Water Supply Reserve Account – Grant and Loan Program
Water Activity Summary Sheet
May 21-22, 2014
Agenda Item 24(e)

Applicant: Trinchera Irrigation Company

Water **Activity Name:** Mountain Home Reservoir Outlet Study – Phase I

Water Activity Purpose: Agriculture/Study

County: Costilla

Drainage Basin: Rio Grande

Water Source: Ute Creek and Sangre de Cristo Creek

Amount Requested: $25,000

Source of Funds: Rio Grande Basin Account

Matching Funds: $12,650 in-kind match by applicant and third parties: 33.6% of total study costs of $37,650 (refer to *Funding Overview/Match Summary* below)

Staff Recommendation
Staff recommends approval of up to $25,000 from the Rio Grande Basin Account to assist in the funding of the study titled: Mountain Home Reservoir Outlet Study – Phase I.

Water Activity Summary: Trinchera Irrigation Company seeks $25,000 in WSRA Rio Grande Basin Account funds for a feasibility study which will conduct an underwater inspection, capture and analyze video data, and determine the best method to repair, upgrade and/or replace the gates and outlet works. Engineers will evaluate the condition of three 30" diameter gate valves, conduits and operators at Mountain Home Reservoir and develop alternative plans to rehabilitate the outlet works.

The objective of this Project is to determine the Scope of Work, Budget and Timeline for the Phase II implementation of this dam restoration project without affecting the CPW conservation pool or requiring the emptying of the reservoir.

This project addresses three main issues:

1) Dam safety with reliable water level elevation management of the reservoir:
2) Improved water storage management and reduced storage loss:
3) Protection of the CPW conservation pool and enhancement of environmental, recreational and wildlife habitat assets:

The existing gates don't operate correctly and all three of the gates leak. For many decades gate number one is the only one that has been used and it is not known whether gates two and three would open properly or, more importantly, whether they would close properly once opened. Depending on the storage elevation (i.e. head pressure) the gate leakage results in the loss of 150 to 250 AF per month, or from 1350 to 2250 AF annually. The State is now requiring TIC to repair or upgrade the gates and to restore full operating capability at Mountain Home Reservoir.

CPW and TU are conducting parallel feasibility studies, in conjunction with this project, to determine how best to expand and enhance wildlife habitat, improve recreational fishing opportunities, and create additional options for hiking, wildlife viewing and public appreciation of the very popular Mountain Home Reservoir State Wildlife Area.

By restoring full designed operating capacity to the outlet works at Mountain Home Reservoir, this Phase I feasibility study addresses several Measurable Goals and Objectives in the Rio Grande Basin Implementation Plan: Rehabilitate an important Basin reservoir, significantly improve water management efficiency, reduce reliance on groundwater pumping, protect fishery and wildlife habitat assets, and explore ways to improve the outdoor recreational enjoyment of folks who come to Mountain Home.

Discussion:
No additional discussion is required.

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

Funding Overview/Matching Funds

	Cash	In-kind	Total
WSRA Rio Grande Basin Account.	$25,000	n/a	$25,000
Trinchera Irrigation Company	$0	$2,250	$2,250
Trout Unlimited	$0	$400	$400
Colorado Parks and Wildlife	$0	$10,000	$10,000
Totals	**$25,000**	**$12,650**	**$37,650**

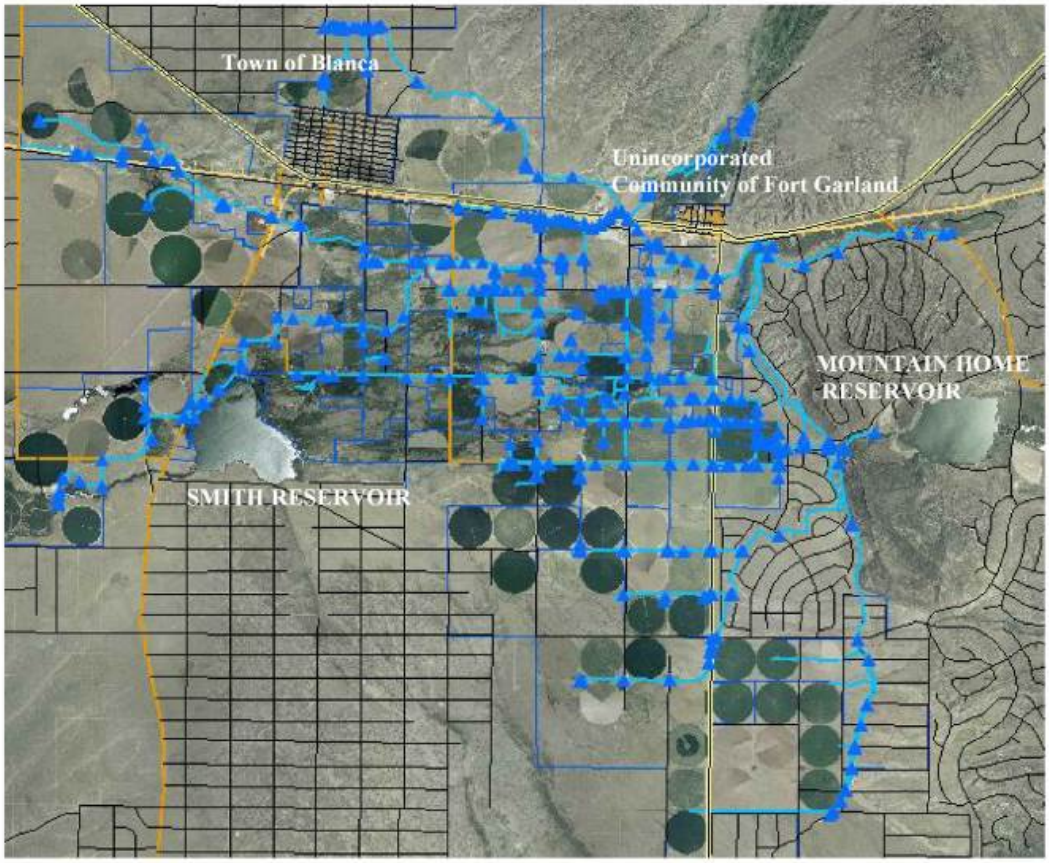
Staff Recommendation:
Staff recommends approval of up to $25,000 from the Rio Grande Basin Account to assist in the funding of the study: Mountain Home Reservoir Outlet Study – Phase I.

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 and Final Deliverable: 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. 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.

Project Map:



Rio Grande Inter-Basin Roundtable
c/o San Luis Valley Water Conservancy District
623 Fourth Street, Alamosa, CO 81101
Telephone: (719) 589-2230
Email: slvwcco1@qwestoffice.net

April 14, 2014

Mr. Michael King, Executive Director
Colorado Department of Natural Resources

Mr. Craig Godbout, Program Manager, Water Supply Planning Section
Colorado Water Conservation Board

Reference: Mountain Home Reservoir
Dam Outlet Works Upgrade – Phase I Feasibility Study

Gentlemen:

The Rio Grande Inter-Basin Roundtable (R.G.R.T.) has determined that the single, most critical water issue confronting the Rio Grande Basin (Basin) is the current unsustainable management of surface and ground water. The R.G.R.T. has made the decision that water activities that address this issue be favorably considered for funding from the Water Supply Reserve Account, SB 2005-179 (WSRA Funds), providing the proposed water activities meet the SWSI findings for the Basin and the CWCB & IBCC Criteria and Guidelines for funding.

As part of this effort the Roundtable made the determination that all reservoirs in the Basin are brought back to their nominal capacity and any outstanding issues raised by the State Engineer is addressed. This request for WSRA meets this objective.

Trinchera Irrigation Company

The Applicant for the WSRA Funding of $25,000 from the Rio Grande Basin Account is Trinchera Irrigation Company (TIC). This request will partially fund a feasibility study for Phase I of what is anticipated to be a two-phase program.

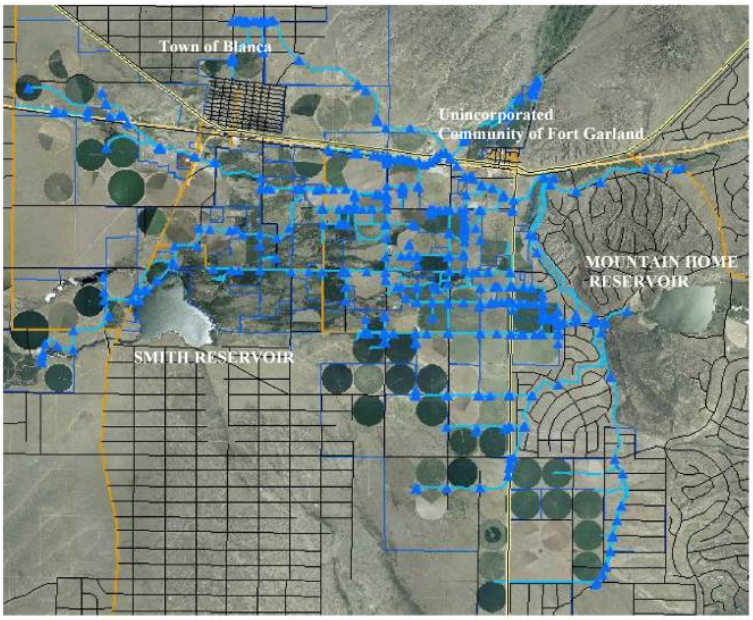
The Mountain Home Reservoir Dam Outlet Works Upgrade – Phase I Feasibility Study (Study) will determine the best method by which to undertake the state-mandated repair and/or replacement of two and possibly all three gates of the outlet works of the Mountain Home Reservoir. Gate # 1 operates poorly and the other two have not been opened in several decades.

The capacity of Mountain Home Reservoir is 18,000 AF. In a typical year, Mountain Home Reservoir delivers irrigation water for about three months and stores water during the

remainder of the year. Depending on the storage elevation (i.e. head pressure) the outlet gate leakage results in the loss of 150 to 250 AF per month, or from 1,350 to 2,250 AF annually. The high end loss figure is more than ½ the capacity of TIC's other reservoir, Smith Reservoir.

Trinchera Irrigation Company (TIC), comprised of 47 stockholders, manages the use of water for irrigation in the northern half of Costilla County, Colorado. TIC operates Mountain Home Reservoir, Smith Reservoir, and the Sangre de Cristo Trinchera Diversion Canal, with a total of approximately 26 miles of canals and 45 miles of laterals. TIC is responsible for the delivery of irrigation water to approximately 100 sprinkler pivots and several thousand acres of flood irrigation, totaling some 12,000 irrigated acres.

The articles of incorporation for the present company, modified in 1946, represent a total of 12,500 shares of stock, with each share entitling the holder to irrigate one acre of land. Stock ownership was limited to owners of land or users of water within the Trinchera Irrigation District during the year 1943. The flexibility of TIC's irrigation system has allowed it to evolve from former hand/horse powered operations and the truck gardening of spinach, carrots and cabbage, prior to the invention of refrigerated transportation, to today's center pivot operations.



Costilla County consists of primarily private land, with only an estimated 2% of the region devoted to public recreation. Mountain Home Reservoir serves a recreation site and is a very popular fishing, boating and hiking destination not only for local residents but for travelers and tourists who come from throughout Colorado and New Mexico, especially during holidays. Excellent ice fishing in winter provides year-round recreational fishing, promoting tourism and the enjoyment of the spectacular natural beauty of Mountain Home Lake with its view of Mount Blanca and the Sangre de Cristo range of the Rockies.

Both Smith and Mountain Home reservoirs are stocked with rainbow trout by the Department of Colorado Parks and Wildlife (CPW), providing recreational fishing. In addition, there are boating opportunities for residents and tourists. The Mountain Home Reservoir site is also a State Wildlife Area. TIC is under contract with CPW to provide a conservation pool, established by a long-standing Agreement with the former Colorado Division of Wildlife. The terms of this agreement include the requirement that TIC make every effort to avoid emptying the Mountain Home Reservoir or reducing its level lower than the conservation pool of 653 AF. In TIC's efforts to enhance the recreational opportunities and fishing experiences they are working cooperatively with CPW and Trout Unlimited (TU) to determine practical ways to improve recreation opportunities and to enhance wildlife habitat at the State Wildlife Area.

Similar to the rest of the San Luis Valley, farmers in Costilla County did not start drilling wells until the 1920s. By the 50s and 60s and continuing to the present, ground water pumping has increased and intensified, resulting in severely stressing available water supplies. As a result, the Rio Grande Basin Roundtable has identified the reduction of pumping as a top priority.

Since most of TIC's shareholders have both surface water and ground water rights, improving the efficient delivery of surface water will tend to discourage reliance on pumping to meet their irrigation needs. TIC's operating funds are derived from assessments levied on shares of stock. These assessments are determined by dividing all operating costs plus debt service, maintaining a budget that reflects the local economy.

The new Colorado Division of Water Resources Well Rules and Regulations for continued ground water pumping are anticipated to require an individual well owner to participate in a Subdistrict Ground Water Management Plan or to have their own augmentation plan to replace injurious stream depletions resulting from their ground water withdrawal. The overall objective for water users throughout the Basin is to address stream depletions caused by well pumping and to establish sustainable ground water levels. Any reduction in pumping will contribute to these goals.

This Phase I Feasibility Study will provide a comprehensive assessment and evaluation of the current condition of the outlet works of Mountain Home Reservoir, including the three gate valves, and consider alternatives to address the findings. This will include underwater inspections of the outlet works and associated outlet valves. The Study will provide alternatives and their associated costs to address the identified issues.

Multiple Benefits

The implementation of the Study's findings will ultimately provide the multiple benefits of:

- Bring Mountain Home Reservoir into compliance with the State Engineer's requirements for draw-down capacity in the event of a high precipitation event
- Rehabilitation of a reservoir in the Rio Grande Basin – A Basin Water Plan priority
- Restore full operating capability at Mountain Home Reservoir
- Assist in meeting Basin water storage needs

- Reduce risk of area flooding
- Improve water management efficiency
- Significantly reduce storage loss, delivering irrigation water efficiently
- Reduce reliance on ground water pumping
- Collaborate with TU and CPW to explore ways to improve sport fishing and boating
- Protect and enhance fishery & CPW conservation pool by avoiding lowering/emptying the reservoir
- Improve the health of riparian corridors by regulating flows
- Enhance recreational benefits in Costilla County, where only 2% of the land is public

Project Funding

Although there is no requirement for a WSRA Basin Fund request to provide matching funds, TIC has proactively demonstrated its commitment to this Phase I Feasibility Study by committing its Superintendent to oversee the project and the performance of the feasibility Study, at an estimated value of $1,125.00. In addition, the cooperative effort with CPW and TU results in each organization contributing in-kind resources of $10,000.00 and $1,525.00 respectively, as shown below.

The $25,000.00 WRSA funding will be used to compensate the third party consultant who will be performing the feasibility study.

Following is the Budget for this Phase I request:

TASK			MATCH	WSRA	PROJ TOTAL
1	TIC staff	3 x 187.5/day	562.50		
	Equipment Rental	$1,000/day x 1 day		1,000	
	Title research, legal	Boundaries, access		2,000	
2	RJH	Per quote/contract		7,900	
	TIC staff	3 x 187.5/day	562.50		
3	RJH	Per quote/contract		11,300	
	Turbidity/Weather contingency	Per RJH quote & assumptions		2,800	
4	CPW-Design	Per RB estimate	10,000		
	TIC staff	4 x 187.5/day	750		
5	TU	Per KT estimate	400		
	TIC staff	2 x 187.5/day	375		
TOTAL			$12,650	$25,000	$37,650

Recommendation:

At the regular R.G.R.T. meeting on April 8, 2014, Members voted unanimously to request funding from SB 2005-179 for $25,000.00 from the Rio Grande Basin Account to fund the Mountain Home Reservoir Dam Outlet Works Upgrade Phase I Feasibility Study.

R.G.R.T. urges the CWCB to approve this request for funding of a project with multiple benefits to local stakeholder, to the Basin, and to the SWSI objectives for long-term statewide planning for sustainable water supplies.

The R.G.R.T. appreciates the support of Colorado Parks and Wildlife, Trout Unlimited, the Department of Natural Resources, and the Colorado Water Conservation Board in assisting in this project, in meeting the needs of all users of Colorado's water, and in fostering intrabasin and interbasin communication and discussion. We believe this project will assist in our combined efforts.

Sincerely,

Michael H. Gibson
Chair, Rio Grande Basin

Attachment: Funding Request Document

COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

Today's Date: April 8, 2014

FEASIBILITY STUDY FOR MOUNTAIN HOME RESERVOIR DAM OUTLET WORKS UPGRADE

Name of Water Activity/Project

TRINCHERA IRRIGATION COMPANY

Name of Applicant

Rio Grande Basin

Amount from Statewide Account: 0

Amount from Basin Account(s): $25,000.00

Total WSRA Funds Requested: $25,000.00

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

FEIN 84-0338590

Application Content

Required Exhibits

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
Revised October 2013

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

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
1580 Logan Street, Suite 200
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): **TRINCHERA IRRIGATION COMPANY**

Mailing address: 610 Main Street
P.O. Box 41
Blanca, CO 81123

FEIN #: 84-0338590

Primary Contact: Wayne Schwab Position/Title: Superintendent

Email: trincherairrigation2@gmail.com

Phone Numbers: Cell: 719-298-1369 Office: 719-379-3467

Alternate Contact: Tracy Kester Position/Title: President

Email:

Phone Numbers: Cell: 719-206-0241 Office: 719-379-3467

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

Trinchera Irrigation Company (TIC), comprised of 47 stockholders, manages the use of water for irrigation in the northern half of Costilla County, Colorado. TIC operates Mountain Home Reservoir, Smith Reservoir, and the Sangre de Cristo Trinchera Diversion Canal, with a total of approximately 26 miles of canals and 45 miles of laterals. TIC is responsible for the delivery of irrigation water to approximately 100 sprinkler pivots and several thousand acres of flood irrigation. Capacity of Mountain Home Reservoir is 18,000 AF.

The number of irrigated acres served by the company has remained relatively stable over the years. In 1907, as Mountain Home Reservoir and its related canals were being constructed, The Trinchera Canal Company was organized to irrigate about 12,000 acres of land in northern Costilla County. Four years later that company was out of funds and the Trinchera Irrigation District was then formed, issuing $650,000 in bonds to be paid to the defunct Trinchera Canal Company for its water rights and land. By 1944 the original company went into the hands of receivers and the present Trinchera Irrigation Company was formed as a nonprofit mutual irrigation company. The articles of incorporation were modified in 1946, issuing a total of 12,500 shares of stock, with each share entitling the holder to irrigate one acre of land. Stock ownership was limited to owners of land or users of water within the Trinchera Irrigation District during the year 1943.

Almost all shareholders have both surface water and ground water rights, with most wells dating from the 50s and 60s. TIC's operating funds are derived from assessments levied on shares of stock. These assessments are determined by dividing all operating costs plus debt service, maintaining a budget that reflects the local economy. Despite soaring fertilizer and fuel costs in the past two years, TIC has struggled to keep assessments steady. The flexibility of TIC's irrigation system has allowed it to evolve from former hand/horse powered operations and the truck gardening of spinach, carrots and cabbage prior to the invention of refrigerated transportation, to today's center pivot operations.

The Division of Wildlife (now Colorado Parks and Wildlife or CPW) has leased rights as a State Wildlife Area (SWA) for recreational fishing, boating, and wildlife viewing. CPW maintains a conservation pool of 653 acre feet at Mountain Home Reservoir. Both Smith and Mountain Home reservoirs are stocked with rainbow trout by CPW, providing recreational fishing and boating activities for residents and tourists. TIC is committed to sustain CPW's conservation pool.

As part of this dam upgrade feasibility study, CPW and Trout Unlimited (TU) are collaborating with TIC to explore opportunities to improve and perhaps to extend the environmental, recreational and wildlife benefits provided at Mountain Home Reservoir State Wildlife Area. However, TIC's charter is to provide irrigation water, with Mountain Home Reservoir decreed for irrigation purposes, and this is the primary focus for the company's stockholders. To the extent possible, TIC is releasing its Superintendent from other duties to assist CPW and TU with recreational and environmental matters of mutual interest, but the company must rely upon CPW, TU, the Basin Roundtable and other entities for resources and funding to cover additional costs which go beyond the company's focus on irrigation.

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

   (the same)

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.

There are no TABOR limitations for Trinchera Irrigation Company.

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.

- Rehabilitate a reservoir in the Rio Grande Basin – A R.G. Basin Water Plan priority
- Restore full operating capability at Mountain Home Reservoir
- Meet State requirements for draw-down capacity
- Improve water management efficiency
- Reduce risk of flood
- Help meet Basin water storage needs
- Significantly reduce storage loss, delivering irrigation water efficiently
- Reduce reliance on ground water pumping
- Protect fishery and the CPW conservation pool by avoiding lowering or emptying the reservoir
- Improve the health of riparian corridors by regulating flows
- Enhance recreational benefits in Costilla County, where only 2% of the land is public
- Explore opportunities to enhance environmental, recreational and wildlife habitat assets
- Collaborate with TU and CPW to explore ways to improve sport fishing and boating

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)
Avg 1800 AF/yr	Efficiency Savings (acre-feet/year OR dollars/year – **circle one**)
	Area of Restored or Preserved Habitat (acres)
	Other -- Explain:

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

Latitude: 37.39512 Longitude: -105.38133

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)

The outlet works at Mountain Home Reservoir have reached the end of their designed functionality. Further deterioration of the gates will severely compromise the ability of TIC irrigators in northern Costilla County to obtain their decreed water rights in priority.

TIC seeks $25,000 in WSRA Basin funds for a feasibility study which will conduct an underwater inspection, capture and analyze video data, and determine the best method to repair, upgrade and/or replace the gates and outlet works. Engineers will evaluate the condition of three 30" diameter gate valves, conduits and operators at Mountain Home Reservoir and develop alternative plans to rehabilitate the outlet works.

The objective of this Project is to determine the Scope of Work, Budget and Timeline for the Phase II implementation of this dam restoration project without affecting the CPW conservation pool or requiring the emptying the reservoir.

This project addresses three main issues:

1) Dam safety with reliable water level elevation management of the reservoir: The gates don't work well and all three of them leak. For many decades gate number one is the only one that has been used and nobody knows whether gates two and three would open properly or, more importantly, whether they would close properly once opened. The State is now requiring TIC to repair or upgrade the gates and to restore full operating capability at Mountain Home Reservoir.

2) Improved water storage management and reduced storage loss: In a typical year, Mountain Home Reservoir delivers irrigation water for about three months and stores water during the remainder of the year. Depending on the storage elevation (i.e. head pressure) the gate leakage results in the loss of 150 to 250 AF per month, or from 1350 to 2250 AF annually. That high end loss figure is more than ½ the volume stored in TIC's other reservoir, Smith Reservoir, when it is full.

3) Protection of the CPW conservation pool and enhancement of environmental, recreational and wildlife habitat assets: CPW and TU are conducting parallel feasibility studies, in conjunction with this project, to determine how best to expand and enhance wildlife habitat, improve recreational fishing opportunities, and create additional options for hiking, wildlife viewing and public appreciation of the very popular Mountain Home Reservoir State Wildlife Area.

Normally, in the early part of the year and prior to irrigating, 98% of Trinchera Creek flows into storage at Mountain Home Reservoir. Irrigation starts out in April in the southern part of the system, expanding coverage as needed until later in the year and sometimes covering the entire system. For the past ten years or so, due to drought conditions, TIC has had to prematurely release water from Mountain Home Reservoir during irrigation season, tapping reservoir supplies sooner than necessary in order to meet shortfalls in late summer and early fall, when the need is greatest.

Water users within the ground water sub-district take a double hit with the loss of storage water to leakage because a majority of the acreage served by the TIC can be irrigated with both surface water and ground water. The more surface water is available for irrigation, the less supplemental ground water is needed to irrigate the same acreage.

By restoring full designed operating capacity to the outlet works at Mountain Home Reservoir, this Phase I feasibility study addresses several Measurable Goals and Objectives in the Rio Grande Basin Water Plan: Rehabilitate an important Basin reservoir, significantly improve water management efficiency, reduce reliance on groundwater pumping, protect fishery and wildlife habitat assets, and explore ways to improve the outdoor recreational enjoyment of folks who come to Mountain Home.

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]
      - TIC proposes an eligible water activity, as identified in Senate Bill 06-179, as it involves conducting a feasibility study to determine the best way to repair, upgrade or replace the outlet works at Mountain Home Reservoir.
      - TIC is an eligible entity in that it is a mutual nonprofit ditch company classified under the U.S. tax code under section 501(c)(12).
      - TIC is requesting funds only from the SB 179 Rio Grande Basin Account, and is not requesting any funds at this time from the Statewide Account.
      - TIC is complying with all applicable submission, review, and approval deadlines and procedures.

   b) The water activity underwent an evaluation and approval process and was approved by the Basin Roundtable (BRT). The application and the Roundtable Chairman's cover letter include 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.

      - This proposal is eligible for funding under Senate Bill 06-179 because 1) it is being submitted for approval to the Rio Grande Interbasin Roundtable pursuant to article 75 of title 37, C.R.S.; 2) this water activity will take place in the Rio Grande Basin; 3) it meets the eligibility categories described below; and 4) this proposal is submitted for approved by the Rio Grande Interbasin Roundtable in conformity with criteria and guidelines jointly developed by the IBCC and CWCB.

[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.

- This water activity meets the eligibility requirements as required in Part 2 of the criteria and guidelines as detailed above.

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.

- Cover letter from the Chairman of the Rio Grande Basin Roundtable provides this information.

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 application was submitted to the CWCB. 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)

- This request for funds is only for the **Rio Grande Basin Roundtable funds.**

The eligibility and evaluation criteria for #2, below, do not pertain to this request for funds from the Basin Account. We have therefore marked through that portion of the application form.

~~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.~~

~~**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~~

[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.

instance, projects that meet Tier 1 criteria will outweigh projects that only meet Tier 3 criteria. 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).
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.
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.

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).
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.

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.
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.
h. The water activity assists in the recovery of threatened and endangered wildlife species or Colorado State species of concern.
i. The water activity provides a high level of 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.

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

Please attach additional pages as necessary.

This project, which requests Basin funds only, satisfies many of the above #2 criteria, with further details available on request. Upon analysis of the recommendations and conclusions of this Phase I feasibility study, TIC will submit a Phase II application requesting funds from both the Basin and Statewide accounts. A CWCB loan component may be required at that time -- an option which the stockholders of TIC are prepared to consider. The above Statewide eligibility and evaluation criteria will be addressed in that subsequent request for funding.

Colorado Parks and Wildlife has advised this project, assessing the present and potential status of wildlife, fishery and recreational fishing opportunities at Mountain Home Reservoir State Wildlife Area. CPW will conduct a parallel feasibility study to determine how best to improve, enhance, and possibly expand these assets in Phase II.

Mountain Home is a bottom-release reservoir. Although that area is not presently accessible, CPW has observed that streamflow below the reservoir is cooler, narrower and deeper than nearby surface water. CPW points out that if that area were opened up for fishing, and if TIC would consider allowing a minimal year-round flow, that would provide ideal downstream conditions for trout.

TIC is not closed to that idea, but is not sure it wants to do that. At present, that flow is created mostly by the leaks in the outlet works, and the whole point is to stop those losses. During this Phase I feasibility study, CPW and TIC will consider the relative costs/benefits of creating access, for recreation and fishing purposes, to an area extending about half a mile below the dam. CPW would have to make this an attractive option for TIC. CPW would be interested in doing some habitat work in that area, potentially installing stream structures, rocks or j-hooks to provide habitat for fish, stabilizing the river channel, benefiting the stream banks and riparian areas, improving recreational fishing, and enhancing wildlife habitat at the reservoir. TIC is not, at this time, convinced that this is a good idea, but the feasibility period provides an opportunity to consider this option.

For this Phase I project, CPW has committed $10,000 in matching resources, providing staff time, hydrology data, and fish research and technical assistance. In addition, CPW has suggested funding sources such as “Fishing is Fun” and Great Outdoors Colorado. CPW looks forward to expanding its contractual relationship with TIC to improve recreational fishing and to enhance wildlife habitat at Mountain Home Reservoir.

Trout Unlimited (TU) is a grassroots non-profit organization of over 150,000 members devoted to the protection, conservation, and restoration of North America’s cold-water fisheries. The Western Water Project is a national program of TU dedicated to finding solutions to water challenges in the West that benefit both cold-water fish and their habitat as well as agricultural water users. TU has determined that this project, which will investigate and address needed infrastructure repairs at Mountain Home Reservoir, is a great fit for the Western Water Project.

TU will join with CPW to discuss with TIC the potential for significant improvements to both the trout fishery in Trinchera Creek, and to the operations of the Trinchera Irrigation Company. Kevin Terry, TU’s Rio Grande Basin project manager for the Colorado Water Project, has committed his time and expertise to investigate ways for TU to become a significant partner in this project. TU intends to contribute considerable staff time for meetings and planning during the initial phase of the project, and will work to bring in funding, volunteer resources, and additional in-kind services as the results of this feasibility study are available.

Great Outdoors Colorado (GOCO) and CPW collaborate to fund numerous outdoor recreation and wildlife projects. CPW and GOCO may collaborate to provide a restroom on the south side of the reservoir as well as other amenities to improve the recreational experience of visitors.

Measurable Goals and Objectives: The Rio Grande Basin has given high priority to reservoir rehabilitation, dam safety and reservoir reoperations, as the funding of these projects provides high yield returns and multiple benefits. In addition, this feasibility project provides an opportunity to investigate options to improve wildlife habitat, fishery, and recreational options at the popular and beautiful Mountain Home Lake.

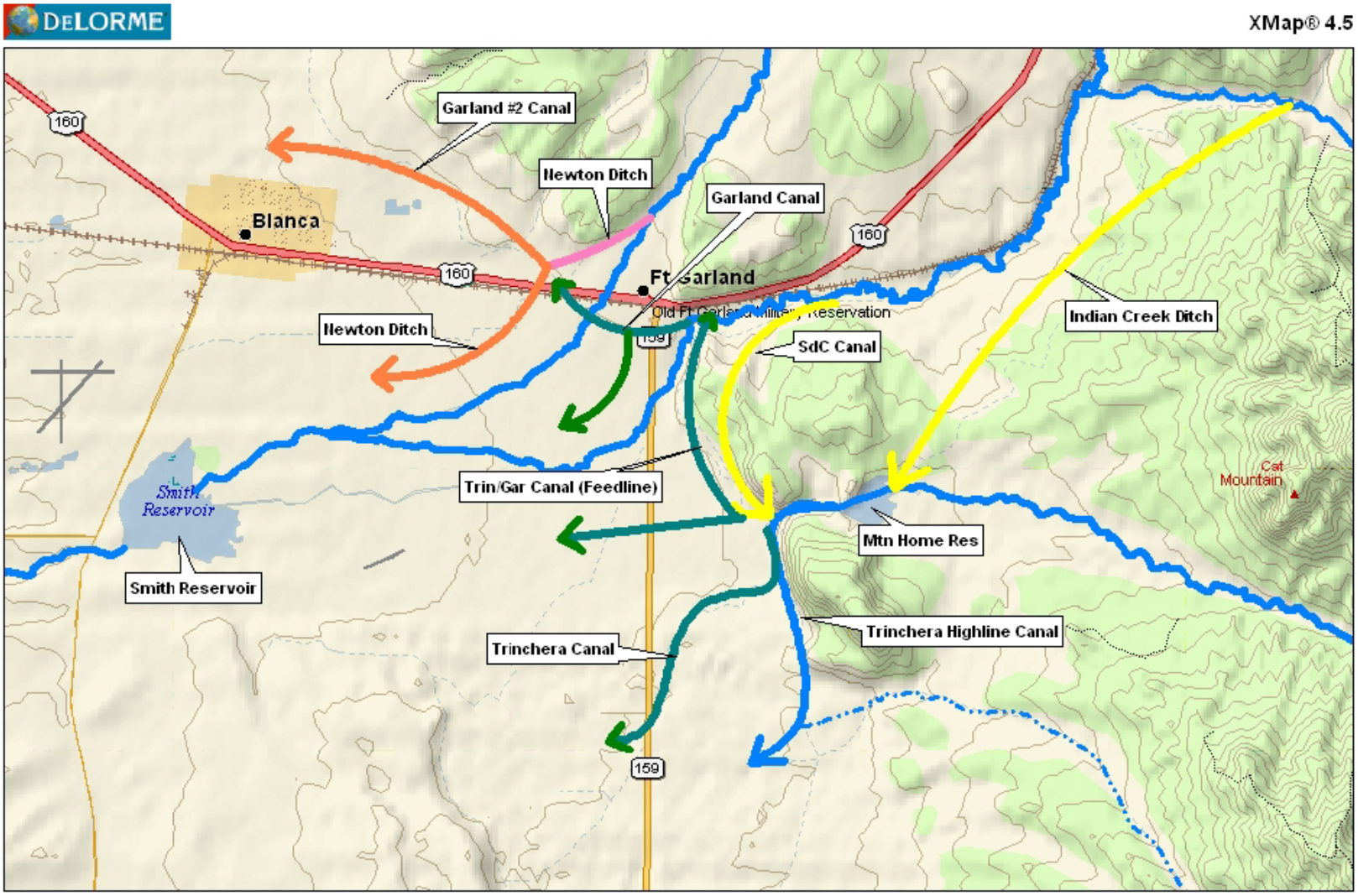
Part IV. – Required Supporting Material

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.

   Water rights in the TIC system reflect more than 150 years of evolution. The majority of TIC's water rights, established in 1863, have been set up to be alternate points of diversion (APD) within the network of other company-owned water rights. The advantage of this type of system is that the volume of water which can be taken out at any headgate is not limited to the decreed amount at that specific headgate. For example, the original Sangre de Cristo water right is never taken at its original point, because that ditch no longer exists, so that water is always taken as an APD. The same rule applies to the Jewel Ditch and to a number of the other original water rights because the original point of diversion no longer exists.

   This system, described in the map on the next page, is perhaps one of the most extensive uses of the APD system in the San Luis Valley. It has many advantages and continues to work well. By restoring full operational efficiency to the outlet works at Mountain Home Reservoir, TIC gains much needed operational efficiency, reduces groundwater use, and allows water in Mountain Home Reservoir to be maximized for multiple uses in irrigation, flood control, fishery, recreational boating and fishing, and the preservation of wildlife habitat.

   (next page)


DeLORME
XMap® 4.5
Garland #2 Canal
Newton Ditch
Garland Canal
Blanca
160
Ft Garland
Old Ft Garland Military Reservation
Indian Creek Ditch
Newton Ditch
159
SdC Canal
Trin/Gar Canal (Feedline)
Cat Mountain
Smith Reservoir
Mtn Home Res
Smith Reservoir
Trinchera Highline Canal
Trinchera Canal
159
Data use subject to license.
© 2004 DeLorme. XMap® 4.5.
www.delorme.com
MN (9.2° E)
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mi
Data Zoom 10-5

In the normal flow regime the Trinchera watershed does not contribute water to the Rio Grande. Only occasionally, during heavy spring runoff flood conditions, does Trinchera Creek ever reach the Rio Grande. Historically there have been a few years in which Trinchera Creek ran from the beginning of spring melt until the end of June, but that was in earlier and wetter times. For this reason, the Trinchera watershed is not looked at as a contributing factor for Compact curtailments.

As this application is being written, the parameters for groundwater subdistricts are still being developed (Ground Water Subdistricts Senate Bill 04-222), with numerous court challenges taking place and grass roots Solutions Subcommittees working between and among water users to resolve many complex issues. Although the Trinchera Ground Water Management District has been technically designated as a court-decreed legal entity, until the actual Plan is in place, discussion of these issues here can be only speculative.

The confined aquifer is only found in a small corner of northwestern Costilla County, where the County line leaves the river and runs toward Mt. Blanca, so the Trinchera Basin is considered upstream from the Closed Basin.

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

There are no permitting issues applicable to this feasibility study. No other study has been made with reference to the operation of the outlet works. In 2008 and 2009 CWCB funded two other proposals for the rehabilitation of the Sangre-Trinchera Canal.

2. 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.

(Exhibit A follows the signature page)

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 5 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: Tracy S Kester

Print Applicant's Name: Tracy Kester

Project Title: FEASIBILITY STUDY FOR MOUNTAIN HOME RESERVOIR DAM OUTLET WORKS UPGRADE

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

Craig Godbout – WSRA Application
Colorado Water Conservation Board
1580 Logan Street, Suite 200
Denver, CO 80203
craig.godbout@state.co.us

EXHIBIT A
Statement of Work

WATER ACTIVITY NAME
Feasibility Study for Mountain Home Reservoir Dam Outlet Works Upgrade

GRANT RECIPIENT – Trinchera Irrigation Company

FUNDING SOURCE – Water Supply Reserve Account - $25,000 Basin Account

INTRODUCTION AND BACKGROUND
Provide a brief description of the project. (Please limit to **no more than 200 words**; this will be used to inform reviewers and the public about your proposal)

Trinchera Irrigation Company (TIC) will conduct a Phase I feasibility study prior to undertaking the state-mandated repair and/or replacement of two and possibly all three gates at Mountain Home Reservoir. Gate #1 operates poorly and the other two have not been opened in several decades. TIC has a long-standing Agreement with the Division of Wildlife, or Colorado Parks and Wildlife (CPW), the terms of which include the requirement that TIC make every effort to avoid emptying the reservoir or reducing its level lower than the survivor pool of 653 AF. Parallel to this structural feasibility study, CPW and Trout Unlimited (TU) will work with TIC to determine practical ways to improve recreation opportunities and to enhance wildlife habitat at Mountain Home Reservoir State Wildlife Area. TIC requests $25,000 for a feasibility study, with $10,000 in technical assistance from CPW and an as yet unspecified but significant contribution from TU. The outcome of this feasibility study will determine the most favorable option for the State-mandate repairs/upgrades. Deliverables: 1) Enhanced dam safety with reliable water level elevation management and required draw-down capability of the reservoir; 2) Improved water storage management and reduced storage loss; and 3) Protection of the CPW conservation pool and enhancement of recreational and wildlife habitat assets.

OBJECTIVES

Conduct underwater inspection of the outlet works in order to determine the feasibility of various approaches to repair, upgrade or replace the gates.

Gather data for a plan to repair, upgrade or replace the gates at Mountain Home Reservoir in order to accomplish optimal operability of the outlet works of the reservoir.

Prepare cost analyses of various alternatives and determine the most favorable course of action in subsequent phases.

Collaborate with CPW and TU to enhance recreational fishing and wildlife habitat assets.
NOTE 1: During the course of this feasibility study TIC Superintendent will oversee all operations prior to, during and following the underwater video inspection. Superintendent will also coordinate with CPW, TU and other entities to prepare for Phase II environmental and wildlife aspects of this project.

NOTE 2: Contractor RJH Consultants has based its price on the video survey taking no more than one day. In order to anticipate the potential for inclement weather, increased turbidity, low visibility, etc., TIC has incorporated such eventualities into the Scope of Work and the Budget. Following are the assumptions of RJH Consultants:

- The reservoir will not be drained for inspection and evaluation of the outlet works.
- The video inspection can be completed in 1 day.
- The dam is currently classified as a large size, high hazard dam and will remain this classification.
- Inspection, assessment, and evaluations will be limited to the outlet works, which includes the intake structure and trash rack, three normally pressurized 30-inch steel conduits, three 30-inch-diameter gate valves and operators. The downstream outlet tunnel will not be evaluated or inspected.
- Dredging of silt from the outlet intake structure and trash rack will not be necessary for the insertion and retrieval of an underwater video inspection camera.
- No site-specific survey information will be required for the development of rehabilitation alternatives.
- The reservoir will not be drained for implementation of the selected alternative.
- One review meeting with Trinchera will be held at the RJH offices to discuss the developed rehabilitation alternatives.

TASK 1 – Access and Mobilization

Description of Task - TIC oversees mobilization and ensures safety of equipment/personnel access. ASI divers assist in temporarily removing trash rack.

Method/Procedure – TIC Superintendent oversees work area as ASI mobilizes commercial dive team with shallow air package and video equipment to site; delivers inspection class underwater ROV for conduit inspection to site; launches dive support vessel for diving and ROV operations.

TIC and ASI personnel remove existing corroded steel trash rack structure using surface supplied divers and lift bag.

TIC, CPW and TU collaborate to clarify boundaries and to create safe access to recreational and wildlife habitat work areas.

Deliverable - Underwater inspection team, equipment and dive support vessel are deployed and in place. TIC is provided assurances with respect to access, activities and construction operations which will take place on its property.

TASK 2 – Inspect Outlet Works

Description of Task Conduct underwater inspection and capture video data for delivery in DVD format.

Method/Procedure Under supervision of TIC Superintendent, The quality of the video will depend upon water turbidity levels.

- Perform an underwater video inspection of the trash rack, intake structure, and three 30-inch-diameter conduits. Document current conditions and identify deficient locations and potential problem areas. The video inspection will start at the trash rack and progress downstream to the upstream face of the three 30-inch valves. The downstream tunnel will not be videoed or inspected.
- Inspect and evaluate the condition of the three 30-inch-diameter gate valves and operators. Video document the condition of the valves using digital photographs and digital video devices.
- Prepare an outlet inspection memorandum.

Deliverable Outlet inspection memorandum and data collected for evaluation

TASK 3 – Alternatives Development and Report

Description of Task Evaluate data and develop alternative plans to rehabilitate the outlet works.

Method/Procedure Identify discovered outlet deficiencies and describe the problems they represent to dam safety and operations of the outlet works; Complete the report within 15 days of completion of the inspection, as follows:

- Identify discovered outlet deficiencies and describe the problems they represent to dam safety and operations of the outlet works, including SEO reservoir outlet drawdown criteria.
- Develop at least two rehabilitation alternatives and develop a comparative cost for each alternative to include sufficient detail for concept understanding and evaluation.
- Identify advantages and disadvantages of the alternative and work with Trinchera to select a preferred alternative to rehabilitate the outlet works.
- Develop a typical plan and section figure to illustrate the preferred concept and develop a cost estimate for the final design and construction of the selected rehabilitation alternative.
- Prepare a memorandum that documents the work performed. This will include findings, recommendations, concept drawings, and cost opinion.
- Participate in a meeting with Trinchera to discuss the alternatives and to select the preferred alternative.

Deliverable At least two rehabilitation alternatives are developed with comparative cost analysis for each alternative. The most favorable alternative is identified and recommended.

TASK 4: Colorado Parks & Wildlife – Coordination - TBD during feasibility period

TASK 5: Trout Unlimited – Coordination - TBD during feasibility period

BUDGET

Provide a detailed budget by task including number of hours and rates for labor and unit costs for other direct costs (i.e. mileage, $/unit of material for construction, etc.). A detailed and perfectly balanced budget that shows all costs is required for the State's contracting and purchase order processes. Sample budget tables are provided below. Please note that these budget tables are examples and will need to be adapted to fit each individual application. Tasks should correspond to the tasks described above.

(next page)

B U D G E T

FEASIBILITY STUDY FOR MOUNTAIN HOME RESERVOIR DAM OUTLET WORKS UPGRADE

TASK			MATCH	WSRA	PROJ TOTAL
1	TIC staff	3 x 187.5/day	562.50		
	Equipment Rental	$1,000/day x 1 day		1,000	
	Title research, legal	Boundaries, access		2,000	
2	RJH	Per quote/contract		7,900	
	TIC staff	3 x 187.5/day	562.50		
3	RJH	Per quote/contract		11,300	
	Turbidity/Weather contingency	Per RJH quote & assumptions		2,800	
4	CPW-Design	Per RB estimate	10,000		
	TIC staff	4 x 187.5/day	750		
5	TU	Per KT estimate	400		
	TIC staff	2 x 187.5/day	375		
TOTAL			$12,650	$25,000	$37,650

SCHEDULE

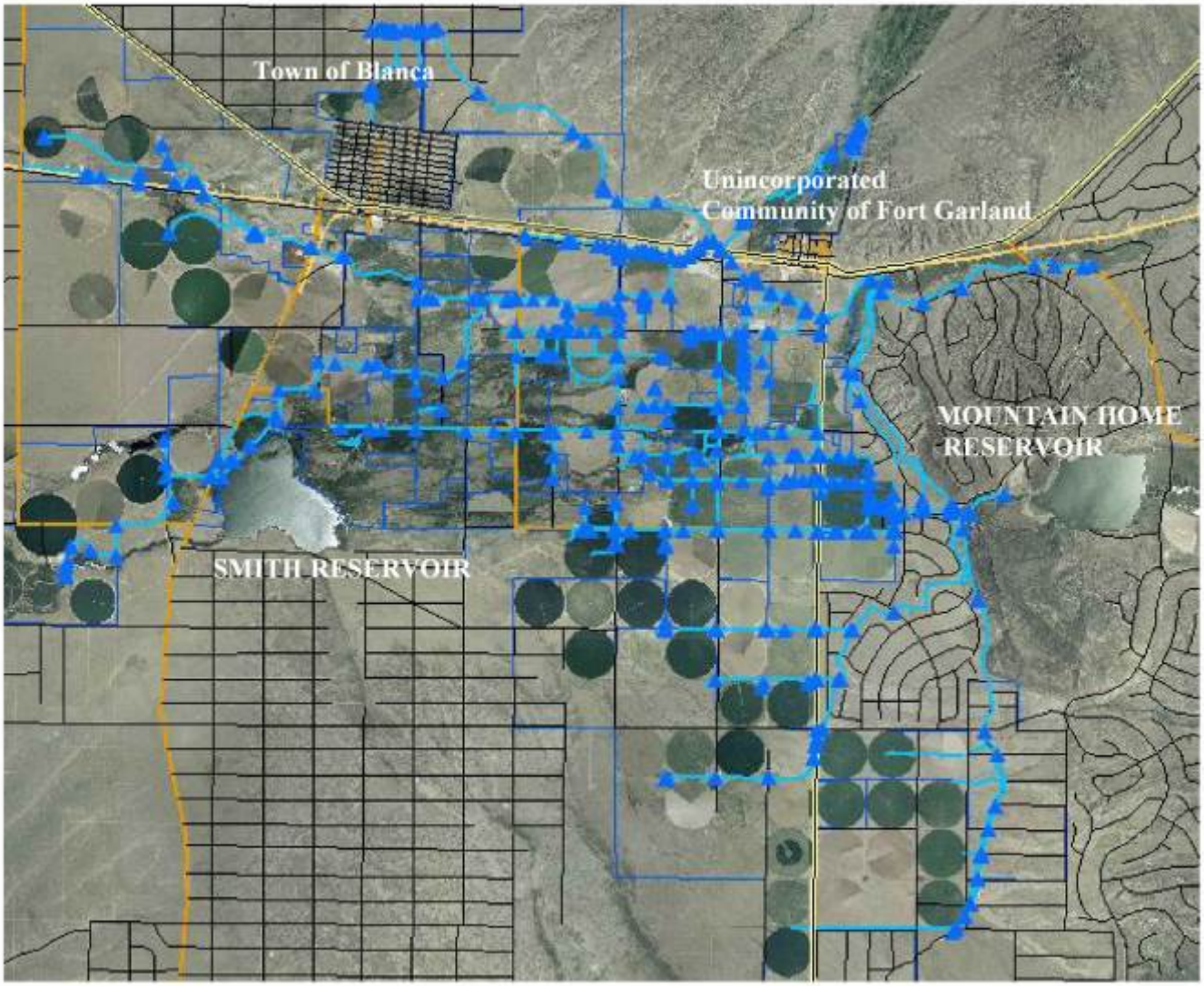
Underwater inspection is anticipated to take no more than one day, but one week is allowed for in the event of unforeseen circumstances.

The entire feasibility project will be completed in fewer than 3 months after NTP

2014	June	July	August	September
Notice to Proceed (NTP)				
Underwater Inspection				
Engineering/Analysis/Reporting				
FINAL REPORT to CWCB				

EXHIBIT B

Maps, Photos, Additional Data

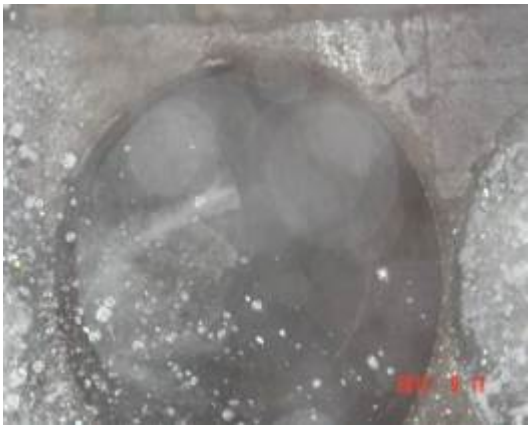


PRE-PROJECT PHOTOS

Gate Room

Outlet Works

Valves



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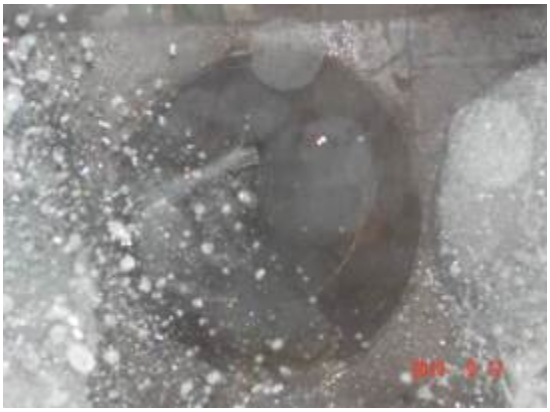

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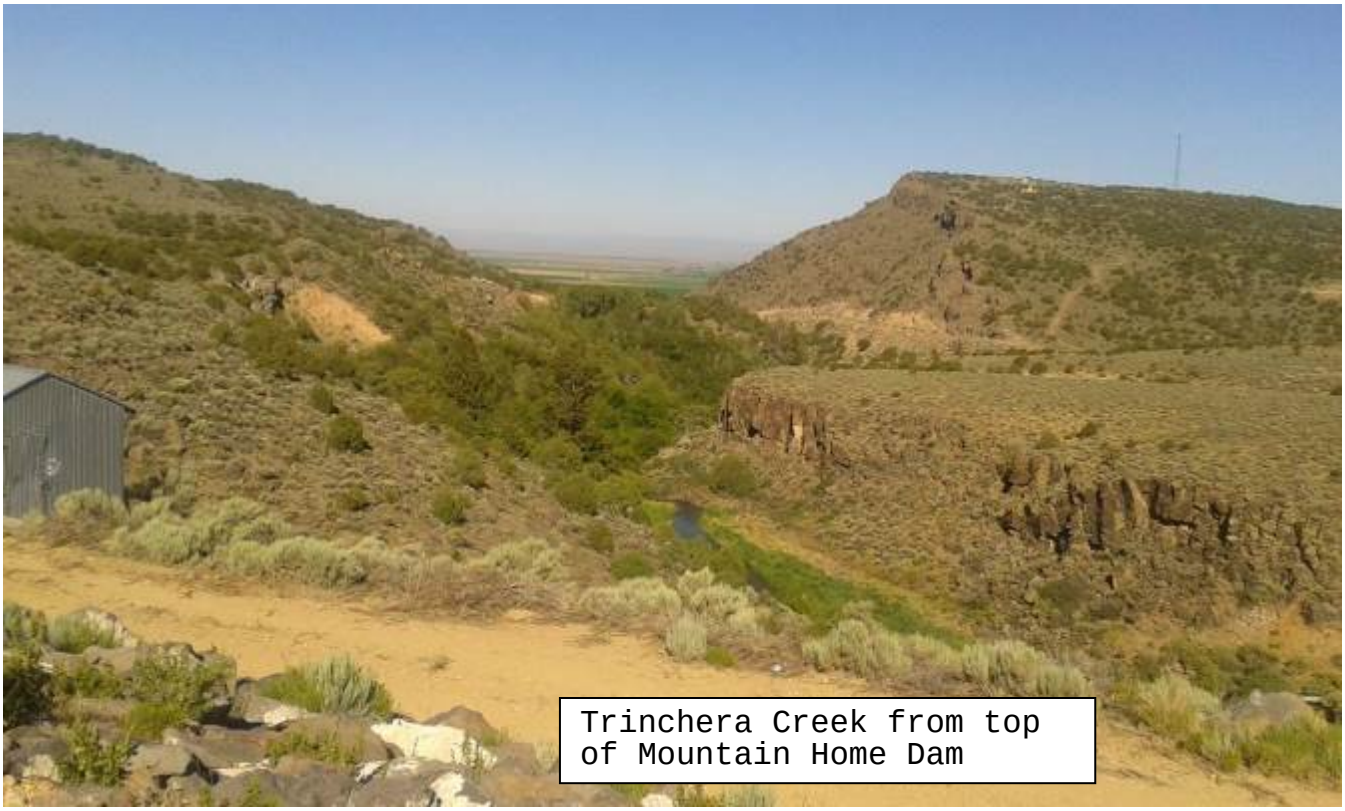
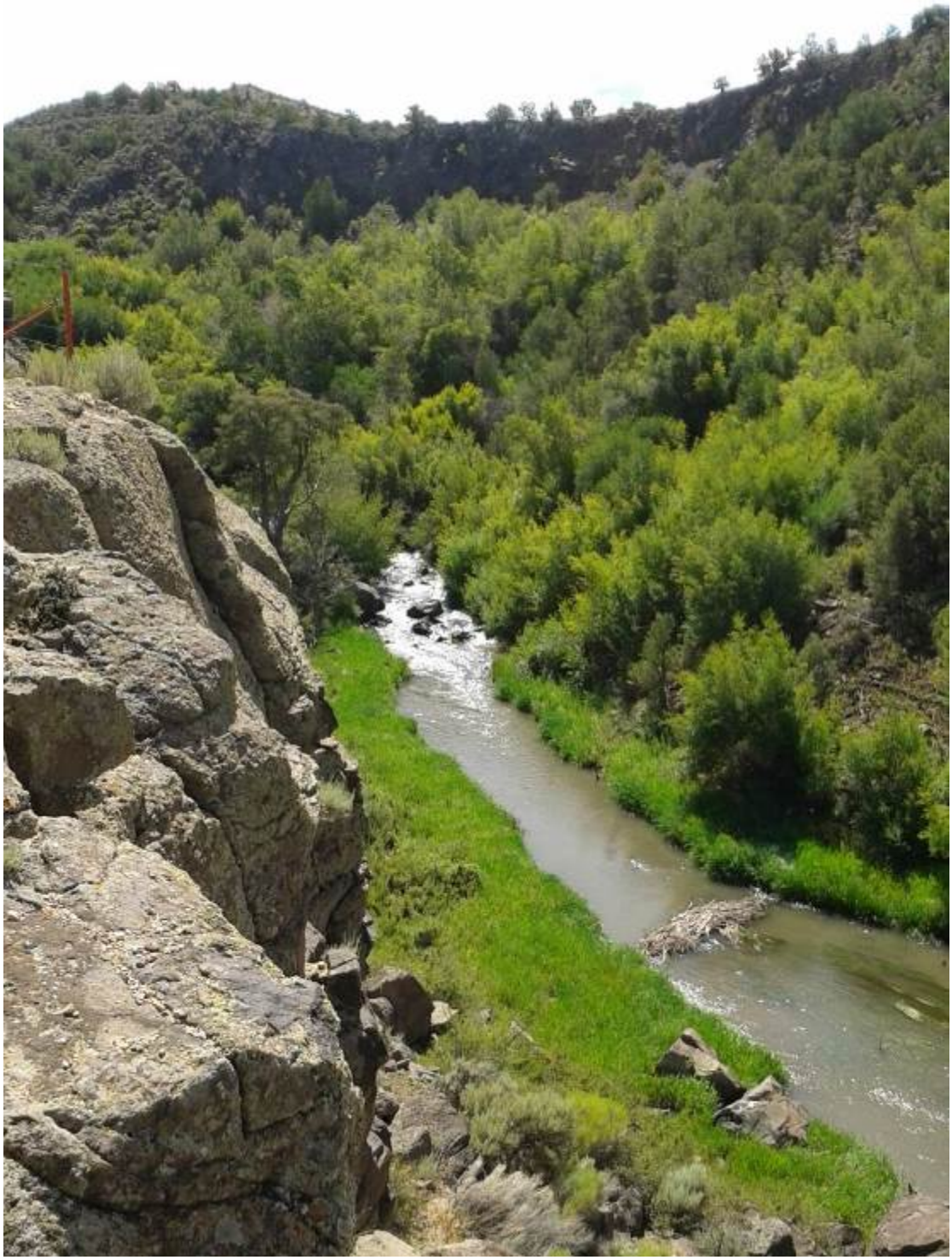


Trinchera Creek from top of Mountain Home Dam

Trinchera Creek Canyon Midway
below Mountain Home Dam

Trinchera Creek, Mouth of
Canyon Below Mountain Home Dam

Trinchera Creek, midway below, facing Mountain Home Dam



OPERATION AND MAINTENANCE
(Wayne Schwab, Superintendent)

In irrigation season the operation of the gates at Mountain Home Reservoir starts with the availability of water, per DWR determination. Stockholders call in to request their allotted amount and how they would like it delivered, for example, "2 acre feet for 10 days." Every morning, as necessary, we open or close the gate according to what is needed for the day. On the next page is a sample from last year showing a portion of the log which we maintain. Each number represents the number of turns of the wheel to open or close the gate.

Automation of the outlet works will be among the options considered during this feasibility study.

At the beginning and end of the water season we perform a routine Preventive Maintenance on the gas motor and regularly grease the gears.

Mountain Home Dam

Gate Valves

compensate 10 turns for slack when changing direction

Date	Open	Close	Total Open	cfs	Reservoir af
4/12/2013	25		25	2.8	2280
4/12/2013	5		30	3.9	2280
4/13/2013	10		40	5.8	2283
4/21/2013	40		80	6.8	2279
4/23/2013		20	60	5.6	2267
4/23/2013		15	45	4.1	2267
4/28/2013	15		60	4.1	2269
4/29/2013	10		70	7.0	2270
4/29/2013	10		80	7.6	2270
5/1/2013		40	40	4.1	2264
5/11/2013	35		75	7.1	2306
5/16/2013		35	40	4.5	2313
6/3/2013	35		75	5.1	2509
6/4/2013	3		78	6.8	2514
6/10/2013		35	43	4.3	2525
6/24/2013	35		78	5.6	2522
6/25/2013	10		88	7.6	2509
6/28/2013	10		98	12.0	2462
6/29/2013		5	93	11.7	2438
6/30/2013		30	63	7.3	2418
7/12/2013	22		85	7.7	2244
7/13/2013	10		95	10.3	2234
8/5/2013	5		100	13.2	1826
8/8/2013		60	40	3.4	1798
8/16/2013	40		80	6.1	1811
8/17/2013	5		85	7.3	1803
8/19/2013	10		95	11.7	1779
8/26/2013		45	50	3.1	1647
8/27/2013	15		65	4.3	1642
8/28/2013	10		75	5.6	1636
9/1/2013	5		80	6.6	1606
9/6/2013	10		90	9.7	1558
9/13/2013		40	50	6.4	1451
9/16/2013		50	0	2.7	1483

RJH CONSULTANTS

RJH Consultants, Inc. (RJH) is a geotechnical water resources firm specializing in evaluation, civil design, and construction engineering for raw water supply systems; dams, reservoirs, and appurtenant facilities; and water conveyance infrastructure.

RJH projects range from small geotechnical explorations to large embankment dam design and construction. RJH manages projects with overall costs ranging from several thousand dollars to in excess of $200 million.

RJH specializes in geotechnical and water resources engineering. The firm's primary expertise, experience, and identity are in feasibility, conceptual, and final design services for evaluation, design, rehabilitation, and construction of raw water storage projects. Specifically, RJH has successfully provided planning, design, and construction engineering services for over 50 dam projects since the company was established in 2005.
RJH provides comprehensive services in the following areas:

Geologic and geotechnical assessment, investigations, and analyses to evaluate dam locations and foundation conditions; and develop material properties for foundations and embankments.
Hydraulic and hydrologic design for spillways, outlet works, and terminal facilities.
Structural design of spillway structures, intake structures, conduits, outlet works structures, and other appurtenant structures such as vaults and buildings.
Preparation of Dam Safety Inspection Reports, Emergency Action Plans, Standard Operating Procedures, Operation and Maintenance Manuals, and floodplain modification studies.
Dam Breach analysis to determine the potential hazard classification and the inundation area downstream of a dam.
Planning and feasibility studies to identify water supply alternatives and water resource planning to develop Client water resources portfolio.
Design and evaluation of earthen and concrete gravity dams.

Additional services include forensic analysis of dam deficiencies; design, installation, and evaluation of instrumentation; and dam safety inspections and investigations.

http://www.rjh-consultants.com/

RJH Consultants were selected to perform the feasibility study primarily because they did not require emptying the reservoir.

DIVISION OF WATER RESOURCES

Letter from Dick Wolfe, P.E.
Director/State Engineer

Estimated Range of Stream Depletions for Four Proposed Responses Areas:
Conejos Response Area,
Alamosa-LaJara Response Area
Trinchera Response Area
Rio Grande Alluvium Response Area

September 25, 2013

Following is a letter from State Engineer Dick Wolfe to the Rio Grande Water Conservation District which detailed the ranges of anticipated stream depletions from well operations for areas in the southern part of the San Luis Valley as of that date.

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RESOURCES

John W. Hickenlooper
Governor

Mike King
Executive Director

Dick Wolfe, P.E.
Director/State Engineer

September 25, 2013

Steve Vandiver, Manager
Rio Grande Water Conservation District
10600 Hwy 160
Alamosa, CO 81101

RE: Estimated Range of Stream Depletions for Four Proposed Responses Areas: Conejos Response Area, the Alamosa-La Jara Response Area, the Trinchera Response Area, and the Rio Grande Alluvium Response Area

Dear Steve,

This letter is to provide the Rio Grande Water Conservation District ("District") with estimated stream depletion ranges for four of the planned Response Areas in the San Luis Valley. This information will help the District provide guidance to those forming groundwater management subdistricts in those Response Areas and developing draft Plans of Water Management for those subdistricts. We understand that the subdistricts need this information both for planning and for development of their financial structures.

BACKGROUND:
As you know, the RGDSS groundwater model is operated in paired runs to determine the impact of net groundwater consumptive use by wells in the various response areas. A comparison between a Response Area's 'no-pumping' and 'pumping ' runs generates a list of differences in items such as stream flow, aquifer storage, native evapotranspiration, sub-irrigation, etc. Of interest to the District will be the difference between the streamflow in the 'pumping' and 'no-pumping' runs, which are the depletions to impacted stream reaches caused by well pumping. These stream depletions may injure senior water rights, and any injurious stream depletions must be replaced or otherwise remedied through a subdistrict's plan of water management.

The Rio Grande Decision Support System (RGDSS) utilizes data from 1936 through 2010. The comparative runs made for this analysis for each Response Area used the hydrology, streamflows, aquifer conditions, diversion data, climate data, crop demands, etc. for the period 2001-2010 to estimate the range of stream depletions. This time period has excellent data, is reflective of recent conditions in the valley, and should provide a range of stream depletions caused by well pumping that can be used for your planning purposes. Actual stream depletions will vary from year-to-year, sometimes very much so, depending on climatic conditions, crop demands, aquifer conditions, and available water supplies. With that year-to-year variability in mind, we are providing the maximum and minimum annual values from a suite of the model runs for your planning purposes.

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Please recognize that it is possible that the RGDSS groundwater model will predict stream depletions in future years that are outside the ranges provided in this letter. While providing fixed ranges at this time is not possible, my staff and I understand that the District needs the enclosed estimates as a starting point from which to begin the planning necessary for forming new subdistricts and developing their plans of water management.

RANGES PROVIDED:
The table below provides information for the Conejos Response Area, the Alamosa-La Jara Response Area, the Trinchera Response Area, and the Rio Grande Alluvium Response Area. The impacts are divided into the various rivers or streams on which the RGDSS groundwater model estimates the depletions occur.

We are still incorporating into the model the recent borehole drilling/geologic work the District funded last month in the northern part of the basin in the Saguache and San Luis Creek areas. Incorporating into the model the data provided by this recent work will help the model more accurately predict impacts in those areas. We are not providing estimated ranges of depletions for those Response Areas, but will do so when the Division of Water Resources ("DWR") finishes incorporating the new data and calibrating the model for those two areas. Our overall review indicates that the information being incorporated in the Saguache and San Luis Response Areas will not affect the results in the southern part of the basin to any large degree, so we are comfortable with the information we are providing for the southern Response Areas at this time.

Please note that we have broken La Jara Creek into 'Upper' and 'Lower' administrative reaches. Confined aquifer pumping can put extra water into a stream, generally as return flows from irrigation. This condition manifests itself particularly in lower La Jara Creek where there is a large volume of confined aquifer well pumping. That well pumping can deplete the upper end of the creek while the return flows add to the water supply in the lower end of the creek. The return flows are represented as 'negative' values in the table because here the well pumping results in more water in those reaches of the stream rather than stream depletions. Thus, we separated La Jara Creek into administrative reaches because if we simply looked at the entire stream for stream depletions, confined aquifer pumping return flows at the lower end would obscure the potential for injurious depletions in the upper stream reach.

The table below provides estimated stream depletions by administrative reach for La Jara Creek so that the District understands that future subdistricts will be required to replace or otherwise remedy injurious stream depletions in administrative reaches in which they occur even if a different administrative reach on the same stream experiences gains due to groundwater withdrawals made by subdistrict wells.

The table below lists the maximum and minimum values of stream depletions to the various streams for the four Response Areas based on recent runs of the RGDSS groundwater model as described above. These runs of the groundwater model have some variability as DWR continued incorporating new or improved information and calibrating the model. These values represent the annual variability across the suite of model runs.

Annual Stream Impact Ranges by Response Area for Impacted Streams
(all values in acre-feet/year)

			Response Areas			
			Rio Grande Alluvium	Conejos	Alamosa-La Jara	Trinchera
Impacted Stream Systems	Rio Grande	Min	1,400	330	4,900	1,200
		Max	2,800	920	11,800	2,000
	Conejos River System	Min		2,900	4,000	190
		Max		6,500	9,000	610
	Alamosa River	Min		***	-780	
		Max		110	440	
	La Jara Creek Upper	Min		***	***	
		Max		150	1,100	
	La Jara Creek Lower	Min		-250	-1,400	
		Max		***	80	
	Trinchera Creek	Min				140
		Max				990

- *Minimum and maximum values are derived from a suite of model runs, do not represent actual replacement obligations, and are provided for planning purposes only*
- *Conejos River System includes the Conejos, Los Pinos, and San Antonio Rivers*
- *La Jara Creek is divided into upper and lower administrative reaches at the Hardtack Ditches (WDIDs 2100537 and 2100538)*
- **** Near zero impact*

RESPONSE AREAS:
The enclosed map illustrates the planned Response Areas used in the model runs. The Response Areas have been delineated based on common hydrologic conditions, similar aquifer characteristics, well completion depths, ditch service areas, groundwater information, etc., so that they group wells that have similar impacts on stream flows.

SUSTAINABILITY:
C.R.S. 37-92-501(4) directs the State Engineer to regulate use of the confined and unconfined aquifers so as to maintain a sustainable water supply in each aquifer system. The legislature further directed the State Engineer to regulate use of the confined aquifer such that artesian pressure is allowed to fluctuate in the same range and manner as it did between 1978 and 2000. Accordingly, each subdistrict's Plan of Water Management must address the sustainability of the aquifers from which its wells withdraw groundwater. DWR anticipates discussing with the San Luis Valley Advisory Committee in October how future subdistricts will meet the statutory sustainability requirements and achieve any necessary recovery in aquifer conditions.

DIVISION OF WATER RESOURCES

DWR understands that sustainability requirements will impact the financial planning of the subdistricts. We will provide additional guidance on sustainability as soon possible.

We believe that the information provided above will assist your constituents as they work toward forming subdistricts and developing Plans of Water Management. As DWR develops more detailed information, including Response Functions for the various Response Areas, we will provide that more detailed data to you for your planning purposes.

Thank you for your patience in this process.

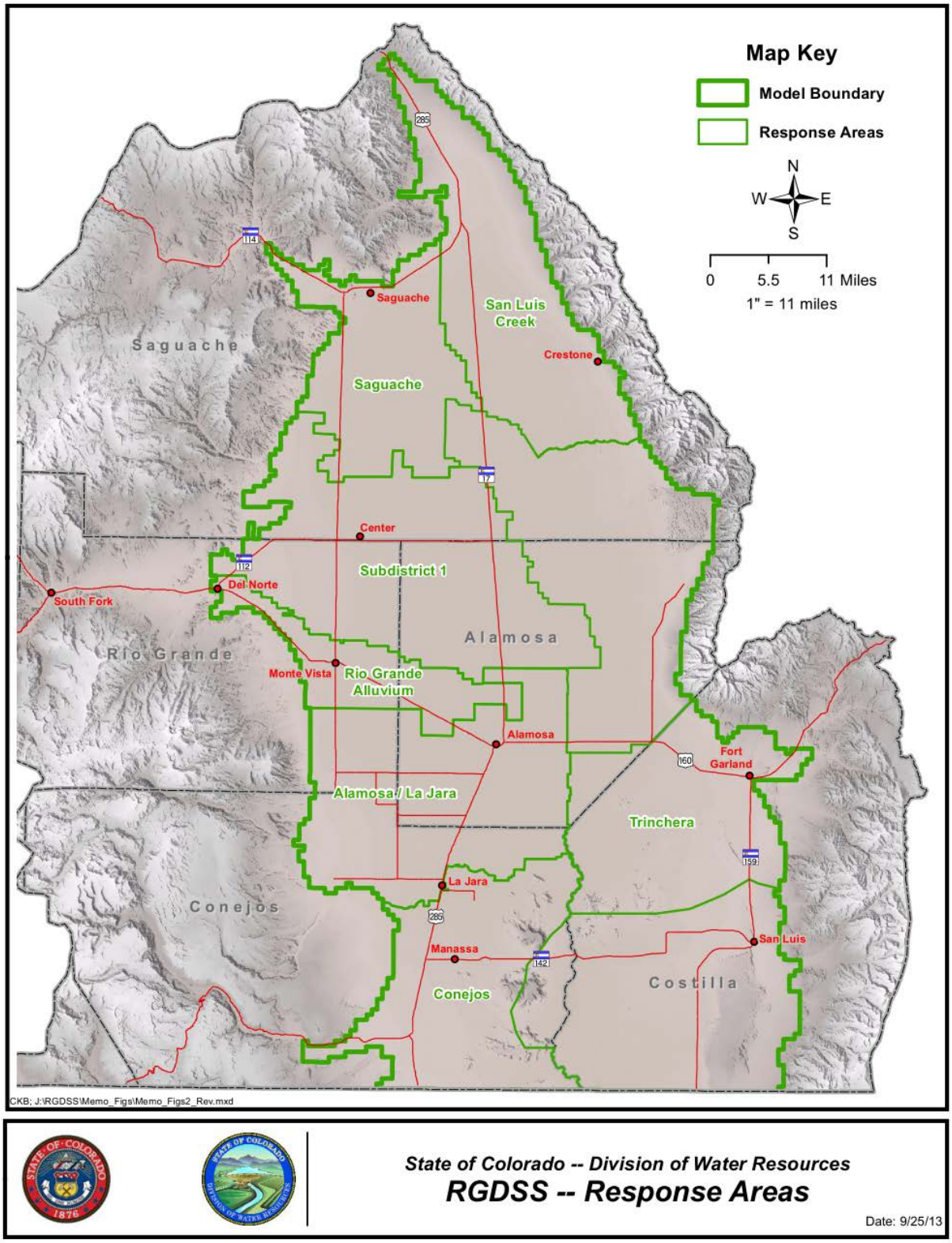
Sincerely,

Dick Wolfe

Dick Wolfe, P.E.
State Engineer, Director
Colorado Division of Water Resources

Cc: AAG Hartman
Div 3 Cotten
SLVAC

Encl: Response Area Map


Map Key
Model Boundary
Response Areas
N
W
E
S
0
5.5
11 Miles
1" = 11 miles
Saguache
San Luis Creek
Crestone
Saguache
Center
Subdistrict 1
Del Norte
South Fork
Rio Grande
Alamosa
Monte Vista
Rio Grande Alluvium
Alamosa
Fort Garland
Alamosa / La Jara
Trinchera
La Jara
Conejos
Manassa
San Luis
Costilla
Conejos
CKB; J:\RGDSS\Memo_Figs\Memo_Figs2_Rev.mxd
State of Colorado -- Division of Water Resources
RGDSS -- Response Areas
Date: 9/25/13