



S O U T H E A S T E R N C O L O R A D O

Water Conservancy District

"Your investment in water"

Recovery of Storage Phase III Request for Proposals (RFP)

Description of the District

The Southeastern Colorado Water Conservancy District (District) was created under Colorado State Statutes on April 29, 1958, by the District Court in Pueblo, Colorado. The District is governed by a board of fifteen court appointed directors serving four-year terms each. The District boundaries are made up of portions of nine counties; Bent, Chaffee, Crowley, El Paso, Fremont, Kiowa, Otero, Prowers, and Pueblo counties. Please visit our website to learn more about the District <https://secwcd.org/>.

The District is a local Government and is a tax-exempt entity. Upon notice to proceed tax exemption information will be provided to the chosen contractor.

Program Background

Pueblo Reservoir is a feature of the Fryingpan-Arkansas Project (Project) which was constructed by the Bureau of Reclamation. Pueblo Reservoir was authorized by federal legislation in 1962, and construction began in 1970. Pueblo Reservoir began storing Project water in 1974. The District owns the water rights for Project water and consults with Reclamation on the operation of the Project. Non-Project water has been stored in Pueblo Reservoir since 1986 under Excess Capacity contracts with the Bureau of Reclamation.

Reclamation studies of Pueblo Reservoir in 1993 and 2012 showed the capacity of Pueblo Reservoir decreased to 338,374 acre-feet from its original capacity of 357,816 acre-feet.

The District Board recognized the need for a Recovery of Storage program in 2019 after examining the loss of storage space in Pueblo Reservoir.

Phase I of Recovery of Storage was completed in 2020. The purpose of the study was to evaluate methods of recovering storage in Pueblo Reservoir, including sediment diversion, dredging, enlargement and alternative storage.

Phase II of Recovery of Storage was completed in 2021. The purpose of the study was to assess the impact of loss of storage, identify at what point the loss becomes critical to Project operations and identify drainages upstream of Pueblo Reservoir that are likely major sediment sources. The study showed that sedimentation would begin impacting Excess Capacity storage by 2052, and Project storage by 2092 if the present rate of sedimentation continues.

In May 2022, Reclamation was awarded funding to perform Recovery of Storage Phase III including bathymetric and LiDAR surveys of Pueblo Reservoir, sample sediment, assess tributary risk and analyze sediment reduction strategies.

Scope of Services Required

Reclamation will perform the bathymetric and LiDAR surveys and sample sediment. The District will analyze sediment samples, do the upstream tributary risk assessment and analyze sediment reduction strategies.

A detailed required scope of work for the District's portion of the work is included in the Request for Proposal of the Recovery of Storage Phase III listed below.

Storage Recovery Study Scope of Work Phase III

Introduction

This scope of work describes the tasks, deliverables, and budget for the Phase III – Pueblo Reservoir Upper Arkansas River Basin Tributary Risk Assessment for the Southeastern Colorado Water Conservancy

District's (District) Fryingpan-Arkansas Storage Recovery Study to be provided by Consultant. The Phase III work is a continuation of the Phase I & Phase II study work previously performed and delivered to the District by Mott MacDonald, under a previous contract.

Pursuant to recent scoping conversations with District staff, Consultant understands that the District's goals and objectives are that the Phase III Study:

- Conduct a desktop study to assess the historical sedimentation of the Upper Arkansas River system since dam closure.
- Use publicly available data to develop a qualitative assessment of unregulated tributaries upstream of Pueblo Reservoir. This assessment will be used to identify where the sediment load that eventually deposits in Pueblo Reservoir is coming from.
- The results of the assessment will be used to facilitate discussions with the District as to whether methods of sediment source control are viable and cost-effective options to reduce the sedimentation rate of Pueblo Reservoir. If viable, development of sediment source control alternatives will be included in a future phase of this study.
- Results of this study can be used by the District and Consultant team to facilitate the development and iteration of future storage recovery study phases and/or tasks. Future studies can include field data collection, detailed numerical modeling, sediment source control alternatives analysis and reservoir modifications to recover storage.

Scope of Work

1. Project Management Plan

This task includes an update to the Project Management Plan (PMP) developed during the Phase I & II study, project status meetings, and additional coordination with the District through the duration of work. During this task, the Consultant team will be responsible for the following work:

- Project management and administration, including invoicing, internal/external coordination, and deliverable quality control and assurance.
- Submittal of a Project Management Plan (PMP) inclusive of an updated project schedule, staff management plan, and project communications plan.
- Periodic project status conference calls with the District.

2. Phase III Study Initiation Workshop

In coordination with the District, Consultant will schedule a virtual Study Initiation Workshop to discuss project objectives and goals, schedule, available data sources and requests, work plan, and project schedule.

3. Data Collection and Basis of Assessment

This task includes data requests, supplemental document review, data processing, identification of data gaps, and the development of a Basis of Assessment technical memorandum by Consultant to be reviewed with the District prior to the initiation of Task 4. During this task, the Consultant team will be responsible for the following work:

- Obtain and compile the following relevant data sets as layers in a geographic information system (GIS)-based web app to facilitate review and interpretation of the data and maps of sub-areas by more than one person concurrently. The data sets shall include:
 - Hydrographic and water quality data for the Upper Arkansas Basin.
 - Light detection and ranging (LiDAR) bare earth elevation data from the USGS and Colorado Geological Survey.
 - Geologic maps and landslide inventories
 - Soil erosion data
 - Existing topographic contours from the USGS
 - Review and compilation of other pertinent historical information and data including, but not limited to, known wildfire areas within the basin and historical flooding events that may not be reflected in available streamflow data.
- Document available elevation data sources; expected to include 2016 LiDAR collected for the Colorado Water Conservation Board (CWCB), and other publicly available data.
- Obtain aerial photos and/or satellite imagery for areas identified as significant sediment sources. Where available, aerial photos that bracket events such as a forest fire or landslide.
- Provide to the District a Draft and Final Basis of Assessment Technical Memorandum documenting the proposed assessment plan to qualitatively assess the impacts of the Upper Arkansas River Basin tributary sedimentation (within the agreed upon project area limits). The Basis of Assessment will include a summary of provided data, data gaps, and assessment approach.

4. Upper Arkansas River Basin Tributary Risk Assessment

This task involves a desktop assessment to assess historical sedimentation and sediment sources in the Upper Arkansas River system since dam completion in 1975. The work will include data analysis and report compilation using the data collected in Task 3.

During this task, the Consultant team will be responsible for the following work:

- Generate a composite LiDAR-based digital elevation model, hillshade imagery and slope percent maps, erosion potential maps for surficial soils from the NRCS data, and a composite geologic map. These composite datasets will be used to interpret landslides, steep slopes, and areas of potential elevated erosion susceptibility outside of

established river and tributary channels. The work will include the following sub-tasks:

- Identify geologic units that coincide with potential source areas based upon the generated composite datasets.
- Map the fluvial geomorphic forms of areas of accumulated sediment (bars, fans, deltas) within the established drainage system, and generate simple long profiles of the streams of interest based on the composite LiDAR digital elevation model.
- Generate higher resolution (smaller contour interval) topographic maps from the LiDAR data as needed or selected areas identified as being potentially significant sediment sources to supplement the LIDAR hillshade and slope percent to refine the interpretation.
- Review aerial photographs and/or satellite imagery available from Google Earth and that is publicly available from the USGS Earth Explorer or other government agencies, as needed, for areas identified as being potentially significant sediment sources to supplement and refine the interpretation. In general, we will try to obtain and review aerial photos on an approximately 5-year interval from 1965 through 2021 for general review of selected areas or may obtain photographs that bracket a specific event such as a forest fire.
- Generate an Upper Arkansas River Basin Sediment Source Assessment Report which summarizes the results of the data collection and analysis. The report will identify the likely major causes of sedimentation, as well as identify the drainage basins that are the most likely contributors to the eventual sedimentation of the Pueblo Reservoir.
- The report will include a discussion of the technical approach and resources used and a summary of the basis for our interpretation and conclusions for each substantive source area.
- Document next steps, develop recommendations for future field data collection programs.

5. Review Meeting

Following completion of Task 4, Consultant will schedule a virtual meeting/workshop to present and discuss the Phase III findings and any recommendations for future work that have arisen during the execution of the Study.

6. Final Report and Presentation

Consultant will submit the Final Report of the findings of the Phase III – Upper Arkansas River Basin Sediment Source Risk Assessment for review by the District. Supporting technical work justifying the findings will be summarized in the report and fully transmitted as Addenda to the Report. Coordination with Reclamation will be the District’s responsibility.

Project Timeline Required

RFP posted at District and on District web site	April 3, 2022
Prospective bidder's Inquiries Meetings by appointment	April 10-14, 2022
Inquiries via email deadline.	April 17, 2023 by 4:00 p.m.
Proposal deadline.	April 24, 2023 by 4:00 p.m.
Notifications of bid selection.	May 1, 2023
Engagement of successful firm; contracting scheduling	May 18, 2023
Notice to Proceed.....	May 19, 2023
Project completion.....	September 30, 2023

Proposal Content

The District is looking for a total firm fixed cost to complete the above Recovery of Storage Phase III within the project timeline listed.

Inquiries

Contractors are welcome to contact the below administrator via email at the District regarding specific inquiries to create the most accurate proposal. All inquiries will be answered upon request. Firms are requested to provide proposals to the District by April 24, 2023 no later than 4:00 pm. This RFP is issued by the District.

Southeastern Colorado Water Conservancy District
Attention: Chris Woodka, Senior Policy and Issues Manager
RE: Recovery of Storage Program RFP
chris@secwcd.com

Right to Reject Proposals

The District reserves the right to reject any or all proposals and accepts no responsibility for the cost of proposal preparation.

Documents

Full Recovery of Storage Phase I and II Reports can be viewed on the District website [at this link](#) under Project Progress.