

## AGENDA ITEM MEMO

**BOARD MEETING DATE:** November 17, 2022

**TO:** Board Members

**THROUGH:** Jeff Walker, Executive Administrator  
Ashley Harden, General Counsel  
Rebecca Trevino, Chief Financial Officer

**FROM:** Richard A. Wade, Deputy Executive Administrator, Texas Natural Resources Information System  
John T. Dupnik, P.G., Deputy Executive Administrator, Water Science and Conservation

**SUBJECT:** Nueces Bay and Upper Texas Coastal Bathymetry Project

### ACTION REQUESTED

Consider authorizing the Executive Administrator to execute multiple contracts in a total amount not to exceed \$1,000,000 through the Texas Strategic Mapping Program.

### BACKGROUND

Bathymetry is the measure of bed elevation in rivers, lakes, bays, and oceans. As the underwater equivalent of topography, bathymetry represents the three-dimensional features of underwater terrain. Bathymetry can be measured using boat-based sonar technology or remote sensing technology through specialized airborne lidar systems. Coastal bathymetric data has a range of uses for navigation, coastal and ocean science, and hydrodynamic modeling. More specifically, bathymetric data is essential for creating high-resolution grids of hydrodynamic models for a variety of different applications, such as

- coastal flood inundation and hurricane storm surge modeling,
- water planning and floodplain management and planning,
- predicting tides and currents for oil spill response, and
- environmental flow and coastal resiliency studies.

The Texas Natural Resources Information System (TNRIS) and the office of Water Science and Conservation (WSC) have partnered to acquire coastal bathymetric data for Texas.

#### Our Mission

Leading the state's efforts in  
ensuring a secure water future  
for Texas and its citizens

#### Board Members

Brooke T. Paup, Chairwoman | George B. Peyton V, Board Member  
Jeff Walker, Executive Administrator

TNRIS will procure services through the Texas Strategic Mapping Program and their associated contracts at the Texas Department of Information Resources. As an end user of the bathymetric data, WSC will provide technical and administrative support throughout the life of the project.

**KEY ISSUES**

Contract services will support a coastal bathymetry project that will target data collection for an area of approximately 30 nautical square miles in Nueces Bay, located between San Patricio and Nueces Counties, and potentially additional locations along the upper Texas coast. Bathymetric data acquired through this project will be used to improve the accuracy of new, three-dimensional coastal hydrodynamic models for Nueces Bay and coastal water bodies along the coast. These models will be used in coastal inundation and hurricane storm surge simulations, regional flood planning, and coastal resiliency studies. Further, this project will inform how models can be developed and improved in other areas of the Texas coast.

TNRIS and WSC will leverage multiple funding sources for this project, including

- floodplain Management Account (within the Texas Infrastructure Resiliency Fund) in an amount not to exceed \$500,000, and
- Texas Strategic Mapping Program funds in an amount not to exceed \$500,000.

The total project cost will be determined through competitive bids and will not exceed \$1,000,000.

**RECOMMENDATION**

The Executive Administrator recommends the execution of multiple contracts in a total amount not to exceed \$1,000,000 through the Texas Strategic Mapping Program.