

## **Cucharas Basin Collaborative Storage Study:**

In an area of limited precipitation such as Huerfano County, storage is an essential part of effective water resources management. At the end of WWII, storage capacity on the Cucharas River totaled some 47,000 acre-feet, being roughly twice the river's virgin flow. By 2013, however, that capacity had been reduced by over 70% to about 13,000 acre-feet, due to poor maintenance of earthen dams, restrictions on storage issued by the State Engineer's Office of Dam Safety, and abandonment of storage facilities due to economic hard times.

At a 2013 workshop of the Huerfano County Water Conservancy District, the Division Engineer and members of his staff participated and emphasized the need for collaborative storage on the Cucharas River. As a result the HCWCD board adopted its "Goals and Strategic Plan" found elsewhere on this website. These goals included collaboration with major water users (Collaborators) to develop collaborative storage on the Cucharas River. In 2015 the Cucharas Storage Collaborative (Collaborative) was formed and sought funding for a reconnaissance level study of local storage needs and potential solutions to those needs (Phase I). In December of that year, a grant was awarded by the Colorado Water Conservation Board with a completion date of December 31, 2017. ParsonsWater Consulting, known for its modeling expertise, was engaged by the Collaborative as the primary consultant. In turn, ParsonsWater retained Applegate Group as a sub-consultant for various engineering aspects of the study.

The Collaborative Storage Study was completed in June 2017, after ten public meetings between the Collaborative and the consultants. Over the course of a year and a half, during and between those meetings, the consultants worked with each of the Collaborators to identify their individual storage needs or demands, summarized in the accompanying table. Thereafter, ParsonsWater developed a water rights yield model for the Cucharas River using a network described in the accompanying Yield Model Network diagram. In the meantime, the Collaborators and Applegate reviewed 26 existing reservoirs and seven potential reservoir sites shown on the Reservoirs and Sites map to determine whether the sites would be appropriate for further development. Each site was evaluated using seven weighted screening criteria, see accompanying table. The results of that evaluation are shown on the resulting Screening Matrix. Five preferred sites were selected (Preferred Sites) and, from the model, their anticipated annual average storage yield was determined as reflected on the accompanying Preferred Sites table, with locations shown on the Preferred Sites map, both of which accompany this narrative.

The study results confirmed the view of the Collaborators that unappropriated water is available for junior water rights (i.e. appropriate rights of exchange), that development of the Preferred Sites is feasible, and that their storage was needed by the Collaborators. Consequently, in December, 2017, the Town of La Veta, the Cucharas Sanitation and Water District, and the Huerfano County Water Conservancy District filed a joint Water Court application for the adjudication of conditional water storage rights and appropriative rights of exchange to place the water into storage. It bears case number 2017CW3075 and is shown in the accompanying Water Court document. Such applications typically take three years before the Water Court issues a decree. Consequently, a final decree is anticipated in 2020 or 2021.

Final documentation for the Phase I study is in three parts, all of which can be accessed on this website: “Storage Study Report – Executive Summary,” “Task 1 Storage Needs Assessment,” and the final report, “Task 2 Screening and Cost-Benefit Analysis.”

The next step, Phase II, will be an examination of the Preferred Sites "to gather site-specific geotechnical data that can be used to refine the feasibility level designs and cost estimates...resulting in a better understanding of total construction costs." Grant funding from the Colorado Water Conservation Board is currently being sought for Phase II. A decision on the grant application is expected in March 2018. If the grant is awarded, completion of the Phase II geotechnical study is anticipated in the fall of 2018.

Listed as project #ARK-2015-0007 in the Arkansas Roundtable Basin Implementation Plan’s Master Needs List, total project cost for Phase I was \$250,000 of which \$220,000 was provided by the Colorado Water Conservation Board Water Supply Reserve Account and \$30,000 was provided by five local Collaborators, the Huerfano County Water Conservancy District, the Huerfano County Board of County Commissioners, the Cucharas Sanitation and Water District, the Town of La Veta, and the City of Walsenburg.

Requested CWCB grant funding for the Phase II Geotechnical Investigation is \$93,277, with matching funding coming from the same local sponsors as for Phase I, plus the Maria Lake Grazing Association, Cuchara Investments, LLC and Huerfano County Federal Mineral Lease District, for a total Phase II project cost of \$133,557.