



# Hydrographic Survey Program

## What is the Hydrographic Survey Program?

The Hydrographic Survey Program was created in 1991, when the Texas Legislature authorized the Texas Water Development Board (TWDB) to develop a non-profit, self-supporting, reservoir volumetric survey program. The rules governing the Hydrographic Survey Program can be found in the Texas Administrative Code, Title 31, Chapter 377, and the Texas Water Code, Chapter 15, Subchapter M. The Texas Water Code authorizes the TWDB to perform surveys to determine reservoir storage capacity, sedimentation levels, rates of sedimentation, and projected water supply availability. Since the first volumetric survey in 1992, the TWDB has been providing accurate and affordable services for determining current and future reservoir storage capacities.

As of February 2019, the TWDB's Hydrographic Survey Program has completed 182 hydrographic surveys on 113 unique reservoirs. This includes 105 of the 188 major water supply reservoirs listed in the 2017 State Water Plan and 88 of the 114 reservoirs reported in the TWDB's monthly Texas Water Conditions Report. These 114 reservoirs represent 96 percent of the total conservation storage capacity of the major water supply reservoirs in Texas. By definition, a major reservoir has a conservation storage capacity of 5,000 acre-feet or greater.

## Why is hydrographic surveying important?

Over time, reservoirs lose capacity due to sedimentation. With increased water demand from population growth, accurate reservoir capacity and capacity loss rates are crucial Texas water planning elements. State, regional, and local water planners use this information to help develop regional and state water plans that guide the development and use of water supplies to meet Texans' present and future needs, especially during times of drought.

## What equipment is used to do the surveys?

The TWDB's survey fleet consists of multiple vessels to handle all reservoir conditions. Each can be equipped with a range of survey equipment, including a depth sounder integrated with Differential Global Positioning System (DGPS) equipment. GIS software is used to develop products such as current elevation-area-capacity tables and contour and elevation relief maps.

A multi-frequency (200 kHz, 50 kHz, and 24 or 12 kHz) depth sounder collects bathymetry and sediment data, including thickness and location. Sediment core samples are correlated with the acoustic data to identify the pre-impoundment surface.

Identification of the pre-impoundment surface enables verification of initial reservoir capacity, thereby providing better estimates of long-term sedimentation rates. Estimates of total sediment volume can aid lake owners in determining long-term reduction in reservoir yield and/or planning necessary dredging operations. The multi-frequency depth sounder used in conjunction with GPS and GIS technology significantly improves Texas' ability to plan for and meet its future water resource needs.

## How can I request a hydrographic survey?

Information about the Hydrographic Survey Program, as well as data from completed surveys, is available at [www.twdb.texas.gov/surfacewater/surveys/index.asp](http://www.twdb.texas.gov/surfacewater/surveys/index.asp).

For general questions, contact: [Hydrosurvey@twdb.texas.gov](mailto:Hydrosurvey@twdb.texas.gov).

For all other questions, including contracting and surveying information, contact:

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