



Colorado River Basin Data Visualization Challenge

When: Planned Launch Summer 2017

Problem Statement: The Bureau of Reclamation plays a significant role in managing the Colorado River, including operating dams and canals to deliver water and generate power, overseeing water allocations and water use, and protecting and restoring habitat for endangered and threatened species. Management of the Colorado River is governed by numerous compacts, laws, court decisions and decrees, and regulatory guidelines collectively known as the “Law of the River”. Reclamation relies on a broad range of Colorado River Basin (CRB) data to support short-term water management and long-term planning, including data on historical, current, and projected weather and climate conditions, reservoir storage and releases, and streamflows and diversions. State and local agencies, water users, recreationists, researchers and other stakeholders and partners also rely on CRB data for a wide variety of uses. Reclamation is currently working to make CRB data open and accessible to both Reclamation and non-Reclamation users; however, better approaches to visualizing CRB data are needed to improve data exploration, analysis, interpretation, and communication by internal and external users. In particular, better visualization approaches are needed to improve understanding and communication of current and projected conditions in the basin and the water management actions that affect those conditions.

The Solution We Seek: Reclamation seeks innovative, interactive, and user-driven visualizations to improve understanding of past, current, and projected conditions in the CRB and to support analysis and decision making by internal and external users. Successful solutions will include one or more of the following elements:

- Integrated visualization of multiple CRB data types, including time series data, geospatial data, infrastructure data (e.g., reservoir capacity), and other relevant data types
- User-driven visualization of selected datasets and/or time periods, including custom combinations of water operations, water accounting, and related datasets over historical, current and forecast time periods
- Interactive visualization of CRB data and ancillary information on water management, such as key elements of the Law of the River; information on infrastructure and facilities; glossary of water management terms; and existing websites, documents, and reports on water management in the CRB.

Potential Impacts of a Successful Solution: Successful development of innovative, interactive, and user-driven visualizations of CRB data will facilitate improved data analysis and decision making by Reclamation and non-Reclamation users. Integrated visualization of CRB data and ancillary information will improve interpretation and understanding of basin conditions, management actions that affect those conditions, and legal and regulatory factors that influence management actions. Reclamation anticipates implementing the winning solution(s) as part of a new web-based data analysis and visualization tool; a successful solution will help to make this tool a common platform for communication and collaboration between Reclamation and CRB stakeholders and partners.

Prize Competition Scope: This prize competition will focus on developing innovative approaches to visualizing CRB data to support data exploration, analysis, interpretation and decision making by Reclamation and external non-Reclamation users.

Collaborators:



<https://www.usbr.gov/research/challenges/dataviz.html>