



# Hydrographic Survey

accurate.  
innovative.  
responsive.

**AYRES**  
ASSOCIATES

# precise.

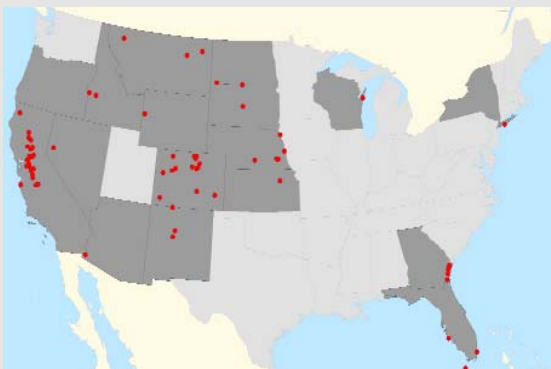
## services

- Channel bathymetry and mapping
- Reservoir, lake, and pond mapping
- Cross sections and monitoring transects
- Design level hydrography
- GPS-inhibited or access-limited hydrography
- Profile/thalweg survey
- Water surface elevations
- Water surface profiles
- Merged bathymetry and topography mapping



We *understand* the end use of hydrography data because we are also hydraulic engineers.

## Previous project locations



## river and channel survey

Ayres Associates has more than 20 years of experience performing hydrographic surveys on rivers and channels, including 2-foot contour mapping of more than 600 miles of river in the Sacramento and San Joaquin River Systems in California. From basic cross-section surveys and water surface or thalweg profiles to design level 1-foot contour mapping, Ayres Associates has the experience and expertise.



## reservoirs, lakes, and ponds

Ayres Associates has performed hydrographic surveys on large reservoirs such as Fort Peck Lake, Montana, and Lake Oahe, South Dakota, as well as smaller, more difficult to access lakes and ponds for use in monitoring sedimentation or volume calculations.



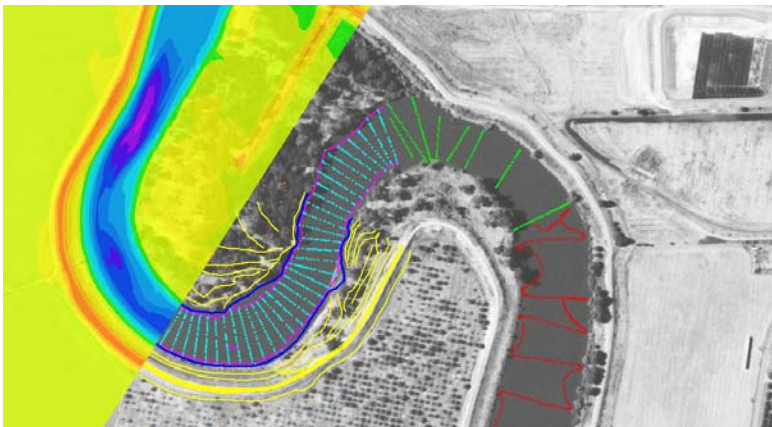
## shallow and difficult access areas

Ayres Associates is known for our ability to perform surveys in shallow and near-inaccessible areas where traditional boats or even GPS cannot be used, such as the Truckee River, Nevada, the Platte River, Nebraska, the Dolores River, Colorado, and the outlet to Pueblo Dam, Colorado.



## seamless bathymetry and topography

Ayres Associates is a nationally recognized firm in the areas of hydraulic analyses, bridge scour, and river engineering, so we understand the end goal of hydrography data. Because of this, we pay close attention to how the data is collected in the field so that we correctly represent the hydraulics and/or specific bottom features that are of interest. We don't just deliver raw survey points but have developed a unique method for processing river channel data to appropriately account for bends in a river. We can then merge the bathymetric and topographic data to generate a seamless DTM.



## data application

Hydraulic modeling

Bridge design/scour

Flood studies

Habitat analysis

Reservoir/lake/pond  
volume and/or sedimentation

Historical cross-section comparison

Geomorphologic analysis

Levee design and repair

Bank protection design

River restoration

Our state of the art **equipment**, such as Leica GPS and Robotic TPS systems, survey grade depth sounders, and ruggedized laptops, provides **accurate** and **reliable** data to suit your needs.



With more than 20 years of experience and history, we have the **know-how** and equipment to meet the needs of a large variety of site conditions.

# AYRES ASSOCIATES

Ayres Associates is a nationwide professional consulting firm providing services in photogrammetry, digital mapping, LiDAR, and GIS; surveying; civil, structural, transportation, river, wastewater, and water resources engineering; environmental science; real estate; planning; and architecture. We have assisted public and private clients since 1959. Our offices are located in the Midwest, West, and Southeast regions of the U.S.

## REGIONAL OFFICES

### West Region

Phoenix, AZ  
Sacramento, CA  
Denver, CO  
Fort Collins, CO  
Cheyenne, WY

### Midwest Region

Duluth, MN  
Eau Claire, WI  
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Madison, WI  
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