

**\*Project Name**

Loch Lomand and Fall River Reservoir Capacity Upgrade Assessment

**\*Grant Recipient**

Agricultural Ditch and Reservoir Company

**\*Primary Contact**

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**\*MRT WSRF Grant Type**

Conservation and Reuse

**Eligible Water Activities (Check All That Apply)**

Municipal/Industrial  
Needs Assessment

If other, please explain.

(No response)

**Total Project Cost**

\$ 100,000.00

**\*MRT WSRF Grant Amount Request**

\$ 75,000.00

**Colorado Water Plan Grant Amount Request (if any)**

(No response)

**Other Basin Roundtable WSRF Funding Being Requested (if any)**

\$ 75,000.00

**If Other Roundtable Requests, which roundtable(s)**

South Platte Round Table

**\*Project Description**

The Agriculture Ditch and Reservoir Company (ADRC) oversees water delivery across a geographic area ranging from headwater to highly urbanized locations. We have been providing water to the Denver-Metro area since the 1860's, during which time our clientele has shifted from agriculture to industrial and residential customers, reflecting the economic and demographic changes along Colorado's Front Range over 160 years. Because of these changes, we must adapt to new pressures and are seeking grants from the Metro and South Platte roundtables to holistically address current demands and plan for future needs. The long-term goal of our project is to modernize our infrastructure and provide the best service possible to our shareholders, maintain our ability to be good stewards of Colorado water, and enhance our ability to react quickly should issues occur. To reach this goal, we have a 10-year plan to implement innovative improvements to realize efficiencies throughout our system, allowing us to optimize our existing infrastructure and provide additional storage in existing reservoirs as an alternative to agricultural dry up. Additionally, we plan to address fire mitigation and flood resiliency to further ensure reliable water delivery and have a positive impact on recreation, the environment, and the communities that rely on sustainably managed forests. To strategically identify the most pressing needs of our system, our first step is to complete a Comprehensive Dam Safety Evaluation (CDSE) for our two headwater reservoirs, Loch Lomond and Fall River. The CDSE process is intended to evaluate Potential Failure Modes for high and

significant hazard dams so that maintenance and safety improvements can be prioritized in a risk-based setting. By completing this process, we will be able to identify the highest and best use projects for financial and water budgets. This will complement our CDSE for Smith Reservoir, which we are undertaking out-of-pocket.

**\*Which MRT priorities does the project address? How?**

This project will fulfill the following priorities: Alternative to permanent agricultural dry-up: Initiate the process to assess system-wide inefficiencies, maximizing the use of existing water rights. Identify opportunities to optimize existing and future water supply and infrastructure: The project will examine the ability of two existing reservoirs to increase storage capacity for previously attained water rights for ARDC and other suppliers. Ensure adaptive water for future needs (Environmental and Recreational): The CDSEs will identify where upgrades can be made as part of a 10-year plan that will examine additional recreation opportunities at Loch Lomond and Fall River reservoirs and fire mitigation that can be incorporated into long-term planning efforts. Additional phases of the project will expand upon the initial findings of the CDSEs and develop solutions that can be implemented as part of our overall system-wide upgrade.

**\*Project Timeline and Tasks**

ARDC will perform two CDSEs following the framework developed by the Colorado State Engineer's Office (SEO). This will include: • Review existing data for the reservoirs including drawings, specifications, inspection and engineering reports, and topographic data, • Assemble existing project information including a facility summary, construction and modification investigations, designs and analyses, performance histories, known deficiencies, and a summary of operations, • Develop loading conditions for the reservoirs including normal, hydrologic, and seismic conditions, • Estimate downstream consequences using the Bureau of Reclamation (USBR) Reclamation Consequences Estimating Methodology (RCEM) to evaluate risk, • Develop potential failure modes (PFM), including screening out remote likelihood PFMs with the SEO, and preparing the remaining PFMs for discussion, • Filling data gaps prior to a Potential Failure Mode Analysis (PFMA) Workshop; • Performing a one-day PFMA Workshop with the SEO including a project overview, brief review of the remote PFMs previously dismissed, developing PFMs that were carried forward, developing positive and adverse factors for each PFM based on available data, determining likelihood for each PFM, developing a list of potential risk reduction measures, evaluating the opportunity for reservoir enlargement; and • Performing detailed reporting of the CDSE in a Draft and Final CDSE Report. These tasks will take eight months to complete.

**Attach Budget (not required)**

(No response)

**Attach a map, graphic, etc. (not required)**

(No response)

**Attach a File (not required)**

(No response)