Texas Water Development Board

P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

TO: Board Members

THROUGH: Jeff Walker, Executive Administrator
John T. Dupnik, P.G., Deputy Executive Administrator, Water Science and Conservation
Ashley Harden, General Counsel
Rebecca Trevino, Chief Financial Officer

FROM: Mark W. Wentzel, Ph.D., Manager, River Science

DATE: August 17, 2020

SUBJECT: Water Resources Investigations with the U.S. Geological Survey

ACTION REQUESTED

Consider authorizing the Executive Administrator to negotiate and execute a contract in an amount not to exceed $2,085,169 (including $1,721,434 from the Texas Water Development Board) for continuation of the Water Resources Investigations data collection program with the U.S. Geological Survey in Fiscal Year 2021.

BACKGROUND

Water data is the foundation upon which Texas builds its water plans, protects against flood risk, and manages water resources. Adequate data is needed to understand how much water is available for current and future use or how drought, flood, or other factors may affect water use and environmental resources. The first U.S. Geological Survey streamflow gage in Texas was installed 131 years ago on the Rio Grande near El Paso. The State-Federal Cooperative Program for Water Resources Investigations started shortly thereafter with the first jointly-funded gage being installed in 1915. The U.S. Geological Survey and funding partners currently maintain a network of 662 streamflow and 152 lake level gages providing near real-time data across the state.

Each year the Texas Water Development Board (TWDB) enters into a contractual agreement with the U.S. Geological Survey to cover the cost of data collection for a portion of the statewide network (Table 1). Gages included in this agreement collect data for one of two primary purposes: water resources monitoring and planning or flood forecasting and warning. Each year, the U.S. Geological Survey contributes some funding toward the cost of stream and lake level gages for water resources monitoring and planning but does not provide cost share related to gages that are primarily for flood forecasting and warning.

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

Board Members
Peter M. Lake, Chairman | Kathleen Jackson, Board Member | Brooke T. Paup, Board Member
Jeff Walker, Executive Administrator

In Fiscal Year 2020, the TWDB partnered with the U.S. Geological Survey to operate and maintain 99 streamflow and 39 lake level gages (Table 1). These totals include 53 streamflow and 35 lake level gages for water resources monitoring and planning, which is consistent with our support for this purpose for many decades. Totals also include 46 streamflow and 4 lake level gages for flood forecasting and warning, an aspect of our water resources gaging program that began in Fiscal Year 2016 and continued expanding through Fiscal Year 2020 with the installation of 5 new streamflow and 1 lake level gage. Locations of new gages were selected in consultation with the U.S. Geological Survey and National Weather Service from a list of the 42 highest priority locations identified in a study completed in December 2016 (TWDB Contract Number 1600012027).

In Fiscal Year 2019, the U.S. Geological Survey began charging for the operation and maintenance of precipitation gages collocated with some stream and lake level gages. In some areas of the state, U.S. Geological Survey rain gage data is the only source of suitable data to validate satellite and weather radar rainfall estimates. The National Weather Service uses data from all three sources (rain gage, weather radar, and satellite) to develop the most accurate estimates of rainfall used in flood forecasting and warning. In Fiscal Year 2020, the TWDB funded a total of 45 rain gages, 28 collocated with water resources monitoring and planning gages and 17 collocated with flood forecasting and warning gages.

Total cost of the Water Resources Investigation program in Fiscal Year 2020 was $2,104,719, with the U.S. Geological Survey contributing $363,735 and the TWDB contributing $1,482,984 from General Revenue funds and $258,000 from the Floodplain Management Account within the Texas Infrastructure Resiliency Fund.

KEY ISSUES

The Executive Administrator proposes to continue the Water Resources Investigations contract with the U.S. Geological Survey for Fiscal Year 2021. A portion of that contract will cover operation and maintenance for 53 streamflow and 35 lake level gages that provide data for water resources monitoring and planning (Table 1). Total costs associated with this objective will be $1,019,749. The U.S. Geological Survey will contribute $363,735, and the TWDB will contribute the remaining $656,014 from General Revenue funds.

A second portion of the contract will support flood warning and forecasting. The U.S. Geological Survey does not have cost-share funds to contribute to these gages. During Fiscal Year 2021, the TWDB will provide $1,065,420 to install 4 new streamflow gages and to cover operation and maintenance costs for a partial year associated with these new gages and for full year operation and maintenance costs for 51 existing streamflow, 5 lake level, and 45 rain gages (Table 1). These funds will be provided from General Revenue funds ($807,420) and from the Floodplain Management Account within the Texas Infrastructure Resiliency Fund ($258,000). New gages installed in Fiscal Year 2021 will be selected from a list of the 42 highest priority locations identified in the study completed in December 2016 (TWDB Contract Number 1600012027) and in consultation with the U.S. Geological Survey and National Weather Service.

The total cost of the FY21 Water Resources Investigations contract will be $2,085,169, with $363,735 provided by the U.S. Geological Survey and the remaining $1,721,434 provided by the TWDB.

RECOMMENDATION

The Executive Administrator concludes that the Joint Funding Agreement with the U.S. Geological Survey for Water Resources Investigations furthers the objectives of Texas Water Code §16.012 for statewide water resources data collection and dissemination and §16.453 for collection of flood related information and recommends approval of this request.

Attachment: Table 1. Summary of Water Resources Investigation program for fiscal years 2020 and 2021.

Table 1. Summary of Water Resources Investigation program for fiscal years 2020 and 2021.

			Number of gages			Funding			
						USGS cost share	TWDB		
Fiscal year	**Objective**	**Service**	**Stream-flow**	**Lake level**	**Rain**		**General Revenue**	**Floodplain Mgmt. Account**	**Total by objective**
2020	Water resources data	Operation and maintenance	53	35		$363,735	$656,014		$1,019,749
	Flood forecasting and warning	Installation	5	1			$334,650		
		Operation and maintenance	46	4	45		$492,320	$258,000	$1,084,970
								Total	**$2,104,719**
2021	Water resources data	Operation and maintenance	53	35		$363,735	$656,014		$1,019,749
	Flood forecasting and warning	Installation and partial year operation and maintenance	4				$223,100		
		Operation and maintenance	51	5	45		$584,320	$258,000	$1,065,420
								Total	**$2,085,169**