

I. Project Title: Colorado River Decision Support System (CRDSS)

II. Bureau of Reclamation Agreement Number(s): N/A

III. Principal Investigators:

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IV. Abstract:

The CRDSS supports better decision making with respect to the utilization of Colorado River water resources. It provides computer databases and tools to make informed and timely decisions regarding the use and operation of Colorado's water resources in the Upper Colorado River Basin. The CRDSS operates in accordance with existing compacts and state laws governing the administration of water and water rights, and will allow planning for the optimal use and development of Colorado's water resources to occur.

In relation to the Recovery Program, CRDSS is being used to evaluate the physical and legal water availability at different locations along a stream and to determine the amount of water available for instream flow appropriations. It can also provide information to help determine the impacts of endangered fish flows on Colorado's ability to develop its full compact apportionment.

In 2019, CRDSS was used in the Colorado Water Plan Technical Update to perform scenario planning and update planning numbers for demands and uses statewide. The scenario planning incorporated climate change modeling for the first time in a statewide water supply study. CRDSS was also used for depletion accounting for the 15-Mile Reach and Yampa PBO for the periods 2006-2010 and 2011-2015. The modeling and accounting are based on depletions determined from StateMod and StateCU datasets and models. StateCU model datasets have also been updated to include variable efficiency methods and elevation adjustments for use in the Modified Blaney-Criddle method. The Yampa River StateCU and StateMod model datasets were used to evaluate transit losses on the Yampa River mainstem. Finally, the CRDSS datasets in all West Slope subbasins were utilized to update the Bureau of Reclamation's Colorado River Simulation System (CRSS) RiverWare model projection of future depletions in Colorado.

The development of CDSS was initiated in 1993. A funded maintenance program has been established to provide ongoing maintenance and data updates. Some of the funding and tasks for the study directly benefited the Recovery Program, as mentioned below.

V. Study Schedule: 1993 – 2023

VI. Relationship to RIPRAP:

Assess legal and physical availability of water and compact considerations associated with the protection of instream flow water rights for endangered fish and their critical habitat in the Little Snake River, the Yampa River above and below the Little Snake River, the White River, the Colorado River (mainstem), and the Gunnison River. Provide hydrology support to develop and evaluate flow augmentation alternatives for the Yampa and Little Snake Rivers. Estimate current and projected future depletions in the Colorado River mainstem above the 15-Mile Reach and Yampa Rivers in Colorado for their respective PBOs.

RIPRAP Activity Numbers:

Yampa and Little Snake Rivers: I.B.3, I.B.4., I.C.3., I.D.2.

White River: I.A.1., I.B.3, I.C., I.D., I.E.1.

Colorado mainstem: I.A.3., I.A.4., I.B.3

Gunnison River: I.B., I.C.

VII. Accomplishment of FY 2019 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

- Accounting for the 15-Mile Reach PBO was performed 2019 using the CRDSS datasets and StateCU. This accounting was peer-reviewed and is anticipated to be submitted to the Program in 2019.
- Accounting for the Yampa PBO was performed in 2019 using the CRDSS datasets and StateCU. This accounting was submitted and accepted by the Colorado River Recovery Program Water Acquisition Committee on September 6, 2019.
- The Colorado Water Plan Technical Update performed statewide scenario planning modeling, utilizing all of the CRDSS StateCU and StateMod models. Climate change datasets were created for the models, which have been released publicly.
- CRDSS datasets in all West Slope subbasins were utilized to update the Bureau of Reclamation's Colorado River Simulation System (CRSS) RiverWare model projection of future depletions in Colorado.

VIII. Recommendations:

- CWCB will continue providing funding and staff for use and maintenance of the CRDSS.
- CWCB will prepare 15-Mile Reach and Yampa PBO depletion accounting reports for the 2016-2020 period pursuant to the respective PBOs.

IX. Project Status: On track and ongoing.

X. FY 2019 Budget Status

