

## Memorandum

To: Colorado River Basin Salinity Control Advisory Council

From: Technical Advisory Group

Date: April 26, 2022

Re: TAG Recommendation to the Advisory Council Regarding Expenditure of Cost-Share Dollars for Studies, Investigations and Research

At its October 2009 meeting, the Colorado River Basin Salinity Control Advisory Council (Council) created a Technical Advisory Group (TAG) and charged it with the duty of reviewing potential funding needs and opportunities under the Basin States Program (BSP) and reporting back recommendations to the Council. The TAG provides recommendations relative to expenditure of cost-share dollars associated with the Colorado River Basin Salinity Control Program (Program). This memorandum provides recommendations regarding expenditure of cost-share dollars in 2023 for studies, investigations and research associated with the Program.

The 1996 amendments to the Colorado River Basin Salinity Control Act (Act) authorized up-front cost sharing, in lieu of repayment, in the Program. Since that time, the required cost share in EQIP obligations has been used to fund salinity control projects, including habitat replacement, as well as a small portion that has been used to fund research and planning studies which facilitate the implementation of the Program. The 2008 amendments to the Act specified that all future Program cost-share moneys be expended through the newly created Basin States Program (BSP). The Act further specifies that Reclamation is the fiduciary of the moneys expended under the BSP and that such expenditures are to be made in consultation with the Council.

The TAG has reviewed the following potential new studies for potential funding with BSP dollars.

### **Study 2022-01**

Name: Reassessment of hydrologic conditions and salinity loading associated with agricultural areas around Green River, Utah

Objective: The objectives of this study are to 1) assess current water quality associated with return flows from irrigated agricultural fields previously unmeasured on the east bank of the Green River; 2) to reassess water quality at a subset of sites measured and analyzed during the 2004-05 to evaluate changes in conditions since the last study; and 3) to re-evaluate the surface water and shallow groundwater hydrology related to agricultural water deliveries from canals on both the west and east bank areas of the Green River near Green River, Utah.

### Amount:

- Limited Scope sampling, seepage, and simple hydrology + internal report = \$49,000
- Full Scope sampling, 3 canal seepage, with complex hydrology + internal report = \$79,700
- Full Scope sampling, 3 canal seepage, with complex hydrology + USGS Report = \$94,700

### Study 2022-02

Name: Refined assessment of salinity loading to the Colorado River in Spanish Valley, Utah

Objective: The objectives of this study are to 1) quantify salt loading from Spanish Valley, Utah to the Colorado River at below average flows; 2) provide additional monitoring locations within the Matheson Wetlands Preserve to better characterize the relationship of the brine to the river; and 3) to evaluate the effects of freshwater depletion on the underlying brine in the valley-fill aquifer in Spanish Valley.

Amount:

Task	Cost	CRSCP	USGS	UT Coop
USGS Synoptic Investigation	\$25,000		\$10,000	\$15,000
BOR Monitoring Well Drilling (per well) x5	~ \$13,500	\$67,500		
USGS Small diameter pump test	\$50,000		\$20,000	\$30,000

- Total Cost with 5 additional monitoring wells drilled: \$120,000

### Other Studies Considered and not recommended for 2023

#### Study 2022-03

Name: Predicting future salinity loading to streams in the Upper Colorado River Basin

Objective: The principal goal of this project is to use the salinity and baseflow SPARROW models to predict future salinity loading to streams under different climate scenarios at 10,000+ stream reaches in the Upper Colorado River Basin (UCRB). Input data to the SPARROW model will include projections of future precipitation, temperature, and baseflow discharge.

Amount:

- Option 1: Modify the SPARROW UCRB salinity model to include baseflow as a source and calibrate for historical conditions, then apply future climate projections = \$150,017
- Option 2: Calibrate a new baseflow salinity model to estimate salinity loading from baseflow across the UCRB for historical conditions, then apply future climate projections = \$193,421
- Option 3: Calibrate new baseflow salinity model. Modify existing total salinity model to include baseflow salinity. Use baseflow salinity predictions under future climate as input to total salinity model under future climate = \$228,007

#### Study 2022-04

Name: Interactive Mapping for the Colorado River Basin – USGS Colorado

Objective: The USGS proposes to publish a service definition file through ScienceBase with geospatial services that can be accessed as an interactive map in ArcGIS Online (link provided on the ScienceBase page). ScienceBase is a U.S. Geological Survey (USGS) data-management platform that allows for public data sharing. ScienceBase will create an ArcGIS Representational State Transfer (REST) service for a service definition, allowing users to access the map in ArcGIS Online through a link on the ScienceBase page (for an example, see <https://doi.org/10.5066/P943BUQZ>).

Amount: \$32,000.