

**TO:** Board Members

**THROUGH:** Jeff Walker, Executive Administrator  
Robert E. Mace, Ph.D., P.G., Deputy Executive Administrator, Water Science and Conservation  
Les Trobman, General Counsel  
Chris Hayden, Director, Budget

**FROM:** Nathan Leber, Hydrologist, Hydrographic Survey Program

**DATE:** September 8, 2016

**SUBJECT:** Rate Schedule for the Hydrographic Survey Program

**ACTION REQUESTED**

Consider approving a revised rate schedule for the Hydrographic Survey Program.

**BACKGROUND**

The 72<sup>nd</sup> Texas Legislature in 1991 authorized the Texas Water Development Board (TWDB) to create the Hydrographic Survey Program, whose purpose is to conduct reservoir volumetric surveys (Texas Water Code §15.804). The program was established with initial funding of \$425,000 from the Water Assistance Fund and was created as a user-fee supported activity, with the survey fees based on a standard rate schedule. TWDB administrative rules for the Hydrographic Survey Program, found in 31 Texas Administrative Code Chapter 377, were adopted effective April 3, 1992, and are amended periodically, as necessary. Since the inception of the program over 165 reservoir surveys have been conducted across Texas, providing crucial information needed to estimate the rates at which reservoir storage capacity in Texas is being lost due to sediment deposition.

The number of reservoirs for which survey data is collected in a given year fluctuates and is affected by drought and other factors, but the program’s goal is to collect data for at least seven reservoirs per year. Data was collected for six reservoirs in Fiscal Year 2013, six reservoirs in Fiscal Year 2014, and five reservoirs in Fiscal Year 2015. Eight reservoirs have been surveyed in Fiscal Year 2016 with one additional reservoir currently being surveyed. Three reservoirs are in various stages of the contracting process for Fiscal Year 2017. Attachment A lists recently completed, ongoing, and scheduled surveys. Attachment B provides a financial summary of the

Hydrographic Survey Program for Fiscal Year 2012 through Fiscal Year 2016 (as of September 7, 2016).

The rate schedule is reviewed at least once every two years by the Executive Administrator and presented to the Board for approval. The rate schedule was last changed in August 2012 and was reapproved at the same rate in August 2014. TWDB rules require that the rate schedule allow the Board to adequately recover costs necessary to conduct the program, including capital equipment costs, operating expenses, and personnel salaries. Capital items such as boats, motors, trucks, and surveying equipment are used heavily by the program and require replacement approximately every five to 10 years. One goal of the program is to maintain sufficient program balances to allow these purchases when needed.

The current rate schedule is based on the following equation:

$$\text{Base Rate} = (\$1.15 \cdot \text{Area}) - (\$0.0000016 \cdot \text{Area}^2) + \$20,500$$

where:

*Area* is the area of the reservoir in acres at conservation pool elevation

*Base Rate* is the charge for a survey, in dollars

For multi-frequency acoustic surveys to measure sedimentation in a reservoir, the current rate is an additional charge of 35 percent of the base rate plus a flat \$6,000 fee to cover costs associated with sampling sediment cores. The current rate also includes the ability to charge customers an additional \$400 per person per day for office work and \$800 per person per day for field work for extra tasks requested by the customer, as long as tasks or work relate to the hydrographic survey and are consistent with the rules in 31 Texas Administrative Code Chapter 377 and Texas Water Code §15.804.

### **KEY ISSUES**

The Executive Administrator recommends the following proposed increase in the rate schedule for conventional hydrographic surveys:

$$\text{Base Rate} = (\$1.40 \cdot \text{Area}) - (\$0.0000024 \cdot \text{Area}^2) + \$23,500$$

The proposed increase in the *Base Rate* is affected by several changes. First, the multiplier of -0.0000024 was decreased from -0.0000016 to ensure that overall cost increases remain within 14 to 18.5 percent of existing costs. Second, an increase of \$0.25 per acre (from \$1.15 to \$1.40 per acre) and third, a \$3,000 per survey increase to the flat fee (from \$20,500 to \$23,500), as shown in the equation above, will help to offset increasing costs for repair and maintenance of aging equipment, fuel, *per diem*, and hotel rates. Additionally, the increase will help to build program balances to sufficient levels to cover the replacement of large capital expenditures when needed by the Hydrographic Survey Program.

The Executive Administrator recommends no change to the fee structure for conducting a multi-frequency acoustic survey to measure sedimentation. The Executive Administrator also recommends no change to charges for office work and field work.

A graphical comparison of the current and proposed rate schedule for conventional hydrographic surveys is shown in Attachment C. The proposed rate schedule better captures the recovery of costs associated with surveying larger reservoirs. Attachment D provides information on the cost increase and associated percent increase in cost for representative reservoir sizes. The largest percent cost increase is just over 18 percent for reservoirs in the 22,000 to 62,000 acre-size range. The smallest and largest sized reservoirs (in acres) would see approximately a 14 percent cost increase per survey. Historically, 52 percent of reservoirs surveyed by the Hydrographic Survey Program have been less than 5,000 acres in size suggesting that most future customers will see a 14 to 16 percent cost increase for surveys. Less than five percent of surveys conducted by the Hydrographic Survey Program have been larger than 40,000 acres.

Surveys already contracted or in negotiation for Fiscal Year 2017 will not be affected by this increase.

### **RECOMMENDATION**

Approve the revised rate schedule for the Hydrographic Survey Program.

This recommendation has been reviewed by legal counsel and is in compliance with applicable statutes and Board rules.

Attachment A: Recently Completed, Ongoing, and Scheduled Hydrographic Surveys for Fiscal Years 2013–2017

Attachment B: Financial Summary of the Hydrographic Survey Program for Fiscal Years 2012–2016

Attachment C: Current and Proposed Hydrographic Survey Program Rate Schedule

Attachment D: Conventional Hydrographic Survey Cost Increase and Percent Increase in Cost for Selected Reservoir Sizes under the Proposed Rate Schedule

### Attachment A

Recently Completed, Ongoing, and Scheduled Hydrographic Surveys for Fiscal Years 2013–2017

| Fiscal Year      | Name                   | Status                      |
|------------------|------------------------|-----------------------------|
| Fiscal Year 2013 | Lake Tyler             | Complete                    |
|                  | Granger Lake           | Complete                    |
|                  | Lake Diversion         | Complete                    |
|                  | Lake Brownwood         | Complete                    |
|                  | Lake Arrowhead         | Complete                    |
|                  | Lake Kickapoo          | Complete                    |
| Fiscal Year 2014 | Lake Winters           | Complete                    |
|                  | Elm Creek Reservoir    | Complete                    |
|                  | Lake Olney             | Complete                    |
|                  | Lake Cooper            | Complete                    |
|                  | Aquilla Lake           | Complete                    |
|                  | Martin Lake            | Complete                    |
| Fiscal Year 2015 | Bachman Lake           | Complete                    |
|                  | White Rock Lake        | Complete                    |
|                  | Lake Cherokee          | Complete                    |
|                  | Lake Granbury          | Report in client review     |
|                  | Lake Ray Hubbard       | Report in client review     |
| Fiscal Year 2016 | Lake Corpus Christi    | Report in progress          |
|                  | Lake Leon              | Complete                    |
|                  | Lake Mineral Wells     | Report in client review     |
|                  | Lake Nimitz            | Report in client review     |
|                  | Belton Lake            | Report in progress          |
|                  | Lake Georgetown        | Report in progress          |
|                  | Bryan Utilities Lake   | Complete                    |
|                  | Stillhouse Hollow Lake | Report in progress          |
|                  | Possum Kingdom Lake    | Data collection in progress |
| Fiscal Year 2017 | Cedar Creek Reservoir  | Contract Executed           |
|                  | Calaveras Lake         | Contracts in negotiation    |
|                  | Braunig Lake           | Contracts in negotiation    |

## Attachment B

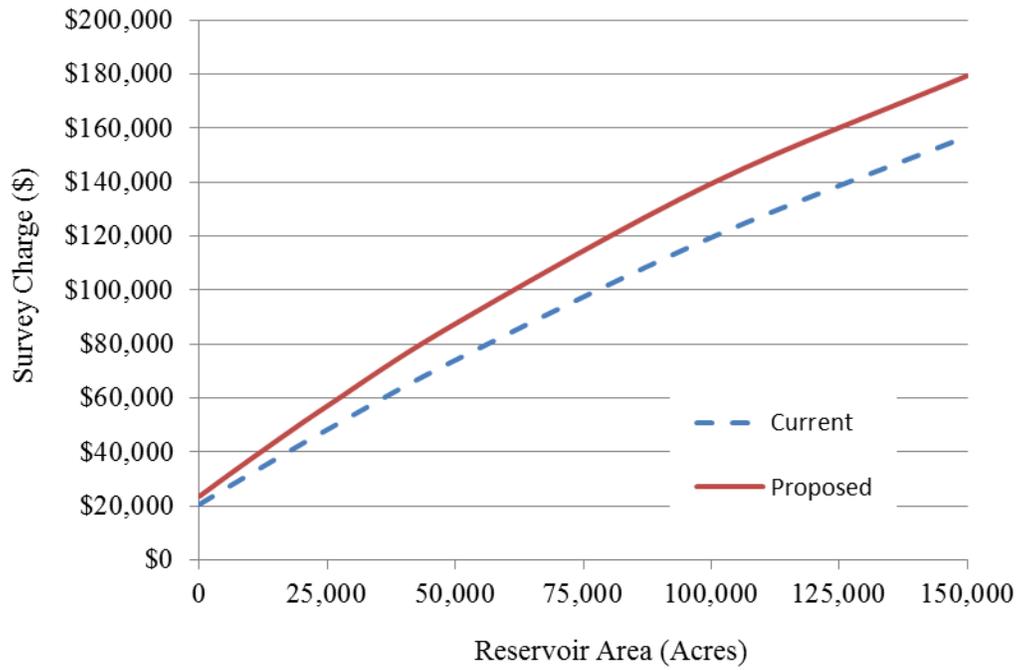
### Financial Summary of the Hydrographic Survey Program for Fiscal Years 2012–2016

|                       | <b>Fiscal Year<br/>2012</b> | <b>Fiscal Year<br/>2013</b> | <b>Fiscal Year<br/>2014</b> | <b>Fiscal Year<br/>2015</b> | <b>Fiscal Year<br/>2016*</b> |
|-----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|
| Beginning<br>Balance  | \$92,231.49                 | \$231,428.76                | \$196,558.45                | \$194,804.22                | \$54,335.79                  |
| Total Revenue         | \$418,532.76                | \$213,713.62                | \$278,828.50                | \$282,178.18                | \$300,502.25                 |
| Total<br>Expenditures | \$279,335.49                | \$248,583.93                | \$280,582.73                | \$422,646.61                | \$279,385.98                 |
| Ending<br>Balance     | \$231,428.76                | \$196,558.45                | \$194,804.22                | \$54,335.79                 | \$75,452.06                  |

\*As of September 7, 2016

### Attachment C

Current and Proposed Hydrographic Survey Program Rate Schedule



### Attachment D

Conventional Hydrographic Survey Cost Increase and Percent Increase in Cost  
for Selected Reservoir Sizes under the Proposed Rate Schedule

| <b>Acres</b> | <b>Proposed<br/>Base Rate</b> | <b>Current<br/>Base Rate</b> | <b>Cost<br/>Increase</b> | <b>Percent<br/>Increase in<br/>Cost</b> |
|--------------|-------------------------------|------------------------------|--------------------------|---|
| 0            | \$ 23,500                     | \$ 20,500                    | \$ 3,000                 | 14.63%                                  |
| 1,000        | \$ 24,898                     | \$ 21,648                    | \$ 3,249                 | 15.01%                                  |
| 5,000        | \$ 30,440                     | \$ 26,210                    | \$ 4,230                 | 16.14%                                  |
| 10,000       | \$ 37,260                     | \$ 31,840                    | \$ 5,420                 | 17.02%                                  |
| 25,000       | \$ 57,000                     | \$ 48,250                    | \$ 8,750                 | 18.13%                                  |
| 50,000       | \$ 87,500                     | \$ 74,000                    | \$ 13,500                | 18.24%                                  |
| 100,000      | \$139,500                     | \$119,500                    | \$ 20,000                | 16.74%                                  |
| 150,000      | \$179,500                     | \$157,000                    | \$ 22,500                | 14.33%                                  |