COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

Today's Date: November 10, 2014

CONEJOS GROUNDWATER MONITORING AND ANALYSIS

Name of Water Activity/Project

CONEJOS RIVER SYSTEM WATER USERS ASSOCIATION (CRSWUA)

Name of Applicant

Rio Grande Basin Roundtable

Amount from Statewide Account: $200,000

Amount from Basin Account(s): $ 19,000

Total WSRA Funds Requested: $219,000

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

FEIN: # 46-4450943

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)

Water Supply Reserve Account – Application Form

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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.

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

1.	Applicant Name(s):	**CONEJOS RIVER SYSTEM WATER USERS ASSOCIATION (CRSWUA)**		
	Mailing address:	P.O. Box 550, Manassa, CO 81141		
	FEIN #:	# 46-4450943		
	Primary Contact:	Brock Canty	Position/Title:	Chairman
	Email:	bcanty@centurytel.net		
	Phone Numbers:	Cell: 719-588-0383	Office:	
	Alternate Contact:	James Henderson	Position/Title:	Secretary
	Email:	james@highaltitudecattle.com		
	Phone Numbers:	Cell: 719-588-8951	Office:	

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.

[X] 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.

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

3. Provide a brief description of your organization

The Conejos River System watershed encompases 767 square miles, serving 110 ditch service areas. There are 81,613 irrigated agricultural acres within the watershed.

CRSWUA is undertaking this study in order to determine how best to reduce groundwater withdrawals while maintaining the viable agricultural production of the farmers and ranchers in the Conejos River watershed.

The nonprofit Articles of Incorporation of Conejos River System Water Users Association (CRSWUA) were filed with the Colorado Secretary of State on May 25, 2012. The first meeting of the Board of Directors of CRSWUA was held on 1/7/14, and the first Annual Meeting was held on 4/9/14.

The members of CRSWUA are a group of water users and irrigators who pool their financial, technical, material, and human resources to support the sustainable operation and maintenance of the Conejos River System on behalf of those who depend upon its waters.

In compliance with Article IV Section 4.02 of the CRSWUA Bylaws, the six Directors of the Board are organized to represent the Conejos River System Water Users as follows:

- Those who divert water from the Rio San Antonio shall be represented by Ruben Sandoval and Jim Bagwell;
- Those who divert water from the Lower Conejos River, bordered by County Road 17 and the Confluence, shall be represented by Brock Canty and James Henderson; and
- Those who divert water from the Upper Conejos River shall be Jim Paine and Rick Espinoza.

4. If the Contracting Entity is different than 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.
N/A

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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)
	Agricultural
	Municipal/Industrial
X	Needs Assessment
	Education
	Other Explain:

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

- Develops ground water data to address "Rules Governing Withdrawal of Ground Water in Water Division No. 3"
- Supports optimum use of water, consistent with preservation of the priority system of water rights
- Provides scientific data to the RG Basin and DWR to create a plan for groundwater sustainability
- Develops historical analysis and real time data to identify and address injurious stream depletions
- Helps identify injurious depletions on the San Antonio, Conejos, La Jara, Alamosa and Rio Grande
- Improves Colorado's ability to more accurately meet its Rio Grande Compact obligations
- Supports agriculture by helping to regulate and balance the use of limited surface and groundwater resources
- Helps maintain a sustainable water supply in the Confined and Unconfined Aquifer

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

X	Study		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: Greater understanding of RG Basin Geohydrology

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

Latitude: Each marked on map Longitude: Each marked on map

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.

(next page)

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The Conejos River System Water Users Association (CRSWUA), like other water managers and groundwater users in the Rio Grande Basin, is facing significant challenges in dealing with the complex hydrogeologic conditions of the San Luis Valley as they affect the ability of water managers to meet the requirements of the State groundwater model for the region, particularly in Subdistrict #3.

Over the years, water users in the CRSWUA have collectively observed aquifer system behaviors that are not entirely in agreement with groundwater model outputs. The current groundwater model of the San Luis Valley uses available hydro-stratigraphic, well pumping, and water level data to calibrate recent water level and flow conditions. The State has used this model (part of the Rio Grande Decision Support System or RGDSS), to forecast future conditions under current and proposed pumping and hydrologic conditions, and intends to use that data in the future as the basis for promoting sustainable Basin groundwater administration.

Wells in the Rio Grande Basin will be shut down unless (1) injurious stream depletions are replaced or remedied, and (2) a plan for sustainability of the unconfined aquifer and the confined aquifer is addressed and maintained. In the over-appropriated Basin, there is not sufficient water available for all well owners to meet the augmentation requirements of the new Rules and Regulations. CRSWUA is concerned about relying upon the State's model for groundwater administration because the model is regional rather than specific to conditions in the Conejos watershed. The model uses a relatively large grid size and has been calibrated on the basis of data from only three monitoring sites located in an area south of Alamosa County. Although those three sites are within the boundaries of the future Rio Grande Water Conservation District (RGWCD) Subdistrict #3 and Subdistrict #4, they are not representative of those Subdistricts' pumping and geohydrologic realities.

This Conejos Groundwater Monitoring and Analysis Study (the Project) will install a groundwater monitoring network in the Subdistrict #3 area. CRSWUA will place water level transducers in 16 local confined aquifer irrigation wells to record and monitor real-time water level data over a sustained length of time. A set of existing wells were identified for potential use within the monitoring network based on available information of perforated well intervals and a goal to achieve a regular spacing across representative aquifer conditions given the Thiessen polygon method that is used to spatially weight wells within the network (see attached graphic).

The Project will establish a scientific basis for evaluating the relationships/interconnectivity between different pumping wells in the area in and around Subdistricts #3 and #4 and providing a better understanding of the lateral transmissivity of the confined aquifer, the degree of connection to the overlying unconfined aquifer, and the potential connection to surface water bodies.

By gathering groundwater data from a larger and more relevant sample, CRSWUA will provide to Colorado a scientific assessment to fine tune the model. Deliverables of the Project will prepare for future groundwater administration; help meet the short-term and long-term objectives of water users in the Conejos watershed; improve understanding of the regional groundwater system in the future Subdistrict #3; provide data to influence the accuracy of the currently accepted groundwater model; improve current tools being used for meeting delivery obligations of the Rio Grande Compact; and significantly improve groundwater administration and management in the Rio Grande Basin.

With a total Project Cost of $336,500, CRSWUA is requesting $219,000 from WSRA funds. The Project will take 24 months to complete.

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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]

   CRSWUA proposes to place water level transducers in local confined aquifer irrigation wells to record and monitor real time water level data over a sustained length of time. Collecting water level data will establish a scientific basis for the evaluation of relationships and interconnectivity between different pumping wells in the area in and around Subdistrict #3. Simultaneous monitoring of water levels and pumping will give a better understanding of the lateral interconnectivity of the confined aquifer, the degree of connection to the overlying unconfined aquifer, and the potential connection to surface water bodies. This Project has no effect on Colorado's system of allocating water, nor does it impact the State's existing water rights adjudication system. As holders of water rights, this project of CRSWUA seeks to provide scientific data to an over-appropriated basin where there is simply not enough water available to completely augment the depletions of groundwater withdrawals from the aquifer. In that sense the project is not only consistent with Section 37-75-102 Colorado Revised Statutes, but actually strengthens and supports its protections for holders of water rights.

   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.

The letter from the Chairman of the Rio Grande Basin Roundtable includes this information.

[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.

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

This Project will assist in meeting the water supply needs identified in the Rio Grande Basin's consumptive needs assessment by monitoring water levels in select wells while controlling pumping in adjacent wells, thereby providing a better understanding of the transmissivity and the lateral and vertical extent of pumping influences. This data will be provided by CRSWUA to the Conejos Water Conservancy District, the Alamosa/LaJara Conservancy, the Rio Grande Water Conservation District (RGWCD) and to DWR in order for Colorado to better understand the groundwater system in the San Luis Valley, thus enabling the improvement of future groundwater model calibrations. This will materially assist in meeting the water supply needs identified in the basin roundtable's consumptive and non-consumptive needs assessments

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)

Total Grant Request WSRA funds **$219,000**

Conejos District	$ 10,000	(matching)	
Alamosa/LaJara	$ 5,000	(matching)	$ 90,000
R.G.W.C.Dist	$ 75,000	(matching)	
DWR Technical	$ 23,500	(in-kind)	$ 27,500
CRSWUA	$ 4,000	(in-kind)	

Basin Funds	**$ 19,000**
Statewide Funds	**$200,000**
Cash Match	**$ 90,000**
In-Kind Match	**$ 27,500**
TOTAL PROJECT	**$336,500**

[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 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.

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).

Working in collaboration with the Rio Grande Water Conservation District, the Conejos Water Conservancy District, the Division of Water Resources, Alamosa/LaJara Response Area, and connecting the entire network to the existing District system through telemetry (Dynotek/AMCi), this Project integrates the willing participation of many landowners and water users in the CRSWUA area. Deliverables meet the Identified Goals and Objectives of the Rio Grande Basin Water Plan by more accurately determining the interactions between surface water and ground water. The findings of this study provide data and analyses which are anticipated to significantly assist in reducing dependence on groundwater pumping. This research will directly benefit the farming and ranching water users on the Conejos River system and protect the agricultural economy of the San Luis Valley.

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.

In addition to the entities mentioned in (a) above, each of which is represented in this application, the interests of municipalities and water/wastewater management entities on the Conejos system are grappling with the difficulty and the expense of finding and acquiring augmentation water to meet the requirements of the new Rules and Regulations. As the data and the analyses resulting from this study by CRSWUA are fed back into the State model, this will significantly improve the accuracy and relevance of the model's calculations, thus potentially easing the Municipal and Industrial pressures identified in the Rio Grande Basin Water 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.

RGDSS Groundwater Model: As described in a memorandum from Engr. Kelley Thompson, Modeling/DSS, Colorado Division of Water Resources, dated August 11, 2014, this Project proposes initial improvements to the confined aquifer monitoring well network in Division 3. DWR views this study as critical for implementation in 2014 in order to characterize aquifer heads and sustainability. In this memo, Mr. Thompson requests that the Rio Grande Water Conservation District work to implement these improvements in coordination with water users. The improvements proposed by DWR include drilling of several new wells and evaluation of the condition of a series of existing wells for use within the monitoring network. The primary purpose of this monitoring network is for verification of aquifer sustainability, and additional high quality water level data will help improve future calibrations of the RGDSS groundwater model. In response to this request, RGWCD has committed $75,000 of its resources to these efforts.

HRS Water Consultants – Eric Harmon: The location for RGWCD drilling a new test well in the Conejos area has been identified, in the event that a need for additional data is identified and the potential use of existing test wells is limited or inadequate. The proposed location for the new Conejos area well is about 4 miles north and east of Antonito. This RGWCD well will be linked by telemetry to this Project's network. (Maps and photos are attached in Exhibit A). Mr. Harmon's expertise is crucial and he will provide additional information and specifications for any new wells that may be required.

Limited Storage Capacity: Platoro is a post-compact reservoir, subject to storage limitations under Article VII of the Rio Grande Compact. By more thoroughly understanding the behavior and the impacts upon the confined aquifer, the water users of CRSWUA may find more flexibility and more storage resources than previously was thought possible with the current State model.

Meet new demands for water: This Project develops new tools which will be critical in determining the future surface/ground-water impacts of population growth, climate instability, and continued drought conditions. Meeting one of the measurable objectives in the Rio Grande Basin Water Plan, this Project thus provides flexibility in "meeting tomorrow's demands for water, to the extent practicable, without impacting existing water rights and Compact obligations."

Tier 2: Facilitating Water Activity Implementation

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).

The influence of CRSWUA lies in its ability to fulfilling its mission, "to represent and provide a voice for water users of the Conejos River System and its tributaries. We believe in using the spirit of cooperation to address and protect water rights/issues." The members and the Board of CRSWUA have determined not to burden the newly created organization with debt at this time, but to capitalize on every opportunity to include its own community, its supporters and its members. CRSWUA believes that its dedication to excellence and quality, while keeping costs to a minimum is the best answer to funding this project. However, grant funds from CWCB/WSRA represent an absolutely essential component of this broadly supported Project.

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.

By leveraging matching resources from the Basin, technical and financial support from RGWCD, administrative and organizational assistance on a volunteer basis, cost-savings and price reductions wherever possible, plus having the strong support of CWCD and DWR, this Project demonstrates significant and appropriate commitment to accomplish its goals. Total project value is $336,500, of which $117,500 is provided by matching and in-kind funds of almost 35%, far exceeding the required leveraging formula.

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.

This Project primarily sustains agriculture by researching the basis upon which irrigation water is administered; eliminating or greatly reducing unnecessary or premature curtailments; establishing a scientific basis for regulating groundwater pumping; and providing data which promises to ease some of the tensions involved in meeting today's augmentation requirements under the new Rules and Regulations.

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.

A major benefit of this project is to significantly increase the accuracy of groundwater management; adding new water management tools, processes, and practices, thus improving the ability of the DWR and CWCD to meet Colorado's obligation to the Rio Grande Compact without overpaying our deliveries to downstream water users.

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

N/A

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

This question has been adequately addressed in the above sections. This project represents an excellent investment of Water Supply Reserve Account funds. Refinement of the model and of the State's Rules and Regulations represents a high level benefit to Colorado in relationship to the amount of funds requested.

j. The water activity is complimentary to or assists in the implementation of other CWCB programs. (I believe CWCB means "complementary" and not "complimentary.")

Of the confined aquifer response areas in Division 3, the Conejos response area has the least amount of historical confined aquifer monitoring well data. Expansion of the current well monitoring network is critical in order to have a comprehensive measure of water levels. A related project recently funded by CWCB is the "Hydrologic Recharge Feasibility Study for Rio Grande Basin Augmentation – Phase I" study proposed by San Luis Valley Irrigation Well Owners, Inc.. This Project is complementary to numerous CWCB-funded projects of the Conejos Water Conservancy District, as it expands the network of established gauging stations and telemetry throughout the District's system.

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

The Project will implement a groundwater monitoring network and will analyze currently available groundwater data in conjunction with new data. Project deliverables will improve understanding of the response of wells in the CRSWUA area to pumping and recharge under current conditions, and will relate these findings to the base period of 1978-2000. The Project will also develop tools and data during the Project which will significantly improve management of groundwater resources for the State, for the Rio Grande Water Conservation District, for the Conejos Water Conservancy District, for the Alamosa/LaJara Conservancy District, and for CRSWUA -- for years into the future.

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 Project will not use or affect any water supply source and will not change or affect any water rights, water-right issues, or water bodies. The water supply source to be studied in this Project consists of groundwater and surface water interactions in the Conejos River watershed, with water bodies and entities within that watershed described as follows:

The upper Conejos River watershed above Platoro Reservoir is about 80 km^2 and forms the headwaters for the Conejos River, a 5th order stream that empties into the Rio Grande Basin. Platoro Reservoir lies at an elevation of 3039m. Conejos Peak is the highest point in the watershed with an elevation of 4015 m. The upper Conejos River watershed consists of four main tributaries (the Adams Fork, the North Fork, the Middle Fork, and the Rito Azul), with all flowing into the main stem of the Conejos River. Human influence above Platoro Reservoir is minimal, as much of the area is designated as wilderness. The area is underlain by a variety of Tertiary volcanics, including lahar flow deposits and numerous ignimbrites (Lipman, 1974).

Alamosa / La Jara Conservancy: The mainstem of the Alamosa River is 51 miles long, extending from near the Continental Divide to east of La Jara. Elevations vary from over 13,000 feet to about 7,600 feet where the river ends at the Lowland and Head Overflow ditch headgates just east of Highway 285. Primary tributaries to the Alamosa River include Treasure Creek, Iron Creek, Alum Creek, Bitter Creek and Wightman Fork.

Terrace Reservoir has obtained a CWCB loan of $1 million and a $1.5 million grant to replace the spillway at Terrace Reservoir, on the Alamosa River. Terrace Irrigation Co. owns the reservoir, which irrigates 9,300 acres in Conejos and Rio Grande counties. Replacing the spillway lifted the storage restrictions, restoring the reservoir's 15,182 acre-foot capacity. CWCB has been working with Alamosa Riverkeepers to create a 2,000 acre foot instream flow water right below Terrace Reservoir.

Platoro Reservoir, a U.S. Bureau of Reclamation project, became available for the Colorado Water Conservancy District's (CWCD or the District) operation and control after Colorado's Rio Grande Compact debt was satisfied in 1985. The District's boundaries include about 100,000 acres, of which 86,000 acres are capable of being irrigated. An additional 8,000 acres that are not within the boundaries of the District are also irrigated by the Conejos and its tributaries.

Highest Priority: The Rio Grande Basin Roundtable has determined that restoring the sustainability of the basin's aquifers is of highest importance and urgency. Availability and sustainability are major issues and form the motivating rationale for this Project, for which an explanation of the two-aquifer system is critical in addressing this issue. Much of the following is taken from the final draft of the Rio Grande Basin Water Plan:

Basin's Limited Storage Capacity: The total amount of reservoir storage in the Basin is small compared to most other basins in the state. Agricultural producers therefore rely heavily on the two aquifers beneath the Valley floor. The uppermost aquifer is comprised of sandy and gravelly soils above a confining clay unit, varying throughout the Valley between 30 and 50 feet thick and up to 100 feet thick in the Closed Basin. This upper aquifer is known as the unconfined aquifer, which simply means that the water in the aquifer is not under pressure from an overlying confining unit.

The unconfined aquifer is recharged from a number of sources, including the many streams that enter the Valley from the surrounding mountains. In addition, the unconfined aquifer is recharged through canal leakage and return flows from irrigation. Several large canals divert water from the Rio Grande and the Conejos and

deliver to lands adjacent to the streams and in the Closed Basin. The unconfined aquifer acts as a large reservoir that helps re-time water supply in order to more closely parallel crop water needs. Irrigators can recharge the aquifer when their surface water right is in priority, and they can pump the water out of the aquifer later in the year when surface water flows have receded.

The confined aquifer, which is the subject of this study, is separated from the unconfined by blue clay deposits and basalt, although there is upward leakage into the unconfined aquifer in some locations. The confined aquifer is also recharged by streamflow at the rim of the San Luis Valley, where neither of the barrier deposits are found.

Despite the common names given to them, the two aquifers and surface streams are, to varying degrees, hydraulically connected (Case No. 2004CW24, District Court, Water Division No. 3 (Nov. 9, 2006). The confined aquifer is significantly thicker than the unconfined aquifer, extending in some locations to several thousand feet below the surface. The confined aquifer is under hydraulic pressure, as the recharge areas near the edge of the Valley are higher than the Valley floor. Flowing wells, also known as artesian wells, result by tapping into the pressurized confined aquifer. McIntire Springs, located near the confluence of the Conejos and the Rio Grande, is fed by the confined aquifer. Flow at the McIntire Springs has decreased over time, indicating a declining aquifer pressure, most likely as a result of groundwater withdrawals from the confined aquifer. One additional source of recharge to the unconfined aquifer is return flows from irrigation.

Unsustainability -- In recent years, high commodity prices coupled with long-term drought have driven irrigators to increase groundwater withdrawals in order to maximize crop yields and revenues. This has resulted in groundwater pumping far exceeding aquifer recharge. Senate Bill 04-222, enacted by the Colorado legislature in 2004, requires restoration of confined aquifer levels and the establishment of systems for long-term sustainable use of both aquifers.

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

There are no known permitting issues related to this Project.

Many studies have been done on the hydrological, hydraulic and geological characteristics of the San Luis Valley and the Rio Grande basin. Allen Davey, P.E., of Davis Engineering and consulting engineer for the Rio Grande Water Conservation District, has done extensive studies on the water resources of the San Luis Valley, providing expert witness testimony in numerous water court cases. Davey's studies on the over-appropriation and non-sustainability of the basin's aquifers consistently point to their overall and long-term decline, over-appropriation and non-sustainability.

Davey has been involved in confined aquifer research since the mid-1970's. He has studied the data collected from the water district's monitoring wells in addition to data collected by USGS. In recent Rules and Regulations testimony, Davey said that although the exact number is unknown, approximately 7,000-8,000 wells exist in the confined aquifer of the San Luis Valley. The Rio Grande Water Conservation District has 39 monitoring wells in the confined aquifer, and the U.S. Geological Survey (USGS) has 100-200 or more monitoring wells in the confined aquifer throughout the San Luis Valley. Well data is generally available from 1970 to the present, although for some of the wells no information is available between 1970 and the early 1980's. In a sampling of representative confined aquifer wells, from 118 feet to 801 feet in depth, taken from Mosca to Monte Vista and from Center to La Jara, Davey has concluded as follows: "I believe more water is being withdrawn from the confined aquifer system than is being recharged." He said the confined aquifer is "clearly over-appropriated and over-used with withdrawals exceeding the supplies that Mother Nature provides."

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.

REPORTING AND FINAL DELIVERABLE - 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 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: Conejos River System Water Users Association

Project Title: CONEJOS GROUNDWATER MONITORING AND ANALYSIS

Date 2/2/2015

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

Craig Godbout – WSRA Application
Colorado Water Conservation Board
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Denver, CO 80203
303-866-3441, ext. 3210 (office)
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