What is a Groundwater Management Area (GMA)?

The Texas Water Development Board (TWDB) designated Groundwater Management Area (GMA) boundaries in response to legislation passed in 2001. The GMAs were to cover all major and minor aquifers in the state. The objective was to delineate areas considered suitable for management of shared groundwater resources. GMAs generally coincide with the boundaries of the major aquifers in Texas, though the boundaries follow a mix of major aquifer and county boundaries. In December 2002, the TWDB designated 16 GMAs covering the entire state. All groundwater conservation districts (GCDs, also known as "districts") are included in a groundwater management area. Only one area, Groundwater Management Area 5, does not include any GCDs.

Originally, the GMAs were useful for determining which GCDs needed to coordinate in joint groundwater planning by sharing their management plans. In 2005, the Legislature changed the direction of groundwater management. The new requirements, codified in Texas Water Code Chapter 36.108, require joint planning in GMAs among GCDs. Under these requirements:

"The district representatives shall meet at least annually to conduct joint planning with the other districts in the management area and to review the management plans, the accomplishments of the management area, and proposals to adopt new or amend existing desired future conditions."

"Not later than September 1, 2010, and every five years thereafter, the districts shall consider groundwater availability models and other data or information for the management area and shall establish desired future conditions for the relevant aquifers within the management area."

This means that, rather than individual GCDs determining how much groundwater is available, the districts meet at least annually to adopt desired future conditions (DFCs). Desired future conditions are a quantitative description of the desired conditions of groundwater resources (such as water levels, spring flows, or volumes) at one or more specified future times. Desired future conditions are a broad policy goal adopted by districts in the GMA and are a precursor to developing future groundwater availability volumes, called modeled available groundwater. The DFC must be adopted by a two-thirds vote of the GCD representatives present at a GMA meeting where at least two-thirds of the GCDs are present. Both the Texas Commission on Environmental Quality (TCEQ) and the TWDB have developed processes and rules for the purpose of appealing the DFC, the joint planning process, and a district's actions.

The TWDB is responsible for providing each GCD and Regional Water Planning Group (RWPG), located wholly or partly in the GMA, with modeled available groundwater volumes. Groundwater availability models and other scientific tools are used to translate the policy decisions of desired future conditions into groundwater availability as modeled available groundwater for the relevant aquifers within the GMA. Once the modeled available groundwater is determined, the GCDs consider modeled available groundwater, among other criteria, to issue groundwater withdrawal permits consistent with the DFC of the aquifer. These permits and associated monitoring help the districts track the withdrawals to support achieving the DFC established by the GMA.

Resources and Helpful Links

1. TWDB's GMAs webpage at https://www.twdb.texas.gov/groundwater/management_areas/.

2. TWDB's GMAs map at https://geographic.texas.gov/maps.html under the "TWDB – Groundwater Management Areas (GMA)" heading.

Other Frequently Asked Questions (FAQs)

To find additional FAQs visit the Texas Groundwater Protection Committee's FAQ webpage at https://tgpc.texas.gov/frequently-asked-questions-faqs/.