The Role of Modeled Available Groundwater in Regional Water Planning

What is modeled available groundwater?

Groundwater is regulated locally by groundwater conservation districts except in locations that do not have a district. Districts may issue permits that regulate pumping of groundwater and spacing of wells within their jurisdictions. Multiple districts within a single groundwater management area determine the desired future conditions of relevant aquifers within that area. (Desired future conditions are the desired, quantified conditions of groundwater resources, such as water levels, water quality, spring flows, or volumes, at a specified time or times in the future or in perpetuity.) TWDB staff then translate those desired future conditions into modeled available groundwater values using the groundwater availability models (or other approaches if a groundwater availability model is not applicable). A modeled available groundwater value is the amount of groundwater production, on an average annual basis, that will achieve a desired future condition. The desired future condition in a specific location may not be achieved if pumping quantities exceed the modeled available groundwater volume over a long term.

How are modeled available groundwater volumes used in the regional water plans?

Regional water plans consider the volume of groundwater that is anticipated to be actually pumped during a drought in any planning decade. Texas Water Code requires that regional water plans be "consistent with the desired future conditions…" (Texas Water Code Section 16.053(e)(2-a)). Water planning rules require that regional water planning groups "shall use Modeled Available Groundwater volumes for groundwater availability" unless there is no modeled available groundwater volume (Title 31 Texas Administrative Code Section 357.32(d)).

Regional water planning requirements do mean that

- the regional water planning process focuses on anticipated pumping volumes in each planning decade rather than on permit volumes;
- the total anticipated pumping volume in any planning decade may not exceed the modeled available groundwater volume in any county-aquifer location (total pumping volume includes the quantities both from existing water supplies and from any recommended water management strategies);
- planning groups may not recommend water management strategy supply volumes that result in exceeding (e.g., "overdrafting") the modeled available groundwater volumes; and
- in the absence of specific information about how groundwater will be managed to meet desired future conditions in a particular location, planning groups may have to develop their own planning basis for allocating the modeled available groundwater volume to complete their regional water plans. The allocation of groundwater may impact the identified water needs and/or the strategy options available to meet needs.

Regional water planning requirements do not mean that

- planning groups may modify groundwater permits that districts have already issued or limit future permits that districts may issue;
- districts must consider whether a project is in an adopted regional water plan when determining whether to issue a groundwater permit; or
- planning groups may modify the desired future conditions (or modeled available groundwater volume) within their planning area through the regional water planning process[1].

Only districts in groundwater management areas can modify desired future conditions.

[1] *Per Rule 357.32, if no groundwater conservation district exists within a region, for example the northeast Texas region, then the region may determine the availability of groundwater for planning purposes if it is physically compatible with the desired future condition. If there is a groundwater conservation district in the region, then the region can request a modeled available groundwater (MAG) peak factor (greater than 100 percent of the MAG) in any aquifer-region-county-basin split if it does not prevent the groundwater conservation district from achieving the associated desired future condition.*