COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT
GRANT APPLICATION FORM

The use of excess storage capacity in Blue Mesa Reservoir to avoid or reduce the impact of a Colorado River Compact curtailment in Colorado.

Name of Water Activity/Project

Approving Basin Roundtable

$245,000	**Amount from Statewide Account**	$196,000
Total Amount of Funds Requested	**Amount from Basin Account**	Arkansas $24,500 Gunnison $24,500

Application Content

Attachments

1. Reference Information
2. Insurance Requirements (Projects Over $25,000)
3. WSRA Standard Contract (Projects Over $100,000)
4. W-9 Form (Required for All Projects)

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/approval is outlined in Attachment 1.

Once approved by the local Basin Roundtable, the applicant should submit this application, a detailed statement of work, detailed project budget, and project schedule to the CWCB staff by the application deadline.

The application deadlines are:

- Basin Account – 60 calendar days prior to the bi-monthly Board meeting
- Statewide Account – 60 calendar days prior to the September Board meeting

Board Meeting Dates	Basin Account Deadlines	Statewide Account Deadlines
July 20-21, 2010	May 21, 2010	n/a
September 21-22	July 23, 2010	July 23, 2010
November 16-17	September 17, 2010	n/a
January 2011	60 days prior	n/a
March 2011	60 days prior	n/a
May 2011	60 days prior	n/a
July 2011	60 days prior	n/a
September 2011	60 days prior	60 days prior

When completing this application, the applicant should refer to the WSRA Criteria and Guidelines available at: http://cwcb.state.co.us/IWMD.

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:

Mr. Todd Doherty
Colorado Water Conservation Board
Water Supply Planning Section
WSRA Application
1580 Logan Street, Suite 200
Denver, CO 80203
Todd.Doherty@state.co.us

If you have questions or need additional assistance, please contact Todd Doherty of the Water Supply Planning Section at 303-866-3441 x3210 or todd.doherty@state.co.us.

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

1. Applicant Name(s): Southeastern Colorado Water Conservancy District

Mailing address: 31717 United Avenue
Pueblo, CO 81001

Taxpayer ID#: 846012143 Email address: jean@secwcd.com

Phone Numbers: Business: 719-948-2400
Home:
Fax: 719-948-0036

2. Person to contact regarding this application if different from above:

Name: Jean Van Pelt

Position/Title Conservation Outreach Coordinator

3. Eligible entities that may apply for grants from the WSRA 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) – special, water and sanitation, conservancy, conservation, irrigation, or water activity enterprises.

☐ Private Incorporated – mutual ditch companies, homeowners associations, corporations.

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

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

4. Provide a brief description of your organization

The Southeastern Colorado Water Conservancy District was created under Colorado State Statutes on April 19, 1958, by the District Court of Pueblo, Colorado, for the purpose of developing and administering the Fryingpan-Arkansas Project. The District extends along the Arkansas River from Buena Vista to Lamar, and along Fountain Creek from Colorado Springs to Pueblo, Colorado. The District consists of nine counties deriving benefits from the project.

The District is the legal agency responsible for the repayment of the reimbursable costs of the project. In addition to administering the repayment responsibility, the District allocates supplemental water from the Fryingpan-Arkansas Project for use by approximately 280,660 acres of irrigated land under various private and mutual ditch companies, and for use by the many municipal and domestic water suppliers who directly serve the District's approximately 600,000 constituents. The District is governed by a fifteen member board of directors representing the nine counties within the District. Each board member is appointed by the state's district court system. Director positions may also be elected if citizens petition the court for such an election. Members serve for four-year terms and are then subject to re-appointment.

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

Contracting Entity is the Applicant.

6. 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 copy of this standard contract is included in Attachment 3. Please review this contract and check the appropriate box.

☑ 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.

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

The Southeastern Colorado Water Conservancy District does not have TABOR limitation with regard to grant money received from the State of Colorado.

Part B. - Description of the Water Activity

1. Name of the Water Activity/Project:

The use of excess storage capacity in Blue Mesa Reservoir to avoid or reduce the impact of a Colorado River Compact curtailment in Colorado.

2. What is the purpose of this grant application? (Please check all that apply.)

☐ Environmental compliance and feasibility study

☐ Technical Assistance regarding permitting, feasibility studies, and environmental compliance

☐ Studies or analysis of structural, nonstructural, consumptive, nonconsumptive water needs, projects

Study or Analysis of:

- ☐ Structural project or activity
- ☐ Nonstructural project or activity
- ☐ Consumptive project or activity
- ☐ Nonconsumptive project or activity

☑ Structural and/ or nonstructural water project or activity

3. 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.

This project provides evaluation of the use of excess capacity in Blue Mesa Reservoir, under different hydrological scenarios, to avoid or reduce the impact of a Colorado River Compact curtailment in Colorado. The use of Blue Mesa Reservoir for this purpose has been identified by several roundtables as having significant potential for responding to curtailment of Colorado River diversions in Colorado, and this project will provide important technical information and an analysis of that concept. It is prudent for the Basin Roundtables, in cooperation with the State, to examine whether excess capacity in Blue Mesa Reservoir can be part of the State's efforts to reduce risk associated with existing and future water development in Colorado.

The objectives of this project are to assess the effectiveness of using excess capacity storage in Blue Mesa reservoir to avoid or mitigate the magnitude and duration of potential Colorado River Compact curtailment in Colorado. A principle objective is to evaluate the use of Blue Mesa reservoir as a potential storage location for a Colorado water bank. The analysis may also consider and use the potential output of the Water Banking Study to be conducted by the water banking work group as input (to the extent that information is available from this work) reflecting the likely available supplies which might be deposited in a water bank. The project will contribute to better understanding of circumstances surrounding a potential curtailment of Colorado River diversions in Colorado and the effectiveness of utilizing excess storage capacity in Blue Mesa Reservoir either as a water bank depository or as part of other management options.

The tasks to be completed in this project are: (1) develop scenarios and assumptions to be incorporated into a hydrologic model to explore how the Aspinall Unit would respond to different hydrologic conditions in a compact curtailment situation (2) evaluation of existing and potential hydrologic models to identify the most appropriate model to evaluate how the Aspinall Unit could respond to different hydrologic conditions (3) simulate up to 10 scenarios to determine the response of the Aspinall Unit and the potential use of excess storage capacity in Blue Mesa Reservoir (4) evaluate the sensitivity of how the Aspinall Unit simulation model responds to different hydrologic conditions under different operational scenarios (5) evaluate management options focused on Aspinall Unit Reservoir Banking to avoid or reduce the impact of a Colorado River Compact curtailment in Colorado.

Part C. – 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]

This water activity meets the eligibility requirements outlined in Part 2 of the Water Supply Reserve Account Criteria and Guidelines.

This water activity has undergone an evaluation and approval by both the Gunnison and Arkansas Basin Roundtables and received approval from both Roundtables.

Attached are letters of support for the proposed water activity from the Gunnison and Arkansas Basin Roundtable Chairs. This water activity will assist both basins in meeting their water supply needs by identifying if excess storage capacity in Blue Mesa Reservoir could be used to avoid or reduce the impact of a Colorado River Compact curtailment in Colorado thus reducing their ability to meet consumptive and/or non consumptive water needs.

[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.

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 Arkansas and Gunnison Basin Roundtables are in agreement and have approved the proposed water activity. Letters from the Arkansas and Gunnison Basin Roundtable Chairs are attached.

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.

Letters from the Arkansas and Gunnison Basin Roundtable Chairs are attached.

[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.

d) Matching Requirement: For requests from the Statewide Fund, the applicants is required to demonstrate a 20 percent (or greater) match of the request from the Statewide Account. 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 Part D of this application)

The matching funds for the proposed water activity are being provided by the Arkansas and Gunnison Basin Roundtable Basin Accounts (10% or $24,500 from the Arkansas Basin Account and 10% or $24,500 from the Gunnison Basin Account).

2. For Applications that include a request for funds from the Statewide Account, describe how the water activity meets the **Evaluation Criteria.** (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines.)

The proposed water activity meets the Tier 1 criteria. The proposed project will promotes collaboration between the Arkansas and Gunnison Basins as well as the State of Colorado. In addition, the project will coordinate and collaborate with the Water Banking Work Group. The project will assess the use of excess storage capacity in Blue Mesa Reservoir to avoid or reduce the impact of a Colorado River Compact curtailment in Colorado. A Colorado River Compact curtailment has a direct effect on meeting the water needs in the Gunnison and Arkansas basins.

The proposed water activity will be co-managed by the Southeastern Colorado Water Conservancy District and the Upper Gunnison River Water Conservancy District. These entities have identified the need to cooperate to maintain and meet their current and future water needs.

The results of this study will have a direct effect on meeting Colorado's future water needs in that if there is a Colorado River Compact curtailment in Colorado it will impact the current and future needs across the state. In particular, this water activity addresses one of the SWSI 2010 recommendation of developing risk management strategies so that Colorado can fully use its compact and decree entitlements. This water activity focuses on evaluating management options such as using excess storage to reduce the effect of a Colorado River Compact curtailment in Colorado.

Part D. – 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 the name/location of water bodies affected by the water activity.

The water activity will evaluate the current storage capacity of Blue Mesa Reservoir and historically available water to avoid or reduce a Colorado River Compact curtailment in Colorado. In addition, the amount of water available for a proposed water banking of pre-1922 and post-1922 water rights (as determined by the Water Banking Study) will be evaluated as one of the management options.

2. Please provide a brief narrative of any related or relevant previous studies.

This water activity will be collaborating and building upon the findings of the Water Banking Study and the CWCB staffs experience through their work on the Compact Compliance Study.

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.

Please provide a detailed statement of work using the following template. Additional sections or modifications may be included as necessary. Please define all acronyms. If a grant is awarded an independent statement of work document will be required with correct page numbers.

Statement of Work

WATER ACTIVITY NAME -

GRANT RECIPIENT –

FUNDING SOURCE -

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)

OBJECTIVES
List the objectives of the project

TASKS
Provide a detailed description of each task using the following format

TASK 1 – [Name]

Description of Task

Method/Procedure

Deliverable

TASK 2 – [Name]

Description of Task

Method/Procedure

Deliverable

REPEAT FOR TASK 3, TASK 4, TAKE 5, ETC.

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.

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.

Total Costs				
	Labor	Other Direct Costs	Matching Funds (If Applicable)	Total Project Costs
Task 1 - (Specify name of task)				
Task 2 -				
In-Kind Contributions				
Total Costs:				

Example Titles

Example Project Personnel: Hourly Rate:	Project Manager	Project Engineer	Geologist	Scientist	Graphics/ Designer	Clerical		Total Costs
Task 1 -								
Task 2 -								
Total Hours:								
Cost:								

Other Direct Costs						
Item:	Copies	Materials	Equipment/ Supplies	Mileage		Total
Units:	No.			Miles		
Unit Cost:						
Task 1 -						
Task 2 -						
Total Units:						
Total Cost:						

In-Kind Contributions (If Applicable)				
Project Personnel: Hourly Rate:				Total
Task 1 -				
Task 2 -				
Total Hours:				
Total Cost:				

SCHEDULE

Provide a project schedule including key milestones for each task and the completion dates or time period from the Notice to Proceed (NTP). This dating method allows flexibility in the event of potential delays from the procurement process. Sample schedules are provided below. Please note that these schedules are examples and will need to be adapted to fit each individual application.

Example 1

Task	Start Date	Finish Date
1	Upon NTP	NTP + 90 days
2	Upon NTP	NTP + 180 days
3	Upon NTP	NTP + 180 days
4	Upon NTP	12/31/11
5	NTP + 60 days	12/31/11
6	NTP + 60 days	12/31/11
7	NTP + 60 days	12/31/11

NTP = Notice to Proceed

Example 2

Task	First 6 Months						Second 6 Months					
	1/10 – 3/10			4/10 – 6/10			7/10 – 9/10			10/10 - 12/10		
A – Economic Analysis												
B – Storage Analysis												
C – TA for Ditch Cos												
D – Injury Analysis												
Final Reports												

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:

Print Applicant's Name:

Project Title: The use of excess storage capacity in Blue Mesa Reservoir to avoid or reduce the impact of a Colorado River Compact curtailment in Colorado.

Return this application to:

Mr. Todd Doherty
Intrastate Water Management and Development Section
COLORADO WATER CONSERVATION BOARD
1580 Logan Street, Suite 200
Denver, CO 80203

To submit applications by Email, send to: todd.doherty@state.co.us

Attachment 1
Reference Information

The following information is available via the internet. The reference information provides additional detail and background information.

Colorado Water Conservation Board (http://cwcb.state.co.us/)

Loan and Grant policies and information are available at – http://cwcb.state.co.us/Finance/

Interbasin Compact Committee and Basin Roundtables (http://ibcc.state.co.us/)

Interbasin Compact Committee By-laws and Charter (under Helpful Links section) –

http://ibcc.state.co.us/Basins/IBCC/

Legislation

House Bill 05-1177 - Also known as the Water for the 21st Century Act –

http://cwcbweblink.state.co.us/DocView.aspx?id=105662&searchhandle=28318

House Bill 06-1400 – Adopted the Interbasin Compact Committee Charter –

http://cwcbweblink.state.co.us/DocView.aspx?id=21291&searchhandle=12911

Senate Bill 06-179 – Created the Water Supply Reserve Account –

http://cwcbweblink.state.co.us/DocView.aspx?id=21379&searchhandle=12911

Statewide Water Supply Initiative

General Information – http://cwcb.state.co.us/IWMD/

Phase 1 Report – http://cwcb.state.co.us/IWMD/SWSITechnicalResources/SWSIPhaseIReport/

Attachment 2
Insurance Requirements

NOTE: The following insurance requirements taken from the standard contract apply to WSRA projects that exceed $25,000 in accordance with the policies of the State Controller's Office. Proof of insurance as stated below is necessary prior to the execution of a contract.

13. INSURANCE

Grantee and its Sub-grantees shall obtain and maintain insurance as specified in this section at all times during the term of this Grant: All policies evidencing the insurance coverage required hereunder shall be issued by insurance companies satisfactory to Grantee and the State.

A. Grantee

i. Public Entities

If Grantee is a "public entity" within the meaning of the Colorado Governmental Immunity Act, CRS §24-10-101, et seq., as amended (the "GIA"), then Grantee shall maintain at all times during the term of this Grant such liability insurance, by commercial policy or self-insurance, as is necessary to meet its liabilities under the GIA. Grantee shall show proof of such insurance satisfactory to the State, if requested by the State. Grantee shall require each Grant with Sub-grantees that are public entities, providing Goods or Services hereunder, to include the insurance requirements necessary to meet Sub-grantee's liabilities under the GIA.

ii. Non-Public Entities

If Grantee is not a "public entity" within the meaning of the GIA, Grantee shall obtain and maintain during the term of this Grant insurance coverage and policies meeting the same requirements set forth in **§13(B)** with respect to sub-Grantees that are not "public entities".

B. Sub-Grantees

Grantee shall require each Grant with Sub-grantees, other than those that are public entities, providing Goods or Services in connection with this Grant, to include insurance requirements substantially similar to the following:

i. Worker's Compensation

Worker's Compensation Insurance as required by State statute, and Employer's Liability Insurance covering all of Grantee and Sub-grantee employees acting within the course and scope of their employment.

ii. General Liability

Commercial General Liability Insurance written on ISO occurrence form CG 00 01 10/93 or equivalent, covering premises operations, fire damage, independent Grantees, products and completed operations, blanket Grantual liability, personal injury, and advertising liability with minimum limits as follows: **(a)**$1,000,000 each occurrence; **(b)** $1,000,000 general aggregate; **(c)** $1,000,000 products and completed operations aggregate; and **(d)** $50,000 any one fire. If any aggregate limit is reduced below $1,000,000 because of claims made or paid, Sub-grantee shall immediately obtain additional insurance to restore the full aggregate limit and furnish to Grantee a certificate or other document satisfactory to Grantee showing compliance with this provision.

iii. Automobile Liability

Automobile Liability Insurance covering any auto (including owned, hired and non-owned autos) with a minimum limit of $1,000,000 each accident combined single limit.

iv. Additional Insured

Grantee and the State shall be named as additional insured on the Commercial General Liability and Automobile Liability Insurance policies (leases and construction Grants require additional insured coverage for completed operations on endorsements CG 2010 11/85, CG 2037, or equivalent).

v. Primacy of Coverage

Coverage required of Grantee and Sub-grantees shall be primary over any insurance or self-insurance program carried by Grantee or the State.

vi. Cancellation

The above insurance policies shall include provisions preventing cancellation or non-renewal without at least 45 days prior notice to the Grantee and the State by certified mail.

vii. Subrogation Waiver

All insurance policies in any way related to this Grant and secured and maintained by Grantee or its Sub-grantees as required herein shall include clauses stating that each carrier shall waive all rights of recovery, under subrogation or otherwise, against Grantee or the State, its agencies, institutions, organizations, officers, agents, employees, and volunteers.

C. Certificates

Grantee and all Sub-grantees shall provide certificates showing insurance coverage required hereunder to the State within seven business days of the Effective Date of this Grant. No later than 15 days prior to the expiration date of any such coverage, Grantee and each Sub-grantee shall deliver to the State or Grantee certificates of insurance evidencing renewals thereof. In addition, upon request by the State at any other time during the term of this Grant or any sub-grant, Grantee and each Sub-grantee shall, within 10 days of such request, supply to the State evidence satisfactory to the State of compliance with the provisions of this **§13**.

Attachment 3
Water Supply Reserve Account Standard Contract

NOTE: The following contract is required for WSRA projects that exceed $100,000. (Projects under this amount will normally be funded through a purchase order process.) Applicants are encouraged to review the standard contract to understand the terms and conditions required by the State in the event a WSRA grant is awarded. Significant changes to the standard contract require approval of the State Controller's Office and often prolong the contracting process.

It should also be noted that grant funds to be used for the purchase of real property (e.g. water rights, land, conservation easements, etc.) will require additional review and approval. In such cases applicants should expect the grant contracting process to take approximately 3 to 6 months from the date of CWCB approval.

Attachment 4
W-9 Form

NOTE: A completed W-9 form is required for all WSRA projects prior execution of a contract or purchase order. Please submit this form with the completed application.

Statement of Work

WATER ACTIVITY NAME – The use of excess storage capacity in Blue Mesa Reservoir to avoid or reduce the impact of a Colorado River Compact curtailment in Colorado.

GRANT RECIPIENT –Southeastern Colorado Water Conservancy District (Fiscal) & Co-managed by the Upper Gunnison River Water Conservancy District

FUNDING SOURCE - Statewide Account (80%), Arkansas Basin Account (10%), Gunnison Basin Account (10%).

INTRODUCTION AND BACKGROUND

This project provides an evaluation of the potential use of excess capacity in Blue Mesa Reservoir, under different hydrological scenarios, to avoid, reduce or forestall a Colorado River Compact curtailment in Colorado. The use of Blue Mesa Reservoir for this purpose has been identified by several roundtables as having significant potential for reducing the threat of curtailment of Colorado River diversions in Colorado, and this project will provide important technical information and an analysis of that concept. It is prudent for the Basin Roundtables, in cooperation with the State, to examine whether excess capacity in Blue Mesa Reservoir can be part of the State water planning efforts to reduce risk associated with existing water uses in Colorado.

One risk management option currently being explored by the Colorado Water Conservation Board (CWCB) and other interested stakeholders is water banking. A Water Bank Group has been formed and that group is evaluating how a water bank might work in Colorado. The Water Bank Group consists of representatives of the Colorado River Water Conservation District, the Southwestern Water Conservation District, the Nature Conservancy, the Front Range Water Council and the CWCB.

Water banking concepts raise interesting and very difficult legal and political issues in the Colorado River Basin. While Lower Basin water banking arrangements exist for storing unused allocations in groundwater basins and in Lake Mead, no explicit banking arrangements currently exist in the Upper Basin. Such banking arrangements could be beneficial to the State of Colorado, but there are significant legal, policy, and political issues that would have to be overcome. Nevertheless, it is important for the State of Colorado to develop the best information about how the Aspinall Unit could be used to reduce curtailment risk in order to make informed decisions about whether water banking concepts ought to be considered as part of an overall Compact Curtailment mitigation strategy.

This project will support the work of the Water Bank Group and the work of the CWCB related to the Compact Compliance Study and will be coordinated with the Basin Study currently being performed by Reclamation. Because of the potential for overlap among these projects, this work will be performed in close consultation with the CWCB, Reclamation staff and Blue Mesa Subcommittee (Subcommittee). The Subcommittee is a joint subcommittee with representatives

from the Arkansas Basin Roundtable and the Gunnison Basin Roundtable. The project will be coordinated with the work performed for the three studies listed above, as appropriate.

In order to appropriately examine the Colorado River system, this study must make certain assumptions about a number of factors, including demand growth, hydrology, Upper Basin states' approach to a potential curtailment, Lower Basin states' response to shortages and related curtailment and the ultimate Federal response. The assumptions used for analyzing the effectiveness of Blue Mesa Reservoir excess storage capacity will also be developed in close consultation with the CWCB Staff, the Subcommittee and Reclamation, as appropriate.

A significant asset of the Upper Colorado River Basin is the storage capacity of the major reservoirs of the Colorado River Storage Project (CRSP), including Blue Mesa Reservoir of the Wayne N. Aspinall Unit. The three reservoirs of the Aspinall Unit were constructed between 1963 and 1977. The storage reservoir of the Aspinall Unit is Blue Mesa Reservoir, the largest reservoir that exists completely within the State of Colorado. The total storage capacities of the Aspinall Unit reservoirs are shown in the table below.

Total Storage Capacities

Reservoir	Total Storage Capacity
Curecanti (now named Aspinall)	
• Blue Mesa	940,000 AF
• Morrow Point	117,200 AF
• Crystal	25,200 AF

OBJECTIVES

The objectives of this project are to assess the effectiveness of using excess capacity storage in Blue Mesa Reservoir to avoid, forestall and/or mitigate the magnitude and duration of potential Colorado River Compact curtailment in Colorado. A principle objective is to evaluate the use of Blue Mesa Reservoir as a potential storage location for a Colorado water bank. The analysis may also consider and use the potential output of the Water Banking Study to be conducted by the Water Bank Group as input (to the extent that information is available from this work) reflecting the likely available supplies (e.g., pre-1922 consumptive use credits) which might be deposited in a water bank. The project will contribute to better understanding of circumstances surrounding a potential curtailment of Colorado River diversions in Colorado and the effectiveness of utilizing excess storage capacity in Blue Mesa Reservoir as a water bank. The project will provide a draft report that will include conclusions and recommendations based upon the findings.

The draft report will include potential water banking operations and guidelines in Blue Mesa Reservoir. The intent of this study is to create a feasible operational framework for a water bank that could be the basis for an excess storage capacity contract at Blue Mesa Reservoir.

TASKS

It is anticipated that this work will be conducted in close coordination with the CWCB Staff, the Water Bank Group, and the sponsoring Roundtables. The consultant will coordinate with the Subcommittee. Following are the tasks that would be completed under this proposal:

TASK 1 – Scenario Development – (Not to exceed $20,000)

Description of Task

The purpose of this task is to develop the assumptions and scenarios that would be incorporated into a hydrologic model to explore how the Aspinall Unit could respond to different hydrologic conditions in a compact curtailment situation. These assumptions will be based on historic flow and reservoir content data. The task will use specific assumptions regarding curtailment relative to the quantity, duration and frequency as advised and provided by the Water Bank Group, the CWCB Staff and invited Reclamation technical staff.

Method/Procedure

The consultant will review and identify several scenarios using historical hydrologic conditions representing periods with the wettest, driest (e.g., 2000-2010 drought), average, or other combinations and couple them with beginning Aspinall Unit reservoir contents derived from the record (e.g., full system, 50 percent capacity, lowest historic capacity, etc.). Paleo-hydrology records will also be investigated to determine applicability for this study. These scenarios will be developed in close consultation with CWCB and USBR staff and the Subcommittee.

Deliverable

Deliverables for the task will include:

- A Technical Memorandum summarizing the assumptions used and the scenarios developed to be used to evaluate water banking management options in subsequent tasks.

TASK 2 – Model Tool Evaluation – (Not to exceed $20,000)

Description of Task

The purpose of this task is to evaluate existing and potential hydrologic models in order to identify the most appropriate model to evaluate how the Aspinall Unit could respond to different hydrologic conditions in advance of, and in response to, compact curtailment situation. The task will include coordination with the State (StateMod) and Bureau of Reclamation (RiverWare) modelers to review the strengths and limitations of each model, in consultation with the Subcommittee

Method/Procedure

The consultant will review available and applicable models to identify the preferred modeling tool to evaluate how the Aspinall Unit could be used to as part of water banking management option. The consultant will work with the modelers from the State and Bureau of Reclamation to identify the strengths and limitations of existing hydrologic models, as well as to evaluate the use of new modeling tools such as STELLA or Microsoft Excel in consultation with the Subcommittee.

STELLA is an intuitive object-oriented program allowing models to be built as simple or complex as necessary. STELLA can be configured to use a dashboard interface to change model

parameters quickly allowing the ability to perform "what if" scenarios in real-time. Figures and tables of model input and output are generated as the model runs.

An additional option is to develop a model using Microsoft Excel. The familiar Microsoft Excel environment enables developers and users alike to easily add output displays and reports, adjust model parameters and relationships, and readily use output in other spreadsheet programs. This could make the optimization model a very flexible and easy-to-use tool.

Deliverable

Deliverables for the task will include:

- A Technical Memorandum summarizing the available hydrologic models with a recommendation of the model to be used to evaluate management options in subsequent tasks. Selection of the model will be made by the Subcommittee.

TASK 3 – Hydrologic Simulations — (Not to exceed $90,000)

Description of Task

The purpose of this task is to evaluate each scenario (up to ten) to determine the response of the Aspinall Unit, and the potential for use of excess capacity in Blue Mesa Reservoir, to offset or mitigate the curtailment amounts and durations scenarios developed in Task 1. This will be done using the modeling tool selected in Task 2. In this task the scenarios will use existing demands and allow for outreach, coordination and refinement.

The outreach, coordination and refinement component listed above shall include the following requirement. An initial scenario evaluation shall be presented for review by representatives from the CWCB and roundtables. The review will assess the appropriateness of the modeling methods, inputs, assumptions and anticipated end product. Suggested refinements will be a product of this review. The review shall be completed within 15 business days of receipt of the scenario and modeling tool evaluation. Approval of this initial scenario evaluation by the CWCB and the Subcommittee must take place prior to continuation of the project.

Method/Procedure

The consultant will use or develop a high-level operational model of the Aspinall Unit reservoirs using the model selected in Task 2. The selected model will be used to simulate the scenarios identified in Task 1. The model will be developed using operational parameters and constraints based on Aspinall Unit new operations (e.g., EIS guidelines, BCNP decree).

Risk Assessment Using the Optimization Model: The consultant will work with the Arkansas and Gunnison Basin Roundtables and the CWCB staff to prioritize which aspects of system performance should be monitored, evaluated and assessed in a risk analysis and optimization framework.

Risk Indicators: Identifying risk indicators, using companion models/knowledge will be part of the optimization model output. The user will be notified when any of a number of risk indicators, such as a minimum or maximum level in a surface water reservoir (i.e., Blue Mesa) is reached. This will help define important threshold values to determine how water banking strategies might be implemented.

Stochastic Input: Develop an algorithm (or set of user instructions) to repeat the optimization process multiple times with systematically or randomly changing input. The benefit of this approach is that output is viewed as a distribution of objective values based on broad input ranges. This will help define frequency of when important threshold are reached to determine how water banking strategies might be best implemented. The use of paleo-conditioned approach to stochastic input (Prairie et al.; USBR) shall be considered.

Sequential Optimization – Simulation: The model could be programmed so that it optimizes one or two years, then simulates the following one or two years under various hydrologic conditions to evaluate potential future impacts of the optimized schedule. This approach addresses the difficulty of accurately predicting climate two or three years into the future. This will help define auto-correlation characteristics. Similar work has been initiated by the USBR as part of the Aspinall EIS and shall be considered.

Translate Input Probability to Output Probability: Correlating the probability of hydrologic input with probability of various types of output. A model that relates potential hydrologic water availability with outputs such as unmet demands, shortages and/or total consumptive use credits to be needed for an optimal-sized water bank is a desired outcome of this task.

Deliverable

Deliverables for the task will include:

- The consultant will prepare modeling output for each scenario and present results to the Arkansas and Gunnison Basin Roundtables, and the CWCB staff, and other interested parties as part of the outreach and coordination process; and,
- Model output and results will be summarized in a draft report format delivered to the Subcommittee and CWCB staff. This will include tabular results that identify important threshold values, event frequencies (recurrence intervals) and optimal water bank size.

TASK 4 – Scenario Sensitivity Analysis – (Not to exceed $25,000)

Description of Task

The purpose of this task is to use the scenarios developed in Task 1 and the modeling in Task 3 to evaluate the sensitivity of how the Aspinall Unit simulation model responds to different hydrologic conditions and under different operational scenarios.

Method/Procedure

The procedure for evaluating the sensitivity of different demands on Colorado River supplies will be similar to the process used in Task 3. Specific model inputs will be modified to assess and quantify how the model behaves under different hydrological inputs (water availability, consumptive and non-consumptive demands under different Colorado River supply scenarios, and under different associated Aspinall Unit operations).

The option to modify model inputs to evaluate the effects of different demands is at the discretion of the Arkansas and Gunnison Basin Roundtables.

Deliverable

Deliverables for the task will include:

- The consultant will prepare modeling output for each scenario and a report of model sensitivity to significant input parameters and will present these results to the Arkansas and Gunnison Basin Roundtables, the CWCB staff, and other interested parties as part of the outreach, coordination and collaboration process

TASK 5 – Evaluate Management Options Focused on Aspinall Unit Reservoir Banking – (Not to exceed $65,000)

Description of Task

The purpose of this task is to define potential water banking management options for each scenario with careful attention to avoiding injury to existing water rights and authorized purposes of the Aspinall Unit. Water banking management options will include the different types of water bank (top water bank, bottom water bank), contract options with Reclamation for vacant space at Blue Mesa, operational releases from the water bank with differing timing and volumes to meet downstream obligations while maximizing benefits to other Blue Mesa uses, and compact curtailment mitigation scenarios (i.e., quantity, frequency and duration) as provided in Task 1.

In this task the selection and evaluation of management options will allow for outreach, coordination and refinement. This outreach, coordination and refinement component shall include the following requirement. Management options shall be presented for review by representatives from the CWCB and the Subcommittee. The review will assess the appropriateness of the modeling methods, inputs, assumptions and anticipated end product for this task. Suggested refinements will be a product of this review. The review shall be completed within 15 business days of receipt of the management option evaluation plan. Approval of this task evaluation by the CWCB and the Subcommittee must take place prior to continuation of the project.

Management options focused on Blue Mesa Reservoir banking will be evaluated using the model developed in Task 3 to identify viable management alternatives that might limit the magnitude and duration of a potential compact curtailment of Colorado River diversions in Colorado. The amount of water available for proposed water banking of pre-1922 and post-1922 water rights (as determined by the water bank study being conducted by the Water Bank Group and/or from the CWCB Staff through their work on the Compact Compliance Study) will be integrated into the management options.

Method/Procedure

The model developed and utilized will include a “banking” function to implement and evaluate banking concepts. The model inputs and parameters will be modified to simulate a water bank in Blue Mesa Reservoir. The consultant will coordinate with the Water Banking Study to determine complimentary but not overlapping “banking” concepts. The model with “banking” function will be used to simulate the Aspinall Unit operations to determine the reductions that might be possible to the magnitude and duration of compact curtailments under each of the selected scenarios.

Deliverable

Deliverables for the task will include:

- The consultant will prepare modeling output for each scenario and present results to the Arkansas and Gunnison Basin Roundtables, the CWCB staff, and other interested parties as part of the outreach process;
- Model output and results will be summarized in a draft report format delivered to the Arkansas and Gunnison Basin Roundtables and CWCB staff;
- Model output and results will be summarized and analyzed in a draft report format delivered to the Arkansas and Gunnison Basin Roundtables and CWCB staff. This report will include a set of proposed water bank operations. The desired outcome of this task is a defensible basis (including a description of parameters) for a proposed contract request to Reclamation for excess storage capacity to implement a water bank;
- The developed simulation model, including the applicable code, logic and data (including both relevant input and output data) will be archived and made available via appropriate mass storage products (e.g., CD, DVD and/or portable hard drive).

TASK 6 – Reporting – (not to exceed $25,000)

Description of Task

The purpose of this task is to develop a report describing the modeling and results performed in Tasks 3 though 5. The report will summarize study findings and provide conclusions and recommendations.

Method/Procedure

The consultant will develop draft and final reports. The draft report will be provided to the Arkansas and Gunnison Basin Roundtables and CWCB staff to review. Upon formal review and comment, input received will be incorporated in the final report.

Deliverable

Deliverables for the task will include:

- A draft and final report summarizing the management options using Blue Mesa Reservoir to avoid or mitigate a curtailment of Colorado River diversions in Colorado which will include: description of the model, results, conclusions and recommendations
- Meeting summaries documenting action items from coordination meetings
- Presentation for use at Basin Roundtable Meetings

REPORTING AND FINAL DELIVERABLE

Reporting: The consultant will coordinate with the Subcommittee via monthly progress reports. In addition, the consultant shall provide the Arkansas and Gunnison Basin Roundtables and the CWCB staff a summary progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion status of the tasks identified in the statement of work including a description of any major issues that have occurred and any potential corrective actions taken to address such issues.

Final Deliverable: At completion of the project, the consultant shall provide the Arkansas and Gunnison Basin Roundtables and the CWCB staff a final draft report that summarizes the project

and documents how the project was completed. This report may contain photographs, figures, charts, tables and summaries of meetings and engineering reports/designs. In addition, the archived model, data and results will be provided.

SCHEDULE AND BUDGET

Although there is no formal performance schedule by task included, it is anticipated that the project will not exceed two years in length. The project timeline and budget will be actively managed by the CWCB, roundtable participants and fiscal agent. Progress will be closely tracked via task memos, progress reports and submitted comments.

Total Cost: $245,000
Statewide Account: $196,000
Arkansas Basin Account $24,500
Gunnison Basin Account: $24,500

Aspinall Study
Updated: Jan 14, 2011

Budget includes Statewide and Basin Account Funds

Total Costs

Tasks	Labor	Other Direct Costs	Total Project Costs
Task 1 - Scenario Development	$ 19,340	$ 660	$ 20,000
Task 2 - Model Tool Evaluation	$ 19,930	$ 70	$ 20,000
Task 3 - Hydrologic Simulations	$ 89,900	$ 100	$ 90,000
Task 4 - Scenario Sensitivity Analysis	$ 23,845	$ 1,155	$ 25,000
Task 5 - Evaluate Management Options	$ 63,300	$ 1,700	$ 65,000
Task 6 - Reporting	$ 22,600	$ 2,400	$ 25,000
Total Costs	$ 238,915	$ 6,085	$ 245,000

Labor Costs

Example Project Personnel	Project Manager	Project Engineer	Scientist	Graphics/Designer	Clerical		Total Costs
Hourly Rate:	$195	$150	$100	$80	$60		
Task 1 - Scenario Development	20	60	40	23	10		$ 19,340
Task 2 - Model Tool Evaluation	14	80	40		20		$ 19,930
Task 3 - Hydrologic Simulations	140	250	195	40	40		$ 89,900
Task 4 - Scenario Sensitivity Analysis	35	40	80	10	37		$ 23,845
Task 5 - Evaluate Management Options	100	200	90	30	40		$ 63,300
Task 6 - Reporting	40	40	20	40	60		$ 22,600
Total Hours:	349	670	465	143	207		1834
Total Costs:	$68,055	$100,500	$46,500	$11,440	$12,420		$ 238,915

Other Direct Costs

Item	Copies (No.)	Materials	Equipment/ Supplies	Mileage (Miles)		Total
Unit Cost	$0.50/page	$	$	$0.51/mile		
Task 1 - Scenario Development	96	$ -	$ -	1200		$ 660
Task 2 - Model Tool Evaluation	140	$ -	$ -	0		$ 70
Task 3 - Hydrologic Simulations	200	$ -	$ -	0		$ 100
Task 4 - Scenario Sensitivity Analysis	270	$ -	$ -	2000		$ 1,155
Task 5 - Evaluate Management Options	340	$ -	$ -	3000		$ 1,700
Task 6 - Reporting	720	$ -	$ -	4000		$ 2,400
Total Units	1766	$ -	$ -	10200		
Total Cost	$ 883	$ -	$ -	$ 5,202		$ 6,085

Aspinall Study
Updated: Jan 14, 2011

Schedule

Task	Task Description	Start Date	End Date
Task 1	Scenario Development	Upon NTP	NTP + 90 days
Task 2	Model Tool Evaluation	NTP + 60 days	NTP + 150 days
Task 3	Hydrologic Simulations	NTP + 150 days	NTP + 240 days
Task 4	Scenario Sensitivity Analysis	NTP + 240 days	NTP + 300 days
Task 5	Evaluate Management Options	NTP + 300 days	NTP + 410 days
Task 6	Reporting	Upon NTP	NTP + 410 days

NTP = Notice to Proceed

The Gunnison Basin Roundtable

January 14, 2011

Todd Doherty
Water Supply Planning Section
Colorado Water Conservation Board
1580 Logan Street, Suite 600
Denver, CO 80203

Dear Mr. Doherty,

The Gunnison Basin Roundtable has reviewed and is in support of the Water Supply reserve Account Grant Application from the Southeastern Colorado Water Conservancy District and the Upper Gunnison River Water Conservancy District. This project is important to the basins and Colorado since it will evaluate the use of excess storage capacity in Blue Mesa Reservoir to avoid or reduce the impact of a Colorado River Compact curtailment in Colorado.

The application and supporting materials for this project will be provided directly to you by Southeastern Colorado Water Conservancy District. If you require additional information, please contact me.

Sincerely,

Michelle Pierce
Gunnison Basin Roundtable Chair