

**TO:** Board Members

**THROUGH:** Kevin Patteson, Executive Administrator  
Robert E. Mace, Ph.D., P.G., Deputy Executive Administrator, Water Science & Conservation  
Les Trobman, General Counsel

**FROM:** Cindy Ridgeway, Manager, Groundwater Availability Modeling

**DATE:** March 10, 2016

**SUBJECT:** Proposed research projects for Groundwater Availability Modeling Program grants

## **ACTION REQUESTED**

Consider authorizing the Executive Administrator to publish a notice in the Texas Register for requests for qualifications for three groundwater availability model projects in an amount not to exceed \$1,440,000.

## **BACKGROUND**

In 2001 the Texas Legislature mandated that the Texas Water Development Board (TWDB) obtain or develop groundwater availability models for all major and minor aquifers in Texas in coordination with groundwater conservation districts and regional water planning groups (Texas Water Code Section 16.012). The Groundwater Availability Modeling Program has completed groundwater availability models for all 9 of the state's major aquifers and 13 of the state's 21 minor aquifers. The remaining minor aquifers are scheduled to be completed using in-house and contracted resources within the next five years.

The Groundwater Availability Modeling Program grant funds have been used to develop groundwater availability models, upgrade the original models, and conduct other research to improve models that are key to the ongoing groundwater management programs. An important component of the modeling program includes stakeholder participation that encompasses data collection, conceptualization of groundwater flow, model development, and the opportunity for public review of reports, data, and models. All model-related projects have at least three public meetings to encourage stakeholder participation, to relay updates on the progress of the project, to help explain how the model is assembled, and to answer any questions.

## **KEY ISSUES**

Currently available funding for Groundwater Availability Modeling Program projects in fiscal years 2016 and 2017 totals \$1.44 million. The Executive Administrator requests authorization to publish a

<p style="text-align: center; color: #0070C0;">Our Mission</p> <p>To provide leadership, information, education, and support for planning, financial assistance, and outreach for the conservation and responsible development of water for Texas</p>	<p>⋮</p> <p>⋮</p> <p>⋮</p> <p>⋮</p> <p>⋮</p> <p>⋮</p> <p>⋮</p>	<p style="text-align: center; color: #0070C0;">Board Members</p> <p>Bech Bruun, Chairman   Kathleen Jackson, Member   Peter Lake, Member</p> <p>Kevin Patteson, Executive Administrator</p>
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request for qualifications notice for three projects, select the most qualified firm for each project, and then present the top-ranked candidates to the Board before proceeding to negotiate contracts.

The three research projects have been identified for funding after reviewing current groundwater availability models; considering input from various groundwater stakeholders during various meetings and phone conversations; and evaluating groundwater needs of regional water planning groups (Table 1). The three proposed projects provide resources needed in joint planning and regional water planning, as well as providing a greater understanding of the effects of pumping.

**Table 1. Proposed Research Projects for Groundwater Availability Modeling Program grants.**

Name	Description	Estimated Cost	Stakeholders/ Interested Parties
1. Identify the vulnerability of major and minor aquifers of Texas to subsidence	Per Texas Water Code (§36.0015), one of the purposes for the creation of groundwater conservation districts is to control land subsidence caused by withdrawal of water. Recommendations from the final project report will inform stakeholders about appropriate monitoring and predictive tools to manage aquifers vulnerable to subsidence.	\$285,000	Groundwater conservation districts, groundwater developers, and consumers that use subsidence prone aquifers.
2. Conceptual model for extending the groundwater availability model for the Hill Country portion of the Trinity Aquifer to include all of Groundwater Management Area 9 and the portion of the Trinity Aquifer that underlies the Edwards (Balcones Fault Zone) Aquifer	Interest in the Trinity Aquifer that underlies the Edwards (Balcones Fault Zone) Aquifer has grown in recent years. This project will collect, analyze, and interpret available data related to this portion of the Trinity Aquifer including flows between the Trinity and Edwards (Balcones Fault Zone) aquifers and flows across the Balcones Fault Zone. The project will also investigate and recommend an appropriate boundary to the west of Groundwater Management Area 9 so future updates to the current model will include all of Groundwater Management Area 9.	\$355,000*	Barton Springs/ Edwards Aquifer Conservation District and other groundwater conservation districts, groundwater management areas 9 and 10, counties in the area, groundwater developers, and consumers.
3. Update the existing groundwater availability model for the northern portion of the Queen City, Sparta, and Carrizo-Wilcox aquifers	Focus will be on the groundwater availability model for the northern portion of the Queen City, Sparta, and Carrizo-Wilcox aquifers—mainly located in Groundwater Management Area 11. The model will be extended to more recent times and will incorporate relevant groundwater data collected since the last update in 2005.	\$800,000	Regional water planning groups, groundwater conservation districts in East Texas, groundwater developers, and consumers.

\*Political subdivisions in the study area have expressed interest in the proposed project and may contribute additional funding related to specific work scope or data requirements.

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**RECOMMENDATION**

The Executive Administrator recommends approval of this item.

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