA will be administering all water maintenance requirements of the pond, therefore giving a second in-kind contribution to the project.

CAA members will be donating land, time, and money to the project through membership and construction of the facility. This contribution will be based on the construction costs of the facility. Along with helping to pay for construction, CAA will add engineering advice to the project to help select an ideal geological site that creates the most depletion replacement maintenance.

Table 3: Total Project Contributions

appropriate. Basin Roundtables shall actively seek the input and advice of affected local governments, water providers, and other interested stakeholders and persons in establishing its needs assessment, and shall propose projects or methods for meeting those needs. Recommendations from this assessment shall be forwarded to the Interbasin Compact Committee and other basin roundtables for analysis and consideration after the General Assembly has approved the Interbasin Compact Charter.

Item	Contribution
Statewide Account	$45,000
Basin Account	$5,000
CWPDA and CAA Membership	$45,000
Total	**$95,000**

Additional budgeting and funding requirements for the grant can be found in Exhibit A under the Scope of Work.

2. For Applications that include a request for funds from the **Statewide Account**, describe how the water activity/project meets all applicable **Evaluation Criteria.** (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines and repeated below.) Projects will be assessed on how well they meet the Evaluation Criteria. **Please attach additional pages as necessary.**

Evaluation Criteria – the following criteria will be utilized to further evaluate the merits of the water activity proposed for funding from the Statewide Account. In evaluation of proposed water activities, preference will be given to projects that meet one or more criteria from each of the three "tiers" or categories. Each "tier" is grouped in level of importance. For instance, projects that meet Tier 1 criteria will outweigh projects that only meet Tier 3 criteria. The applicant should also refer to the Supplemental Scoring Matrix applied to Evaluation Criteria Tiers 1-3 for Statewide Account requests. WSRA grant requests for projects that may qualify for loans through the CWCB loan program will receive preference in the Statewide Evaluation Criteria if the grant request is part of a CWCB loan/WSRA grant package. For these CWCB loan/WSRA grant packages, the applicant must have a CWCB loan/WSRA grant ratio of 1:1 or higher. Preference will be given to those with a higher loan/grant ratio.

Tier 1: Promoting Collaboration/Cooperation and Meeting Water Management Goals and Identified Water Needs

a. The water activity addresses multiple needs or issues, including consumptive and/or non-consumptive needs, or the needs and issues of multiple interests or multiple basins. This can be demonstrated by obtaining letters of support from other basin roundtables (in addition to an approval letter from the sponsoring basin).

A Recharge Demonstration Project will address multiple needs and issues and address the needs and issues of multiple interests within the Arkansas River Basin. A key goal of the project is to encourage better water management through recharge as opposed to Pueblo Reservoir Storage and Releases. This will help impact the out of priority depletions and return flow requirements near the point of impact. Increased water management provides benefits to Colorado groundwater users. With agriculture water use accounting for over 80% of the water use in the State, increases in management are a necessity in addressing the water scarcity problem. Moreover, improved water management can lead to improved water quality by reducing the amount of infiltration along high nutrient areas and concentrating that infiltration to single point location along permeable non-contaminated soil profiles. Water management can help reduce the amount of water that is left in the river as unused depletion obligation demands, as well as keep the river whole by meeting Compact compliance by making groundwater replacement in time and place. Replacing water at the same time and in the same reach of the river that it is depleted can help keep the Rule 14 obligation efficient and help disperse remaining water supplies across other reaches of the river.

By reducing the amount of storage space in Pueblo Reservoir and utilizing more recharge facilities through the completion of a demonstration project could result in water savings, storage space, and demand of water from groundwater users from year to year. In doing so, it has the potential to contribute to a reduction in the agricultural and M&I water gaps and serve multiple interests.

A recharge facility can also help with surface water users under the Irrigation Improvement Rules and Regulations (Rule 10 plans). Under such, rule 10 plan surface water users can put water into recharge to help replace the river depletion created by irrigation improvements. This could lead to more efficient use while maintaining Compact compliance.

b. The number and types of entities represented in the application and the degree to which the activity will promote cooperation and collaboration among traditional consumptive water interests and/or non-consumptive interests, and if applicable, the degree to which the water activity is effective in addressing intrabasin or interbasin needs or issues.

The entities represented in the application are CWPDA and CAA. Working and cooperating with Catlin Canal, irrigation users in the basin, and Division 2 Engineer's Office of the Division of Water Resources, will be crucial elements of the Project. Catlin Canal will require strong cooperation in the maintenance of the facility as the canal company will oversee all water conveyance through the ditch being delivered to the facility. Approval of the Catlin Canal for carriage of recharge water and delivery to the recharge facilities is vital to the Project. If the Catlin Canal Company is not in cooperation, then recharge ponds will not be able to receive water. CAA and Catlin have been in discussion for use of the Catlin Canal for recharge purposes including the carrying of non-Catlin Water subject to Board approval. Current indications are that the approval will be forthcoming. Individual land owners must allow for dedication of the recharge site and its delivery system to the project and agreement to participate in the study, construction, and maintenance. CAA and CWPDA will cooperate with the Division Two Engineer and State Engineer so that the return charge facility's accretions can be incorporated into the H-I model and Rule 14 accounting so that accretions to the River will be credited to CWDPA and CAA. Also, oversight of the construction and operation of the recharge facility will be requested of them.

Because the Demonstration Project has the potential to free-up storage space, allow more efficient use of available water supplies, and increase water management, the project has the potential to benefit all water users in the Arkansas River Basin. It therefore has the potential to promote cooperation amongst historically competing water interests.

The data that will be obtained from the project will contribute to a better understanding of Arkansas River Basin's water resources, which can lead to improved decision-making and reduced conflicts among historically competing users. All of this leads to a more efficient Arkansas River Basin while meeting the Arkansas Compact Compliance rules.

Finally, the installation of this recharge facility can start to solve the groundwater users' demand for extra water on the free market year to year. It could also allow CWPDA and CAA to better plan how return flow obligations and replacement of out-of-priority in future years can be met. This could reduce the cost for such entities while maintaining a constant supply of depletion replacement to the river for groundwater users and possibly surface water users under the Rule 10 plan.

c. The water activity helps implement projects and processes identified as helping meet Colorado's future water needs, and/or addresses the gap areas between available water supply and future need as identified in SWSI or a roundtable's basin-wide water needs assessment.

The recharge demonstration is designed to actively and measurably lead to the development of conserved water to meet both the M&I gap and the agricultural gap, as identified in the Arkansas River Basin Consumptive Needs Assessment: 2030 (June 2008). It also keeps with the vision of the Needs and Assessment by sustaining agriculture through encouraging groundwater use, which allows for production year-round as opposed to surface water use. A recharge facility will help meet the depletion and return flow obligations even in the non-irrigation season (November 15 to March 15) by creating lagged return flows back to the river from net recharge water infiltrated into the alluvial aquifer during the irrigation season.

Storage of groundwater by recharge is a water management that will result in more efficient use of CWPDA and CAA replacement and augmentation water supplies. This more efficient use will result of less demand by CWPDA and CAA on the current available water supplies; all of which are limited in amount. As a result, the "saved water" will help meet the M&I and agricultural gaps in the Arkansas River basin. Maximizing the use of water in the Arkansas River Basin will help reduce excess water while meeting the requirements of the Arkansas River Compact.

The benefits from this demonstration can create an efficient maximum water usage by groundwater users under the Catlin Canal in the Arkansas River basin eventually leading to the development of recharge facilities on other ditches. This improved management and use of available water supplies will lead to lower cost of water to agricultural users allowing for more efficient methods to be adapted and implemented under the Catlin Canal.

<u>Tier 2: Facilitating Water Activity Implementation</u>

d. Funding from this Account will reduce the uncertainty that the water activity will be implemented. For this criterion, the applicant should discuss how receiving funding from the Account will make a significant difference in the implementation of the water activity (i.e., how will receiving funding enable the water activity to move forward or the inability obtaining funding elsewhere).

Currently, there are limited funds available for this project and WSRA will help meet the goal of this project, while ensuring that the demonstration is appropriately completed. CWPDA and CAA have discussed the need for storage, recharge facilities, or water ownership with Division 2 Engineer's Office and the benefits of having a way to create constant depletion replacement. With storage facilities and new water supplies being very costly and having limited availability, a recharge facility helps meet the demand to replace depletions most efficiently using existing water supplies available to CWDPA and CAA. Without funding from WSRA, a demonstration project is not able to be completed which will create even more demand for constant water supply to meet the depletion requirements of groundwater users. Alternate means of funding have been explored for this project but none appear available.

e. The amount of matching funds provided by the applicant via direct contributions, demonstrable in-kind contributions, and/or other sources demonstrates a significant & appropriate commitment to the project.

CWPDA and local farmers have demonstrated a significant commitment to a recharge facility being built through in-kind contributions of $45,000 which represents 47.4% of the total cost. The in-kind contributions are such that

CWPDA and CAA will be in charge of construction and maintenance on the facility using the designated design from the project engineer. The project engineer will oversee the work, but the cost of contractors will be provided by the applicant. Moreover, CWPDA has consistently demonstrated its needs to operate a Rule 14 plan through the years with in-kind efforts in operating and administering the largest groundwater user's association in the Arkansas River Basin. Local groundwater users including CAA have seen a need for an increased amount of replacement water for depletions and have implemented activities such as CAA pending change of Catlin water rights for uses of augmentation and replacement; CWPDA's acquisition and change of Bessemer water rights and purchase of Holbrook farms and water rights. The use of those water rights to augment agricultural irrigation wells will be much more efficient and less costly if CWPDA and CAA have the management benefits of recharge facilities.

Tier 3: The Water Activity Addresses Other Issues of Statewide Value and Maximizes Benefits

f. The water activity helps sustain agriculture & open space, or meets environmental or recreational needs.

The construction of a recharge facility will help sustain agriculture by allowing the timely replacement of water to the Arkansas River through accretions ensuring that groundwater users can operate without injury to Arkansas River water users. The development of a continuous water supply will help sustain Rule 14 Plans and Post-85 Plan for Augmentation resulting in full compliance of the Compact. The ideal site selection will create lagged accretions to river over a period of several months (ideally 36- 60). A proper selection of a recharge site will allow for infiltration through a non-nutrient rich subsurface layer that will help impact the water quality of the Lower Arkansas River. Finally, a recharge pond will allow people to have a recreational use (primarily hunting) which can be achieved by developing permission, land access, and proper maintenance of the facility (given landowner permission).

g. The water activity assists in the administration of compact-entitled waters or addresses problems related to compact entitled waters and compact compliance and the degree to which the activity promotes maximum utilization of state waters.

The Catlin Recharge Demonstration Project will address problems related to protection of Colorado Water rights and meeting Compact requirements and compliance through proper replacement of out-of-priority depletion and return flow obligations. Furthermore, it will promote maximum utilization of state waters. The intent of the project will be originally used to address groundwater maintenance, but could be expanded to utilize surface water maintenance as well. The primary focus of the project is to create steady reliable accretions of augmentation and replacement water to the stream system. The resultant will be used to retain compliance with the Compact as result of the more efficient use of CWPDA and CAA replacement and augmentation water supplies.

h. The water activity assists in the recovery of threatened and endangered wildlife species or Colorado State species of concern.

While the Recharge Demonstration will not directly assist in the recovery of threatened or endangered wildlife, it will provide important information that can be integrated to help with water management, nutrient reduced water return flows, and sustainable water levels in the Arkansas River in the Lower Basin. By creating constant water supplies, and purified accretions to the river through recharge facilities, the aquatic wildlife will have a more reliable and habitable environment with limited fluctuations in levels.

Better water management creates decisions that can more carefully balance the needs of consumptive water users with those of threatened and endangered species and the environment. A demonstration project encourages users in the Lower Arkansas River Basin Water Users to maximize water resources by replacement at a specific location in a more timely manner as opposed to monthly. This efficiency leads to better management, constant water supplies in the river, and better ecosystem development. Such improvements could contribute to benefitting threatened and endangered wildlife species.

i. The water activity provides a high level of benefit to Colorado in relationship to the amount of funds requested.

The Catlin Recharge Demonstration Project provides a very high level of benefit in relationship of funds requested by helping create better water management tools and facilities for groundwater and possibly surface water users. The amount of water that is conserved through the development of the recharge facility will not necessarily be noticed in the application of water on the field, but more in the amount stored in already tight reservoir space and in the river itself. Groundwater users store water in Pueblo Reservoir and John Martin Reservoir, which is released monthly, taking away valuable space from municipalities and ditch companies. The reduction of storage space required by groundwater users opens the potential for more M&I and ditch storage. The amount of water returned to the river through recharges eliminates the constant fluctuations in water levels created by groundwater users and leaves a steadier supply of water in the river for Arkansas River water users.

The anticipated water management will help in creating more effective agricultural use while maintaining the compact compliance factor. Agricultural users will be able to use groundwater methods to irrigate while making a replacement of depletions in time and place, which will help in constant water use on crops while reducing the over application of water. Without having the ability to replace water in time and place through recharge, the application of groundwater is over-applied. The development of recharge would immensely help make a timely replacement of out-of-priority well depletions and return flow obligations.

j. The water activity is complimentary to or assists in the implementation of other CWCB programs.

Continued: Explanation of how the water activity/project meets all applicable **Evaluation Criteria**.

Please attach additional pages as necessary.

The Catlin Reharge Demonstration both compliments and assists in the implementation of other CWCB programs. Most immediately, the data analysis will be added to the H-I model which would further the CWCB goals of promoting more efficient use of water while ensuring Compact compliance, C.R.S. § 37-60-106(1)(i) and (r). Consistent with these goals, the CWCB has previously provided funding to help with the Arkansas Decision Support System (DSS) to help formulate a system of efficient water use in the Arkansas River Basin. The DSS is in the process of building a more efficient and reliable data collection and reporting that will be transparent to the Compact committee. The addition of recharge facilities will only enhance the capabilities of the DSS giving more accurate water accounting. Finally, this demonstration project will promote water savings which will help with the M&I and agricultural gaps; a primary focus of the CWCB. By reducing the water stored in reservoirs and keeping steady, constant flow in the river, the gap for agricultural use is lessened allowing a stretch of the M&I gap.

Part IV. – Required Supporting Material

1. **Water Rights, Availability, and Sustainability** – This information is needed to assess the viability of the water project or activity. Please provide a description of the water supply source to be utilized, or the water body to be affected by, the water activity. This should include a description of applicable water rights, and water rights issues, and the name/location of water bodies affected by the water activity.

This recharge facility will facilitate more complete use of water under the CWPDA Rule 14 plan that is currently stored in Pueblo Reservoir, and CAA Change of Water Rights in Case No 12CW94 where CAA will be augmenting their wells using Catlin shares. This demonstration will outline a better utilization of available water supplies within the Arkansas River Basin. The site selection of the demonstration is expected to positively affect all Catlin Canal water rights by allowing the maximum utilization of such rights. Additionally, this demonstration is anticipated to have reduced pressure on water supplies for groundwater users under the Catlin Canal currently being used to meet what are believed to be excessive depletion maintenance requirements. The Arkansas River may be positively affected by the results of the study.

2. Please provide a brief narrative of any related studies or permitting issues.

This demonstration builds on the Fort Lyon Recharge Demonstration Project performed by the Lower Arkansas Valley Water Conservancy District funded by the CWCB severance tax dollars in 2016. Adding additional recharge to the Arkansas River Basin helps to lessen the burden on reservoirs and allows for maximum operational practices of groundwater and surface water users in the Arkansas River Basin. As discussed above, the demonstration specifically seeks to locate and design a recharge facility under the Catlin Canal in the size of 5 to 10 surface acres.

The demonstration also relates to work on water quality by looking at site specific soil content to determine if there are any harmful layers that could inhibit water filtration through the recharge site. It is anticipated that a site selection will not be made in an area of large nutrient contaminates in the soil profile, along with proper distance from the river to allow for filtration as opposed to nutrient contamination.

It is not anticipated that any permits will be required for the demonstration project. Approval of land use will be required by the land owners for survey and data collection on the site. Participation in the demonstration will be voluntary, but disruption of land is not anticipated. However, if it is determined that any permits or additional approvals are required, applicants will commit to obtaining such approvals.

3. Statement of Work, Detailed Budget, and Project Schedule

The statement of work will form the basis for the contract between the Applicant and the State of Colorado. In short, the Applicant is agreeing to undertake the work for the compensation outlined in the statement of work and budget, and in return, the State of Colorado is receiving the deliverables/products specified. **Please note that costs incurred prior to execution of a contract or purchase order are not subject to reimbursement**. All WSRA funds are disbursed on a reimbursement basis after review invoices and appropriate backup material.

Please provide a detailed statement of work using the template in Exhibit A. Additional sections or modifications may be included as necessary. Please define all acronyms and include page numbers.

See Exhibit A. Additionally, **Exhibit B** maps depicting the irrigated acres under that Catlin Canal that could benefit from a recharge facility. **Exhibit C** contains letters of support from Catlin Canal Company and Colorado Division of Water Resources Division Two.

REPORTING AND FINAL DELIVERABLE

Reporting: The applicant shall provide the CWCB a progress report every six months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion 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.

Final Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings, and engineering reports/designs.

PAYMENT

Payment will be made based on actual expenditures and invoicing by the applicant. Invoices from any other entity (i.e. subcontractors) cannot be processed by the State. The request for payment must include a description of the work accomplished by major task, and estimate of the percent completion for individual tasks and the entire water activity in relation to the percentage of budget spent, identification of any major issues and proposed or implemented corrective actions. The last 10 percent of the entire water activity budget will be withheld until final project/water activity documentation is completed. All products, data and information developed as a result of this grant must be provided to the CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and help promote the development of a common technical platform.

The above statements are true to the best of my knowledge:

Signature of Applicant:

Print Applicant's Name:

Project Title:

Date:

Return an electronic version (hardcopy may also be submitted) of this application to:

Craig Godbout – WSRA Application
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203
303-866-3441, ext. 3210 (office)
303-547-8061 (cell)
craig.godbout@state.co.us

The above statements are true to the best of my knowledge:

Signature of Applicant: Colorado Water Protective and Development Association by: [signature]

Print Applicant's Name: Kent Ricken

Project Title: General Manager

Date: 1/11/17

Return an electronic version (hardcopy may also be submitted) of this application to:

Craig Godbout – WSRA Application
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203
303-866-3441, ext. 3210 (office)
303-547-8061 (cell)
craig.godbout@state.co.us

Exhibit A
Statement of Work
Date: January 11, 2017

SUBMITTED BY: COLORADO WATER PROTECTIVE AND DEVELOPMENT ASSOCIATION AND CATLIN AUGMENTATION ASSOCIATION IN SUPPORT OF WATER SUPPLY RESERVE ACCOUNT GRANT APPLICATION 2016-2017

I. Background

There is an identified and pressing need to investigate the use of recharge ponds in the Arkansas River Basin. While recharge ponds have been used extensively in other parts of Colorado, they are a relatively new water management tool in the Lower Arkansas River Valley. This funding request is for the demonstration project that would investigate and ultimately demonstrate the use of recharge in the Arkansas River Basin. This project would involve the site selection, design, engineering, pre-constructive approvals, construction, and application of the recharge pond as demonstration facilities on the Catlin Canal. The Catlin Canal is used as it targets a water long ditch (ability to carry water all irrigation season) and the high pumping replacement demand required by Colorado Water Protective and Development Association (CWPDA) and Catlin Augmentation Association (CAA).

The development of a recharge facility will help CWPDA and CAA better manage the water that is stored in reservoirs as well as have a dependable, firm supply of replacement and augmentation water accruing to the Arkansas River. A recharge facility will allow for net recharge water (deliveries to the facility minus evaporation loss) to be infiltrated to the Arkansas River alluvial aquifer and then flow through the aquifer and accrue to the river. The river accretions will then offset CWPDA's out-of-priority well depletions and to meet CAA's return flow obligations. The recharge facility will be beneficial when constructed over permeable soil profiles to allow for fast and efficient infiltration, and over soil that is low in nutrients to allow for water quality effects.

Meeting the Objectives of the Arkansas BIP and the Colorado Water Plan

In addition to the use for meeting Colorado's compact compliance obligations, the proposed recharge pond demonstration project will be broadly beneficial throughout the Arkansas River Basin. The use of recharge facilities is critical to the future operation of Rule 14 Plans, Rule 10 Plans, decreed plans of augmentation, Substitute Water Supply Plans (SWSP) and protection and improvement of Arkansas River water quality. The viability of groundwater pumping depends in large part on the ability to successfully replace historical lagged return flows of augmentation water rights used for replacement and augmentation. Recharge is the most viable and reliable means to provide for assured maintenance of those lagged historic return flows.

Objectives

The recharge facility will meet four primary objectives.

1. Demonstrate the physical and legal viability of locating and constructing recharge within the Arkansas River Basin.
2. Demonstrate through actual operations, how recharge ponds can be used to protect Arkansas River basin water rights, by timely replacement of out-of-priority well

depletions and return flow obligation of water rights used for augmentation and replacement.
3. Meet Colorado's Arkansas River Compact obligations
4. Provide a proof-of-concept for the construction and use of recharge at other locations and for other purposes within the Arkansas River Basin.

Project Description

Task One – Site Identification.

Description: Task One of the demonstration project will involve the identification of three or four potential recharge sites by CWPDA and CAA. These sites will be identified in consultation with the Division Engineer's Office, the Catlin Canal Company, land owners, and other participants in the CWPDA Rule 14 plan. CWPDA and CAA's current preference is to investigate two possible sites, each of which will be located on land currently owned by CAA members. One will be on land east of Manzanola with the other site in the vicinity of either Rocky Ford or Swink.

Method: The applicant will develop a map using the Colorado State University's (CSU) established maps and previous work from CAA engineer, Ivan Walter, under Court Case No. 12CW94 to identify the most effective locations for recharge. Included in this map will be unit response functions from the H-I model to identify the return replacement timing of such ponds. Ideally, the pond will be constructed over a permeable soil profile with no shale interference that will create lagged returned flows of three years or more. Considerations in the identification process will include capability of the site to provide timely amounts of recharge accretions to the River or tributaries to the River, locations along the canal, land ownership, ability of the Catlin Canal and a lateral to deliver water to the site, hydro-geology of the site, and the land lying between the site and the Arkansas River/tributary drain.

Deliverable: Consultant will provide mapping and all geological/technical data collected for the identified sites and a brief report describing the sites' recharge capabilities and outlining the basis for site identification.

Task Two – Site Selection & Authorizations.

Description: Of the identified sites, one will be selected for design and (in Task Four of this proposed demonstration project) construction.

Method: Selection will be based on detailed analysis and testing. Testing may include shallow well pump-in tests or double ring infiltrometer tests. Also, other hydrogeological, legal, financial, and administrative factors that are likely to lead to successful recharge facilities will be considered. CWPDA and CAA will then develop a general operating plan for the ponds so that the plan can be submitted for approval by the Division Engineer's Office and the Catlin Canal Company. Development of the operation plan will involve working with interested parties including land owners to obtain necessary permissions and ensure that appropriate easements and/or agreements are in place to allow for operation of the recharge ponds.

Deliverable: Consultant will provide final mapping of the selected sites, a copy of the operating plan for the recharge pond, and any authorizations obtained necessary for construction of the facility.

Task Three – Recharge Pond Design.
Description: Task Three of the demonstration project will be preparing a design of sufficient detail for construction of the recharge facility at the selected site. The final scope of the design will depend on the site selected.

Method: Using survey points across the selected site, a design of the pond will be constructed using AutoCad. The demonstration pond is anticipated to be approximately 5 to 10 surface acres depending on hydrologic conditions at the selected site. The design will likely include a device to control and measure inflows, an unlined pond, and an overflow/outlet structure and measuring device. In the event that there are remaining funds in the budget, this task may also include contractor selection and limited pre-construction activities to prepare the selected site for construction.

Deliverable: Consultant will provide the pond design and construction documents.

Task Four – Recharge Pond Construction.
Description: Task Four of the demonstration project will be to construct the recharge facility.

Method: The construction will be built per the design specifications developed in Task Three. The constructed components will include a device to control and measure inflows, an unlined pond, and an overflow/outlet structure and measuring device. If there are any permits to be obtained for construction they will be performed in Task Four.

Deliverable: Consultant will provide 'before and after' photos of the construction along with a final report of the actual construction that took place.

Reporting and Final Deliverable: CWPDA shall provide CWCB with a progress report every 6 months that includes all completed tasks, partial tasks, and major issues as identified in this Statement of Work. Following the completion of the project, a final report will be developed summarizing the project and documentation of how the project was completed. Included in this final report will be the deliverables from tasks One, Two, Three, Four, Five, and Six. The final report will be delivered to CWCB within four weeks of completion.

Budget & Schedule

The estimated level of effort required to complete the tasks identified above is provided in the following tables:

Table I: Project Time Table Contingent on the notice to proceed

Task	3 Months from the Notice to Proceed	6 Months from the Notice to Proceed	9 Months from the Notice to Proceed	10 Months from the Notice to Proceed
1 – Site Identification				
2 – Site Selection and Authorizations				
3 – Recharge Pond Design				
4 – Recharge Pond Construction				

Table II: Estimated Total Costs

Item:	Labor	Other Direct Costs	Total
Task 1 – Site Identification	$15,800.00	$0.00	$15,800
Task 2 – Site Selection & Authorizations	$12,500.00	$2,550.00	$15,050
Task 3 – Recharge Pond Design	$11,000.00	$0.00	$11,000
Task 4 – Recharge Pond Construction	$25,500.00	$12,550.00	$38,050
Total Cost			$79,900

Table III: Estimated Labor Costs

	Project Hydrogeologist/ GIS Specialist	Project Engineer	Staff Engineer	Legal	Construction Manager	Total
Billing Rate	$140	$140	$100	$240	$120	
Task 1 – Site Identification	30	20	40	20	-	$15,800
Task 2 – Site Selection & Authorizations	10	20	35	20	-	$12,500
Task 3 – Recharge Pond Design	20	30	40	-	-	$11,000
Task 4 – Recharge Pond Construction	-	10	25	-	180	$25,500
Total Cost	$8,400	$11,200	$14,000	$9,600	$21,600	$64,800

Table IV: Estimated Other Costs Outside of Labor

Item:	Materials	Equipment/Supplies	Mileage ($0.55/mile)	Total
Task 1 – Site Identification	$0.00	$0.00	0	$0
Task 2 – Site Selection & Authorizations	$0.00	$2,000.00	1000	$2,550
Task 3 – Recharge Pond Design	$0.00	$0.00	0	$0
Task 4 – Recharge Pond Construction	$10,000.00	$2,000.00	1000	$12,550
Total Cost				$15,100

Table V: Estimated Funding Sources

Task	Total Cost	Funding Source
Task 1 – Site Identification	$15,800	Statewide Account and CWPDA Membership
Task 2 – Site Selection & Authorizations	$15,050	Statewide Account
Task 3 – Recharge Pond Design	$11,000	Statewide Account
Task 4 – Recharge Pond Construction	$38,050	Statewide Account, Basin Account, and CWPDA and CAA Membership
Total Cost	**$79,900**	

The in-kind contributions will be provided by CWPDA and CAA which will be paid for through the yearly membership dues of the organizations. Much of the research in task 1 will be completed by the CAA engineer that will be supported through Court Case No. 12CW94.

Table VI: Total Project Contributions

Item	Contribution
Statewide Account	$30,500
Basin Account	$5,000
CWPDA and CAA Membership	$44,400
Total	**$79,900**

Following the construction of the project, there will be yearly maintenance that must occur, including sedimentation mediation. CWPDA and CAA will cover the expenses of operating and maintaining the facility using membership dues from year to year.

Exhibit B

Map of the Area

Date: January 11, 2017

SUBMITTED BY: COLORADO WATER PROTECTIVE AND DEVELOPMENT ASSOCIATION AND CATLIN AUGMENTATION ASSOCIATION IN SUPPORT OF WATER SUPPLY RESERVE ACCOUNT GRANT APPLICATION 2016-2017