



## Exploring an Interagency Geomorphic Data Exchange Portal – Developing Demonstrations of Data Storage and Sharing

### Description

Access to river and reservoir bathymetry and geomorphology data is frequently identified as a critical need across multiple agencies and academia. Many of these entities collect and store bathymetry and geomorphology data in various formats and have developed disparate tools for synthesizing and visualizing the data. These data are needed to make water resources management decisions in river restoration, resource protection, infrastructure design, sustainability, and flood risk reduction. Representatives from multiple agencies and academic institutions have created a workgroup to scope the development of a searchable, georeferenced Geomorphology Data Exchange Portal.

At the direction of USGS and USACE leadership, this project team will examine many of the best data dissemination interfaces available, identify those that can be used as-is or with minimal modification to meet the goals of sharing geomorphic data and develop multiple stand-alone demos for increasing access to the data, improving visualization of data, and/or allowing more consistent cross-agency storage of data.

The long-term vision of the project would be to develop connections among these databases and create a web-based data portal as a single data access point with map based navigation. Realization of that goal will start with identifying the level of effort required, and that level will be partially determined by understanding what existing tools can be leveraged.

### Issue/Challenge To Address

Through an initial discovery effort during FY19, it is clear that each Federal and State agency has their own level of investment in data archiving and sharing. The USGS has data sharing as a core mission, while USACE and Reclamation have historically collected data to meet specific project needs with minimal effort expended on archiving and sharing those data.

It is not practical to suggest a single database with multi-agency data standards and loading procedures. The amount of available data alone makes this not realistic, without ignoring an extensive set of data management and sharing tools that have been developed over the past few decades, and are now institutionalized in each agency. A more reasonable approach is to review the types of data that are available, identify which data would provide the most value to multiple agencies and institutions, and identify modifications and revisions to existing tools to better share those data.

The USGS has multiple data archiving and sharing platforms, Reclamation is beginning to start a centralized database for river restoration projects, NRCS shares numerous environmental quality datasets, and USACE has been working on tools for navigation and dredging surveys, gridded terrain data, and reservoir storage data sharing. Buried within this collection are a number of effective tools mixed with an abundance of lessons learned from tools that did not reach their potential.

### Successes Lessons Learned

The Geomorphology Data Exchange Portal Brainstorming/Scoping Meeting was held April 30-May 1, 2019, and hosted by the US Bureau of Reclamation in Lakewood, CO. Nineteen persons represented six Federal agencies and four academic institutions. The outcomes of the workshop were developed into a white paper and presentation to be presented by Molly Wood and Paul Boyd to USGS/USACE leadership in Q4-FY19.



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Sharing**

The interagency team has also leveraged the USGS Community for Data Integration as a way to share ideas. The team currently has dedicated space, and a Wiki group for exchange of ideas.

**Projected Benefits  
Cost Savings  
Value Added**

Data sharing across agencies will extend beyond any one region or watershed. Initially, two watersheds will be selected for the demos. For each watershed, a common set of data (likely data types that are identified as highest priority by the project team, such as channel bathymetry) will be identified and shared. Eventually the envisioned data structure and connections will allow for geo-referenced data from any location.

**Expected Products**

- Development of common data standards and multiple tool demos for a portal
- Second Generation White Paper and Joint Agency Presentation
- RSM IPR Briefing on the demo development

**Stakeholders/Users**

Engineers, Planners, Managers with Federal Agencies initially, eventually public access

**Leveraging  
Opportunities**

Both the US Geological Survey (USGS) and the Bureau of Reclamation (Reclamation) have participated in the FY19 activities, including planning calls, and the May 2019 workshop. USGS has been funded for an FY20 project where they will develop demos in the Delaware River basin (R&D focus watershed for USGS). Their proposal has identified USACE tools eHydro and the Cross-Section Viewer as possible platforms for displaying river cross-section bathymetry collected by the USGS as part of routine stream flow measurements. Reclamation has been funded for participation in the team and develop parallel demos in their RISE database. The combined support will allow the interagency to collaborate on demos and products the meet the goals of multiple agencies.

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**Participating Partners**

US Bureau of Reclamation  
Sedimentation and River Hydraulics Group  
Technical Service Center  
Lakewood, CO  
<https://www.usbr.gov/tsc/tscorganization/8200.html>

US Geological Survey  
Water Resources Mission Area  
<https://www.usgs.gov/mission-areas/water-resources>