



Improving Groundwater Availability Models

a statement of support from Texas Alliance of Groundwater Districts

Recognized by the Texas Legislature in 1997, **water – more than any other natural resource – challenges the State’s future.** Increasing reliance on groundwater resources to meet the State’s demands emphasizes the need to better understand groundwater budgets and aquifer dynamics. As the Texas Legislature considers various important funding needs, **the Texas Alliance of Groundwater Districts (TAGD) encourages legislators to consider supporting the allocation of funding for the improvement of Groundwater Availability Models (GAMs).**

With rising groundwater demands, it is important to be able to quantify how much groundwater is available for production. Unlike oil production, where the primary objective is to produce all available oil from the reservoir, groundwater production is often limited by complex aquifer dynamics, localized drawdown on aquifer levels, and the possibility for adverse environmental impacts. Those impacts can include streamflow reduction, water-quality degradation, and land subsidence (A.R. Dutton, et al. 2012). As such, greater emphasis should be placed on improving scientific data that monitors the effects of groundwater production and aquifer characteristics. Important characteristics include transmissivity, storage, and sustainability, along with streamflow data, potentiometric-surface, recharge, drought, and groundwater modeling.

The State’s water planning process is comprised of Groundwater Management Areas (GMAs) and Regional Water Planning Groups (RWPGs). GMAs are composed of local Groundwater Conservation Districts (GCDs), and are statutorily tasked with planning groundwater availability through the determination of Desired Future Conditions (DFCs). The DFC process is cooperatively financed by GCDs within a GMA, using local taxes and fees collected by districts. Once adopted, DFCs are used by the Texas Water Development Board (TWDB) to calculate the Modeled Available Groundwater (MAG). The MAG is a planning number used to assess groundwater availability, and is utilized by both GCDs and RWPG’s in planning for Texas’ future. RWPGs are funded by the State, and rely on Groundwater Availability Models (GAMs).

Appropriately funded Groundwater Availability Models are essential to Texas’ ability to meet long term needs. Equally important is funding scientific projects at the GMA level that gather and analyze field data, and that improve the predictability of the models. Improved GAMs could affect:

- Quantification of groundwater production impacts on aquifer systems such as aquifer storage, flow systems, and effects on groundwater quality
- Characterization of hydrogeologic connectivity between groundwater and surface water

TAGD supports efforts to allocate additional funding for improved Groundwater Availability Models, as well as opportunities for Groundwater Management Area financial assistance.