

Water Supply Reserve Account – Grant and Loan Program
Water Activity Summary Sheet
September 11-12, 2014
Agenda Item 13(b)

Applicant & Program Sponsor: Southeastern Colorado Water Conservancy District

Water Activity Name: Arkansas Basin Implementation Plan – Modeling & Shortage Analysis

Water Activity Purpose: All inclusive

County: n/a

Drainage Basin: Arkansas

Water Source: Arkansas River & tributaries

Total Amount Requested: \$100,000

Source of Funds: \$70,000 Arkansas Basin Account; and \$30,000 Statewide Account

Matching Funds: n/a

Staff Recommendation:
Staff recommends approval of up to \$70,000 from the Arkansas Basin Account; and \$70,000 from the Statewide Account to help fund the project titled: Arkansas Basin Implementation Plan - Modeling & Shortage Analysis.

Water Activity Summary: WSRA funds will be expended to complete the Arkansas Basin Implementation Plan – Modeling & Shortage Analysis that conforms to the Basin Implementation Plan Guidance Document, with the Southeastern Colorado Water Conservancy District acting as the applicant and program sponsor. The Draft Arkansas Roundtable Basin Implementation Plan was delivered to the Colorado Water Conservation Board on the July 31, 2014 deadline. At the time of delivery, the Plan acknowledged that it was a draft only. Additional time and resources are required to verify and enhance the hydrologic model through a technical subcommittee. This model will be used to simulate future demand scenarios and evaluate shortages under dry, average and wet hydrologic conditions within the Arkansas River Basin. The model will provide the Basin with a planning tool that can be used to identify regional shortages/conflicts.

Discussion:

No additional discussion is needed.

Issues/Additional Needs:

No issues or additional needs have been identified.

Threshold and Evaluation Criteria:

The application meets all four Threshold Criteria

Tier 1-3 Evaluation Criteria:

n/a

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

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

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

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



Arkansas Basin Roundtable

PLANNING OUR
WATER FUTURE

Colorado Water Conservation Board
Attn: Mr. Craig Godbout
Program Manager, Water Supply Planning Section
1580 Logan Street, Suite 200
Denver CO 80203

August 15, 2014

Re: WSRA Grant Recommendation-Arkansas Basin Hydrologic Modeling and Shortage Analysis

Dear Mr. Godbout,

At its August 13, 2014 Arkansas Basin Roundtable meeting, the Roundtable supported the \$100,000 WSRA grant request from the Southeastern Colorado Water Conservancy District for the Arkansas Basin Hydrologic Modeling and Shortage Analysis. The grant requests \$70,000 from the Basin Account and \$30,000 from the Statewide Account.

The purpose of this model is to simulate current and future demand scenarios and evaluate shortages under dry, average and wet hydrologies within the Arkansas River Basin therefore increasing the quality of input by the Arkansas Basin Roundtable to the Colorado Water Plan. The outcomes from these simulations will assist the Arkansas Basin in identifying current and potential shortages (gaps) and proposing projects and methods to meet the current and future needs of the Arkansas Basin (C.R.S. 37-75-101 et seq.)

One of the goals of hydrology modeling is to gain greater understanding of the interaction between agriculture, open space and environment and recreation to better sustain agriculture and meet nonconsumptive goals. Further, it is intended to understand management of water resources in the Arkansas River basin to meet identified needs with the constraints of the Kansas v. Colorado lawsuit and the Arkansas River Compact. In addition, it is intended to better understand the effects on the Arkansas River basin and those watersheds that are impacted by imports to the Basin and exports from the Basin.

If you have any questions regarding the Roundtable support, please don't hesitate to call me.

Warm regards,

E.L. Konarski, Chr.
Arkansas Basin Roundtable.



COLORADO WATER CONSERVATION BOARD



WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

Today's Date: August 11, 2014

Arkansas Basin Hydrologic Modeling and Shortage Analysis

Name of Water Activity/Project

Southeastern Colorado Water Conservancy District

Name of Applicant

Arkansas Basin
Roundtable

Amount from Statewide Account:

30,000

Amount from Basin Account(s):

70,000

Total WSRA Funds Requested:

100,000

Approving Basin Roundtable(s)

(If multiple basins specify amounts in parentheses.)

FEIN: 846012143

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Required Exhibits

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

Appendices – Reference Material

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

Water Supply Reserve Account – Application Form

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Instructions

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

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

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

When completing this application, the applicant should refer to the WSRA Criteria and Guidelines available at: <http://cwcb.state.co.us/LoansGrants/water-supply-reserve-account-grants/Documents/WSRACriteriaGuidelines.pdf>

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.

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Part I. - 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		
	FEIN #:	846012143		
	Primary Contact:	Jean Van Pelt	Position/Title:	Conservation
	Email:	jean@secwcd.com		
	Phone Numbers:	Cell:	Office:	719-948-2400
	Alternate Contact:	Jim Broderick	Position/Title:	Exec. Director
	Email:	jwb@secwcd.com		
	Phone Numbers:	Cell:	Office:	719-948-2400

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

- ☐ Public (Government) – municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities and the local entity should be the grant recipient. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
- ☒ Public (Districts) – authorities, Title 32/special districts, (conservancy, conservation, and irrigation districts), and water activity enterprises.
- ☐ Private Incorporated – mutual ditch companies, homeowners associations, corporations.
- ☐ Private individuals, partnerships, and sole proprietors are eligible for funding from the Basin Accounts but not for funding from the Statewide Account.
- ☐ Non-governmental organizations – broadly defined as any organization that is not part of the government.

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3. Provide a brief description of your organization

The Southeastern Colorado Water Conservancy District was created under the Colorado State Statutes on April 29, 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 parts of nine counties deriving benefits from the project.

The District is the legal agency responsible for repayment of the reimbursable costs of the project. In addition to administering this 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 the 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 them subject to re-appointment.

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

☒

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.

The Southeastern Colorado Water Conservancy District does have a TABOR limitation with regard to grant money received from the State of Colorado. This contract may be phased over 2 years to accommodate this limitation.

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Part II. – Description of the Water Activity/Project

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

☐ Nonconsumptive (Environmental or Recreational)

☐ Agricultural

☐ Municipal/Industrial

☐ Needs Assessment

☐ Education

☒ Other Explain: This grant supports all listed categories

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

Further refinement and verification of the hydrologic model and shortage analysis contemplated in this grant request will enhance both the quality of Section 3.3 and 3.4 of the BIP and provide a water resources tool for the basin to identify its consumptive and nonconsumptive needs. This effort will be conducted in coordination of Phase Two of the Arkansas Roundtable Basin Implementation Plan

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

☒ Study ☐ Implementation

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

New Storage Created (acre-feet)

New Annual Water Supplies Developed, Consumptive or Nonconsumptive (acre-feet)

Existing Storage Preserved or Enhanced (acre-feet)

Length of Stream Restored or Protected (linear feet)

Length of Pipe/Canal Built or Improved (linear feet)

Efficiency Savings (acre-feet/year OR dollars/year – **circle one**)

Area of Restored or Preserved Habitat (acres)

☒ Other -- Explain: See Exhibit A

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

This grant will cover the entire Arkansas River Basin

Latitude:

Longitude:

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.

The Draft Arkansas Roundtable Basin Implementation Plan was delivered to the Colorado Water Conservation Board on the July 31, 2014 deadline. At the time of delivery, the Plan acknowledged that it was a draft only. Additional time and resources are required to verify and enhance the hydrologic model through a technical subcommittee. This model will be used to simulate future demand scenarios and evaluate shortages under dry, average and wet hydrologies within the Arkansas River Basin. The model will provide the Basin with a planning tool that can be used to identify regional shortages/conflicts.

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

This water activity increases the quality of input by the Arkansas Basin Roundtable to the Colorado Water Plan as contemplated in the Governor's Executive Order D2013-005.

b) The water activity underwent an evaluation and approval process and was approved by the Basin

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

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Roundtable (BRT) and the application includes a description of the results of the BRT's 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.

See Letter of Approval from Ark RT Chair

- c) The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes.² The Basin Roundtable Chairs shall include in their approval letters for particular WSRA grant applications a description of how the water activity will assist in meeting the water supply needs identified in the basin roundtable's consumptive and/or non-consumptive needs assessments.

This activity directly supports the Arkansas Basin Roundtable in its legislative mandate to “propose projects and methods to meet the needs” of the Arkansas Basin. (C.R.S. 37-75-101 et seq.)

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

30% (\$30,000) matching funds from the Arkansas Basin Roundtable (requested)

70% (\$70,000) funds from the Statewide Account

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

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.

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

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

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

A further refinement and enhancement of the hydrologic model and shortage analysis developed for the Draft Arkansas Roundtable Basin Implementation Plan is intended to connect gaps with projects and methods to meet those gaps. This effort will focus on two items. The first is to work with a technical committee to verify the model construct and operations to allow accurate simulation of regional water resources operations in the Arkansas Basin. Second, the model will be used to simulate shortages under future demands and varying hydrology. The model will be used to evaluate Identified Plans and Process that could address those shortages. This model will further clarify the interdependence between current agricultural uses of water, future needs to sustain agriculture throughout the basin and nonconsumptive needs.

- 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.

This program includes all members of the Arkansas Basin Roundtable, both voting and liaison, and their respective stakeholders and constituents.

- 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.

A further refinement of the hydrologic model and identification of shortages developed initially under the Draft Arkansas Roundtable Basin Implementation Plan will aid significantly in addressing gap areas in all water resource topic areas.

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Tier 2: Facilitating Water Activity Implementation

- d. Funding from this Account will reduce the uncertainty that the water activity will be implemented.

Funding from the WSRA will reduce the uncertainty that the Arkansas Roundtable Basin Implementation Plan is comprehensive in identifying the needs of the Arkansas River basin. In addition, the hydrologic model will be a useful tool that the Arkansas Basin Roundtable members can use to identify regional shortages and issues.

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

The consultant will be working with a technical committee to review the model, its contract and operations as an in-kind contribution to this effort. The technical committee will meet with the consultant to review the model and results. The technical committee will provide a verification of the model and shows the commitment from basin members to develop a regional water planning tool for the Arkansas Basin.

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

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

One of the goals of the hydrology modeling is to gain greater understanding of the interaction between agriculture, open space and the environment and recreation to better sustain agriculture and meet nonconsumptive goals.

- 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.

This water activity is intended to understand management of water resources in the Arkansas River basin to meet identified needs within the constraints of the Kansas v. Colorado lawsuit and the Arkansas River Compact.

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

Integration of nonconsumptive needs, and the protection of attributes with the Arkansas River basin are one of the goals of this water activity.

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

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The modeling and shortage analysis provides a tool for the Arkansas Basin to assess water availability and identify shortages.

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

This water activity will assist all Sections with the CWCB organization, but may be particularly helpful to the identification of Projects and Methods in the basin to minimize shortages.

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.

The water body affected includes the entire Arkansas River basin and those watersheds that are impacted by imports to the Arkansas Basin and exports from the Arkansas Basin.

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

The Draft Basin Implementation Plan dated July 31, 2014 will benefit from further refinement and inclusion of the input received during the Public Outreach initiative.

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

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

See Exhibit A.

REPORTING AND FINAL DELIVERABLE

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

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

PAYMENT

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

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

Signature of Applicant:

Print Applicant's Name: Jim Broderick, Exec. Director, Southeastern Colorado Water Conservancy District
Project Title: Arkansas Hydrologic Modeling and Shortage Analysis
Date: August 11, 2014

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
303-866-3441, ext. 3210 (office)
303-547-8061 (cell)
craig.godbout@state.co.us

Exhibit A

Statement of Work

WATER ACTIVITY NAME – Arkansas Basin Hydrologic Modeling and Shortage Analysis
GRANT RECIPIENTS – Southeastern Colorado Water Conservancy District
FUNDING SOURCE - Statewide Account / Basin Account

The following is a Scope of Work to verify and enhance the Hydrologic Modeling developed under the Draft Arkansas Basin Implementation Plan (Plan) between Draft and Final submittal to the Colorado Water Conservation Board (CWCB) and incorporation in to the Colorado Water Plan (CWP). The tasks identified in this scope of work will enhance Sections 3.3 and 3.4 of the Draft Arkansas BIP and include additional information as described in the Basin Implementation Plan (Plan) Draft Guidance.

The following is a description of the tasks to be completed under this scope of work.

Task 1 Hydrologic Modeling

This task will identify how to use modeling to compare or refine projects and methods. Refinement of a project could be used to optimize operations so that the impacts are mitigated or the project can be operated to serve multiple purposes. Modeling can also be used to understand how projects and methods perform under various hydrological scenarios.

Consultant Responsibilities

Task 1 – Hydrologic Modeling Verification

The purpose of this task is to review and enhance the Simplified Water Allocation Model (SWAM) model of the basin to support this study and future planning efforts in the basin. A technical committee will be formed to review and enhance the hydrologic model. The hydrologic model will be used in subsequent tasks to meet the overriding objectives of this plan in a practical and cost-effective manner.

The consultant will hold up to 4 meetings with the technical committee to review the model construct, model calibration and identify enhancements to be incorporated into the hydrologic model of the basin. These meetings may be conducted in person, electronically via web meeting and/or conference call due to the spatial distribution of the members of the technical committee.

Deliverables

- A technical memorandum describing the SWAM model and developed for this study
- The SWAM developed to assist in the spatial assessment of water resources in the Arkansas Basin under varying basin operations and hydrologic conditions

Task 2 Current and Future Shortage Analysis

Using the model developed in Task 3.3, the Draft Plan will be updated with specific locations of shortages compared against solutions generated in the Outreach initiative. The shortage analysis will summarize where M&I, agricultural, and nonconsumptive needs may have shortages under varying hydrology such as wet, dry, and average conditions.

Consultant Responsibilities

Task 2 – Shortage Analysis

The purpose of this task is to analyze water supply availability and uses for current conditions and a future planning horizon (2050) in order to gain a better understanding of both. Analyses will incorporate a range of hydrologic conditions and demand projections associated with the selected planning horizon. The analysis will include the evaluation of consumptive and nonconsumptive Identified Projects and Processes (IPPs) which may include additional storage. The analyses will include a shortage analysis as described above.

Deliverables

The results of the shortage analysis as documented in section 3.4 of the final Arkansas BIP and will be used to inform the development of constraints and opportunities within the basin. The consultant will:

- Meet with a technical committee to establish assumptions for up to 4 scenarios (e.g. planning horizon other than 2050, alternatives to “high growth,” changes in return flow as fully consumable source transition from agriculture to meet the municipal gap, dry-up of agriculture to meet increased agricultural demand from increased efficiency, etc.)
- Present Shortage Analysis to Arkansas RT at a roundtable meeting.

Task 3 Coordination and Reporting

The consultant will coordinate with the Arkansas BRT, the Executive Committee and its technical committees during the duration of this study and will provide documentation of the hydrologic model and shortage analysis for incorporation into Sections 3.3 and 3.4 of the final Basin Implementation Plan report for deliver to CWCB.

Consultant Responsibilities

Task 3: Coordination with Arkansas BRT and Reporting

The consultant will perform the following items associated with this task:

- Coordination with Arkansas BRT, executive committee and technical team.
- Prepare final Sections 3.3 and 3.4 for incorporation into the Arkansas Basin Implementation Plan (April 2015).

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Budget/Costs

Task	Description	Budget
Task 1	Hydrologic Modeling	\$40,000
Task 2	Shortage Analysis	\$50,000
Task 3	Coordination with Arkansas BRT and Reporting	\$10,000
Total Cost:		\$100,000

Schedule

Task	Description	NTP+90	NTP+180
Task 1	Hydrologic Modeling		
Task 2	Shortage Analysis		
Task 3	Coordination with Arkansas BRT and Reporting		