

**Water Supply Reserve Account – Grant and Loan Program  
Water Activity Summary Sheet**

**Applicant:** Ruedi Water and Power Authority

**Amount Requested:** \$40,000.00

**Water Activity Name:** Roaring Fork Watershed  
Plan

**Source of Funds:** Basin Account

**Water Activity Purpose:**

**Matching Funds:** Yes, unclear up to  
\$75,000.00

Study or analysis (did not specify type)

**County:**

Multiple – Garfield, Pitkin, Eagle, Gunnison

**Drainage Basin:** Colorado – Roaring Fork, Frying Pan, Crystal

**Water Source:** Subbasin study

## **Water Activity Summary:**

### **Project Overview and Scope of Work**

This Grant Request is being submitted by the Ruedi Water and Power Authority (RWAPA) as the lead agency for the development of a Roaring Fork Watershed Plan. The process for creating that Plan has been developed over the last year by the Water Committee of the Watershed Collaborative, an informal group of local residents and government officials that has been convening regularly over the past several years to discuss valley-wide land use and resource management concerns. Since RWAPA is a well-established agency with a Board made up of representatives from the county and municipal jurisdictions in the valley, it was decided that RWAPA should be the official sponsoring agency for the Watershed Plan. The RWAPA Board has met several times to review the general outline of the Plan and has endorsed a funding scheme for Phase I of the Plan that would include contributions of \$10,000 each from the counties and \$5,000 each from the municipalities in the valley plus a contribution of \$20,000 from RWAPA reserve funds. This grant application is intended to provide for the \$40,000 remaining to be raised to meet the Phase I budget of \$115,000. Any funds raised in excess of the \$115,000 will be held over as contingency funds or to provide seed money/matching funds for future Phases of the Plan (described below). Six of the eight entities that make up the Ruedi Water and Power Authority have already made funding commitments to the Plan and the others are expected to do so in the next month. In addition, tentative funding commitments have been made by Gunnison County (which contains the uppermost reaches of the Crystal River) and the Colorado River Water Conservation District.

It is a given that maintenance of local water quality and quantity are vital to the valley's economy and quality of life. Since the Roaring Fork River and its tributaries cross a number of government boundaries, managing local water resource presents unique and difficult challenges. The number of local, state and federal agencies with water management responsibilities further complicates the issue. Although many local and specific water studies have been done in the valley, there has been no effort to "connect the dots" between the vast data sets that have been collected. Nor has there been a comprehensive attempt to determine the connections between local land use decisions and local water resources. Local governments are ill-equipped to determine the impacts of land use decisions on water resources and have difficulty responding in a unified way to threats to local water resources. 51 different water-oriented plans and studies specific to the Roaring Fork Valley have been identified. One of the key products of a Watershed Plan will be a comprehensive review of these plans and studies aimed at determining the connections between different aspects of local water resources and identification of key data gaps that affect our ability to make informed decisions. Also, the Watershed Plan is intended to provide a comprehensive picture of overall demand for water in the valley and projected current and future water supplies. Phase II of the Plan will include specific goals and objectives and a set of prescriptions that can be implemented by local governments and water managers and individuals to meet those goals and objectives. Those goals, objectives and implementation actions will be developed with the participation of the stakeholder group currently being assembled.

In addition, the Watershed Plan will provide the following tools and resources:

- Comprehensive mapping of local water resources
- A guide to local water resources and sustainable water use practices, written in laymen's language
- An identification of potential local water development and conservation projects, prioritized according to urgency and feasibility

- Recommendations for consistent land-use regulations affecting water resources.
- A response to potential grant funding agencies that require a Watershed Plan as a prerequisite to grant approval
- A data set that will contribute to regional and statewide water planning efforts such as the 1177 Basin Roundtable watershed planning process
- A framework for a common vision among local governments and water managers regarding water management and development, resource protection, conservation, habitat quality, recreation and water quality maintenance

### **Study Area Description**

The study area for the Watershed Plan will be the entire Roaring Fork Watershed from its source on Independence Pass to its confluence with the Colorado River in Glenwood Springs and will include the Fryingpan and Crystal Rivers and all major tributaries. A map of the area is attached. The area is typical of the Central Rockies in terms of geology, topography and vegetation. The Crystal River enters the Roaring Fork approximately 11 miles southeast of Glenwood Springs and the Fryingpan River enters the Roaring Fork at Basalt, approximately 25 miles southeast of Glenwood Springs. The City of Aspen is located another 18 miles to the south and the summit of Independence Pass is 20 miles east of Aspen. Elevation ranges from a high of over 14,000 feet at the summit of local peaks to the low of approximately 5,700 feet at the confluence of the Roaring Fork and the Colorado in Glenwood Springs. The approximate population of the valley is 55,000 per 2000 census figures. The region is dominated by the tourist and recreation industry with significant economic activity in the construction, real estate, service and government sectors. There are minor economic contributions from the manufacturing, mining, agriculture and resource extraction sectors. The resort towns of Aspen and Snowmass Village are major job centers while Glenwood Springs is a significant market and retail center and the entire region is being affected, in terms of job competition and housing, by oil and gas development in lower Colorado River basin between Glenwood Springs and Grand Junction.

### **Question B5 – Scope of Work**

RWAPA will enter into a contract with the Roaring Fork Conservancy and with the US Geological Survey to perform the work associated with the Watershed Plan. The Roaring Fork Conservancy is a local non-profit which has been in existence since 1996 and has, in that time, established itself as the local authority on technical water issues. The Conservancy is located in Basalt and its staff of seven has specialized expertise applicable to the tasks noted below. The U.S. Geological Survey will contract with RWAPA to complete a water quality retrospective study which has been in progress for several years.

## **ROARING FORK WATERSHED WORK PLAN**

### **1. Public Outreach**

RFC shall participate in the public outreach and stakeholder identification process by meeting with members of the public, representatives of various agencies and governments and other interested parties as identified by the Water Committee of the Watershed Collaborative and briefing those parties on the purpose, status and timetable of the Watershed Plan and by soliciting those parties' support and participation in the planning process. RFC shall also organize and manage at least three public meetings to present and discuss the Watershed Plan. It is understood that this public outreach process will be partially funded by an EPA "319" planning grant.

### **2. Analysis of Previous Studies**

RFC shall collect, review and analyze existing studies, including those identified by the Water Committee in previous searches and other studies that may be identified in the future. The purpose of that review and analysis will be to collate the information contained in those studies to develop a comprehensive representation of the Roaring Fork Watershed's water resources and threats to those resources. Data contained in those studies will be compared to determine if data is contradictory or complementary and to what degree there are gaps in existing data. Existing studies will be summarized and classified as to what element of the local water resources they address (i.e. water quality, water quantity, wildlife habitat, etc.). Analysis and comparison of data may be presented in tabular, graphic or spreadsheet form or such other form as may provide an accessible overview of the scope, detail, reliability and relevance of existing studies.

### **3. Narrative**

RFC shall provide a narrative report describing the State of the Roaring Fork Watershed, specifically addressing the following elements and topics:

1. Executive Summary
2. Background, scope and purpose
3. Environmental Setting
  - A. Geographic, geologic and regional setting
  - B. Wildlife Habitat
4. Socio-economic setting
  - A. Recreation and Tourism
  - B. Environmental Services
5. Land Use Status and Trends
6. Regional Water Planning Context
7. Water Issues Overview
  - A. Water Quantity

1. Ground Water
2. Surface Water
3. Flood Control
4. Water Storage
5. Climate Change Issues
- B. Water Quality
  1. Point Sources
  2. Non-point Sources
- C. Riparian and Aquatic Habitat
- D. In-stream habitat
8. Water Issues Discussion
  - A. Upper Roaring Fork (Independence Pass – Aspen)
  - B. Upper Middle Roaring Fork (Aspen- Basalt)
  - C. Lower Middle Roaring Fork – (Basalt – Carbondale)
  - D. Lower Roaring Fork – (Carbondale – Glenwood Springs)
  - E. Maroon/Castle Creek
  - F. Capital/Snowmass Creek
  - G. Fryingpan River
  - H. Crystal River
  - I. Cattle Creek
9. Data Gaps
  - A. Recommendations for further studies
10. Immediate and Acute Threats
11. Summary Assessment of Available Resources and Current and Projected Demands
12. Recommended Immediate Actions or Projects
13. Maps
  - A. Roaring Fork Watershed
  - B. Sub-Watersheds
14. Goals and Objectives of Phase II
15. Next Steps

**Phase II of the Plan will provide the following:**

- Recommendations for regulations, guidelines, legislation or standards to be instituted by local governments to improve local water management practices
- A set of goals and objectives and recommended actions based on public and government response to Phase I
- A complete data set suitable for distribution by various means to local planners, water managers and citizens
- Recommendations for further studies
- Recommendations for funding of studies, projects and organizational initiatives associated with implementation of the Plan

**Phase II of the Plan has not been outlined in detail so no budget or timetable is yet available.**

**PHASE I BUDGET**

Elements 1-12 as described in the Work Plan - \$105,000

Expenses including travel, communications, reproduction, graphics, mail and materials - \$5,000

Contingency - \$5,000

In-Kind Services from Roaring Fork Conservancy, Nature Conservancy, Local Govts. - \$20,000

## **FUNDING SOURCES**

\$55,000 – Local Government Contributions

\$20,000 – RWAPA Reserve Funds

\$40,000 – Grants and Contributions from other Agencies

## **TIMETABLE**

Public Outreach and Stakeholder Identification - 11/1/06 – 2/1/07

Existing Studies Analysis – 1/1/07 – 9/1/07

Public Meetings – January, May, October, 2007

Draft State of the Watershed Report – 11/1/2007

Final State of the Watershed Report – 1/1/2008

### **Question B7 – Water Availability and Sustainability**

The Roaring Fork Watershed Plan will assess the entire Roaring Fork watershed including the Fryingpan and Crystal Rivers and major other tributaries. Although these sub-watersheds vary slightly they are, in general, typical mountain water systems characterized by steep gradients, high water quality, low temperatures and wide fluctuations between spring flood flows and fall/winter minimums. The Roaring Fork is highly diverted and is occasionally dry in spots due to transmountain and irrigation withdrawals. The Crystal is also occasionally dry in spots due to irrigation demands. These waters are highly productive fisheries with both the Roaring Fork and the Fryingpan designated as Gold Medal trout waters. The Fryingpan is the site of 101,000 acre-foot Ruedi Dam and Reservoir. The reservoir is part of the Fryingpan-Arkansas Project and was built in 1968 to provide compensatory storage to the West Slope. The reservoir also provides water for sale under contract to the Bureau of Reclamation and for supplemental endangered species flows. All three rivers are heavily used for recreation. Kayaking and rafting are popular during the summer months and fishing is a year-round attraction. These rivers have been highly impacted by development, largely in the form of depleted flows and loss of native riparian vegetation. Even so, the Crystal has been considered eligible for designation as a National Scenic River.

The Roaring Fork Watershed Plan is not expected or intended to have a direct or immediate impact on the use, development or depletion of water. It is, rather, expected to produce a series of findings under the following general headings:

- State of the Watershed
- Summary of local water resources and demands on those resources based on existing knowledge
- Data gaps in our knowledge or understanding of local water systems
- Acute and immediate threats to local water quality and quantity
- Prioritized project recommendations for meeting those threats and taking pro-active steps towards preservation of local water resources
- Short-term and long-term goals and objectives aimed at preserving local water resources
- Prescriptions for legislative, regulatory, and other implementation actions for meeting those goals and objectives

**Discussion:**

This application focuses on issues associated with water resources in the Roaring Fork subbasin and appears to be very broad in scope. It is also ambitiously and in staff view wisely seeks to integrate water resource information and issues with local planning decisions. However, the application also introduces an element of study purpose that may not conform with the legislation that created the Water Supply Reserve Account. This legislation states that monies from the Account must be consistent with Section 37-75-102 C.R.S. Specifically, on Page 9 of the application it indicates that the Watershed Plan is intended, in part, to produce findings related to “acute and immediate threats to local water quality and quantity” and “prioritize project recommendations for meeting those threats and taking pro-active steps towards preservation of local water resources”. The applicant has not addressed the threshold criteria, which prevents staff from fully assessing this potential issue.

In addition, pursuant to 37-75-104 monies shall assist in meeting those water supply needs identified by: using data and information from the Statewide Water Supply Initiative (SWSI) and other appropriate sources and in cooperation with the ongoing SWSI, develop a basin-wide consumptive and non-consumptive needs assessments including an analysis of consumptive and non-consumptive needs, conduct and analysis of available unappropriated waters and propose projects or methods, both structural and non-structural, for meeting those needs and utilizing those unappropriated waters where appropriate. While the study scope appears to have some nexus with consumptive and non-consumptive needs it does not reference or appear to consider the methodologies and findings of SWSI and does not appear to consider how this information will be integrated into the basin wide needs assessment (Colorado basin overall). While not specifically required staff also believes that the effort should consider how the final product can help in the promotion of a common technical platform for the Colorado basin and other 8 basins involved in the Water for the 21<sup>st</sup> Century Act.

**Issues/Additional Needs:**

The application is not complete.

The threshold criteria need to be specifically addressed. This should include a description of how the results of the study will be used.

Applicant needs to specify study type.

The budget does not contain rates and level of effort. The funding is unclear the description on Page 3 is difficult to compare to the description on Page 8.

The schedule does not contain key milestones.

The schedule indicates that some past work has been done. Past cost can not be reimbursed.

The expertise and capacity of the staff and their ability to complete the work is not described as requested on Page 10 of the Criteria and Guidelines (Description of Applicant bullet 3 and Page 12 Scope of Work bullet 4).

The Colorado Basin has also requested funding for the Upper Colorado Endangered Species Study which involves evaluation of options within the Roaring Fork subbasin. The application does not mention or address how these two efforts will be coordinated or if coordination is not needed why it is not.

The study scope mentions: mapping of local water resource but does not define the term or address “level of detail issues for all water resources”; identifies a goal of sustainable water use practices but does not define how that is defined and what analysis that would entail; and discusses providing a comprehensive picture of overall demand for water in the valley and projected current and future water supplies but does not identify the logistics, methodologies, and planning horizon. These issues relate to integration with SWSI and the development of a common technical platform for consistency and comparability of local, basin, and statewide water resource analysis and planning.

The study process appears to have implications on water users in other basin(s). The scope of work does not appear to include participation by these key stakeholders.

See also issues in the discussion section.

Information on aquatic species (type, occurrence and density) is not mentioned specifically and could be of value.

The CWCB provided funding for a Multi-objective Roaring Fork Study, which had a flood focus but should provide valuable information for this effort.

**Staff Recommendation:**

The Roaring Fork Valley is an area of the state that has and will continue to undergo significant changes and is very diverse. Rapid population growth, diverse/ changing demographics and water uses, and water resource develop at and near headwater areas present significant challenges and the Watershed Plan has many elements that will help provide information for wise water resource management decisions.

The Watershed Plan has the potential to help identify and address important non-consumptive and consumptive needs for the basin. However, it is also possible that the implementation of the study could result in a conflict with Section 37-75-102 C.R.S. and should address Section 37-75-104 C.R.S. The applicant needs to specifically address these two important threshold criteria and statutory requirements of the Water Supply Reserve Account.

It should also be noted that staff hopes to continue a statewide non-consumptive workgroup based on the membership of the SWSI Environmental and Recreation Technical Roundtable (additional members will also be encouraged to participate). This workgroup would help develop and coordinate Colorado's approach to non-consumptive needs to promote a common technical platform and ensure a consistent and comparable approach on both a local and statewide basis. The applicant is encouraged to work with the CWCB and the non-consumptive workgroup in the implementation of the Watershed Plan.

Based on the above and addressing the items in the issues/additional needs section, staff recommends approval of up to \$40,000 for implementation of the Roaring Fork Watershed Plan.

All products, data and information developed as a result of this grant must be provided to 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.