

**Water Supply Reserve Account – Grant and Loan Program
Water Activity Summary Sheet
Agenda Item 14.a**

Applicant: Southeastern Colorado WCD

Water Activity Name: Arkansas River Basin Study

Water Activity Purpose: Study, Provide Basin Management Options

County: All

River Basin: Arkansas

Water Source: Arkansas

Amount Requested: \$238,400 (Statewide Account); \$59,600 (Arkansas Basin Account)

Matching Funds: Basin Funds

Staff Recommendation
Staff recommends approval of up to \$59,600 from the Arkansas Basin Account and \$238,400 from the Statewide Account to fund the Arkansas River Basin Study. This approval is contingent upon the applicant addressing the issues identified in the Issues/Additional Needs of this summary sheet.

Water Activity Summary:

The Arkansas Basin Roundtable recognizes the need for an Arkansas River Basin analysis plan that addresses the entire Arkansas River basin region in Colorado. The plan will provide a mechanism for stakeholders to work together to overcome potential project implementation constraints and effectively implement water projects that achieve designated regional water management objectives. The plan would be developed using a phased approach with the first phase focusing on the technical aspects of the study including data analyses and engineering studies to provide a solid technical platform to support the second phase of the study. The second phase would an integrated planning approach for the entire Arkansas basin.

In the proposed activity, Phase 1 will include an analysis of historical water use in the basin, development of an Arkansas Basin Water Operations report showing how water is diverted and used under dry, average and wet conditions, a summary of water administration policies and procedures impacting water use in the basin, and the development of a hydrologic model that will be used to assess the water supply availability and uses for current and future (2050) conditions under varying hydrology.

Phase 2 will involve the development of a Plan presenting an integrated basin approach for addressing water management within the Arkansas basin (region). The Plan would present the vision and goals, establish water objectives and measureable targets for the region, identify water challenges and issues, identify opportunities for integrating proposed water supplies and water strategies, establish a system for prioritizing the strategies, present a plan for implementing the water strategies and identify the framework for integrated basin planning in the region.

OBJECTIVES

The objectives of Phase 1 of the study are to:

- Obtain historical water use data for the 1982 to 2012 study period from various sources that would show how water was used in the basin.

- Develop an Arkansas Basin Water Operations report that shows how water was diverted and used in three selected years in the study period reflecting dry, average, and wet hydrology.
- Describe water rights administration and compact administration policies and procedures and discuss how they impact water use in the basin.
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- Develop a hydrologic model and visualization tool to support this study with the understanding that this model would operate under simplified assumptions.
- Use the hydrologic model to support the analysis of water use in the basin under three hydrologic scenarios and two water demand scenarios: current and 2050.
- Use the hydrologic model to evaluate water management issues and options identified in Phase 2 of the study.

Threshold and Evaluation Criteria

The application meets all four Threshold Criteria.

The application articulates how the project meets the Evaluation Criteria as summarized below:

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

The proposed water activity's goal are to address multiple needs and issues relating to consumptive and nonconsumptive water needs in the Arkansas Basin. The proposed water activity will assist the Arkansas Basin understand water use in the basin under varying hydrology, gain knowledge about the administration of water rights, and allow the evaluation of management options to meet future demands could be met under varying hydrology. This information gathered and model developed under this proposed activity will help the Arkansas Basin meet their and Colorado's future water needs.

Tier 2: Facilitating Water Activity Implementation:

The applicant did not address how it meets Tier 2 evaluation criteria.

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

The applicant did not address how it meets Tier 3 evaluation criteria.

Discussion:

Staff is supportive of this project and believes that the development of a basin plan that utilizes an integrated basin approach for addressing water management within the Arkansas basin will provide significant strides in solving water supply problems in the Arkansas Basin. While SWSI 2010 provided a basin report for each basin in the state with overall a description of available water supplies, present and future consumptive demands and basin goals/objectives, this effort is significantly more detailed as it will examine varied hydrology (i.e. wet, dry and average), detailed description on the river administration, existing and potential future infrastructure and an evaluation of management options to meet future demands. In addition, Water Supply Planning staff believes that integrated basin planning is an important endeavor as it relates to the SWSI 2016 update.

Issues/Additional Needs:

The applicant and the Arkansas Basin Roundtable "Project Screening Committee" recently convened a conference call to discuss this project and potential redundancies or areas where this effort could compliment the efforts of the Arkansas DSS. During this call, the team decided that if approved, they would establish an advisory team including CWCB staff (Water Supply Planning and DSS) established to provide guidance to the project and to ensure that work does not duplicate work previous performed in the Arkansas DSS Feasibility Study or other work and that the work is complimentary to the Arkansas DSS work.

Related to the Arkansas DSS feasibility study, there appear to be some parts of Task 1 (Water Data Review) and 3 (Water Rights Administration Policies and Procedures) performed in the feasibility study. If approved, staff proposes to work with the applicant to identify these areas and reduce the level of effort and associated costs accordingly.

Under, “Objectives” at the beginning of the scope, delete the second bullet on page 2 of Exhibit A (Evaluate all existing hydrologic models...), as this task has been revised.

The purpose of task 6 is to create a draft and final report summarizing the results of Phase 1, provide meeting summaries and provide a presentation for use at the Arkansas Basin Roundtable meetings. Considering that tasks 1-5 have either a memo or report as a deliverable, it seems there should be some cost savings for task 6. Staff recommends that after tasks 1-6 are completed that the CWCB staff and advisory committee review the scope of work for Phase 2 (task 7) and make appropriate modifications based on the work/findings of Phase 1.

Task purpose of task 7 is to develop an Integrated Basin Plan (Plan) using a Basin approach with stakeholder involvement to address water management issues within the Arkansas basin. The nature of this task limits amount of specificity in the scope of work. Due to this limitation, staff requests that the task include the language, “not to exceed \$91,777” and work with the advisory committee and CWCB staff to determine if there are opportunities for cost savings in this task.

The applicant proposes the development of a hydrologic model that will be used to assess the water supply availability and uses for current and future (2050) conditions under varying hydrology. To be consistent with the SWSI 2016 update, staff suggests that future demands should be projected to the year 2060 rather than 2050.

Considering that basin planning will be a significant component of the SWSI 2016 update and it will be critical for the basin plans in other basins to be consistent in methodology and reporting, staff requests that the applicant be flexible in their approach to ensure consistency.

Staff Recommendation:

Staff recommends approval of up to \$59,600 from the Arkansas Basin Account and \$238,400 from the Statewide Account to fund the Arkansas River Basin Study. This approval is contingent upon the applicant addressing the issues identified in the Issues/Additional Needs of this summary sheet.

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.