Water Supply Reserve Account – Grant and Loan Program
Water Activity Summary Sheet
Agenda Item 21e

Applicant: Red Mesa Reservoir & Ditch Company

Water Activity Name: Red Mesa Dam & Reservoir - Incremental Damage Analysis (IDA) & Emergency Action Plan (EAP)

Water Activity Purpose: Study or Analysis of Structural and Nonstructural Water Project

County: La Plata County

Drainage Basin: La Plata River

Water Source: La Plata River and Hay Gulch

Amount Requested: $29,000 (Southwest Basin Account)

Matching Funds: $3,000

Staff Recommendation
The proposed project will help meet a consumptive water supply need in the Southwest Basin. Staff recommends approval of up to $29,000 from the Southwest Basin Account to partially fund the Red Mesa Dam & Reservoir - Incremental Damage Analysis (IDA) & Emergency Action Plan for the Red Mesa Reservoir & Ditch Company contingent on resolution of the items in the issues/additional needs section.

Water Activity Summary:
The proposed activity consists of both structural (Incremental Damage Analysis - IDA) and non-structural (Emergency Action Plan - EAP) analyses necessary for the continued safe operation of the applicant's Red Mesa Dam at the current fully-decreed storage capacity. The IDA is intended to identify the minimum Inflow Design Flood (IDF) required for sizing a spillway compliant with the "Rules and Regulations for Dam Safety and Dam Construction" issued by the Colorado State Engineer's Office (SEO). The existing spillway has been identified as hydrologically inadequate for a High Hazard dam. Revision and improvement of the Emergency Action Plan is also required by the SEO, as the existing plan is out of date and insufficient for a High Hazard dam. Due to similarities in the IDA and EAP inundation analyses and mapping processes, inclusion of EAP development within the proposed project will also result in overall cost savings to the company.

The Red Mesa Reservoir & Ditch Company owns and operates the Red Mesa Reservoir, originally constructed in 1908. The reservoir is situated on Hay Gulch, a tributary to the La Plata River, and is currently the only significant water storage facility located in the La Plata River drainage. It is used to irrigate about 1140 acres in the Red Mesa system. With a maximum dam height of 58 feet and a decreed capacity of 1172 acre-feet, the dam is considered by the SEO to be a High Hazard dam, and consequently subject to the safety rules and regulations of the Colorado Dam Safety Branch.

Due to its current hydrologic inadequacy, the reservoir faces potential restriction by the SEO on its future usage and fill level if a satisfactory spillway is not constructed. This would result in a serious loss of water supply to the lands of the lower La Plata River basin and significant economic impact. Past evaluation of the

IDF, and the spillway size necessary to pass that flood, have projected spillway costs far beyond the financial reach of the applicant. The SEO allows an alternative method of IDF development for spillway sizing known as Incremental Damage Analysis (IDA) that is particularly applicable for relatively small reservoirs situated on relatively large watersheds. The benefit of the IDA study is a likely reduction in the magnitude of the required design flood and a potential for significant construction cost savings, which would allow the applicant to move ahead with more affordable design and construction costs while avoiding a potential reservoir restriction or breach order. The design and construction of a compliant spillway would significantly reduce the risk of a dam failure due to flood overtopping, and help preserve the value of the dam and reservoir for future use.

Threshold and Evaluation Criteria
The application meets all four Threshold Criteria. No Statewide funds are being requested, therefore the evaluation criteria does not apply.

Funding Overview
Grant funding in the amount of $29,000 is requested from the Southwest Basin Account. Funding from the WSRA constitutes roughly 90% of the overall project cost ($32,000). The $3,000 balance of the project's funding will come from the applicant's cash reserves. This represents essentially all of the current cash reserves of the company. The current project is likely to be only a small fraction of the ultimate costs for the design and construction of a new spillway, which will be born by the shareholders in the form of higher assessments and liability for loans which will likely be pursued through the CWCB and/or other sources.

Discussion:
The need for continued and/or improved water supply and storage within the La Plata River drainage, commonly referred to locally as "the dry side," was identified by the Southwest Basin Water Supply and Needs Report. The Animas - La Plata Project, as originally conceived and developed by the U. S. Department of Interior, would have resolved much of the water supply problem on the La Plata River drainage. However, the irrigation water supply component for the La Plata side was ultimately removed from the project as a condition of gaining approval. Thus, irrigation water supply and storage needs on the La Plata drainage were never addressed, and irrigation water remains in short supply, frequently affected by flow delivery requirements of the La Plata River Compact with New Mexico.

The proposed project is the necessary first step in attaining compliance with spillway and EAP requirements for the dam. It would help assure continued full usage of the decreed storage within the reservoir, thereby maintaining the existing water supply within the La Plata River drainage, without requiring the need for developing new water sources. Red Mesa Reservoir is currently the only significant water storage facility on the La Plata River basin. Partial or complete loss of its capacity due to a reservoir restriction would have very significant impacts on the basin and the ability of current water users to appropriate decreed waters administered under the La Plata River Compact.

As identified in the SWSI findings, agricultural water users often lack sufficient funding to adequately address infrastructure needs without financial aid. The proposed project effectively meets the objectives of HB 1177 and the consumptive needs of the Southwest Basin by rehabilitating existing infrastructure to achieve significant savings of agricultural water.

Issues/Additional Needs:

- Please include a more detailed budget and scope of work.
- Please include an updated project schedule that includes completion dates for key project milestones.
- Staff encourages applicants to investigate CWCB loan programs to assist with funding of spillway design and construction identified by the current project

Staff Recommendation:

The proposed project will help meet a consumptive water supply need in the Southwest Basin. Staff recommends approval of up to $29,000 from the Southwest Basin Account to partially fund the Red Mesa Dam & Reservoir - Incremental Damage Analysis (IDA) & Emergency Action Plan for the Red Mesa Reservoir & Ditch Company contingent on resolution of the items in the issues/additional needs section.

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.