

The Texas Water Development Board's Role in Joint Groundwater Planning

The Texas Water Development Board (TWDB) plays a role in joint groundwater planning from the beginning, as groundwater management areas develop desired future conditions, to the end, estimating modeled available groundwater to achieve desired future conditions.

As groundwater management areas go through the process of developing the desired future conditions, the TWDB provides groundwater availability models as a tool for groundwater management areas and provides technical assistance and guidance to groundwater management areas throughout the process. A TWDB groundwater management area liaison attends each groundwater management area meeting to provide guidance and insight as needed.

Texas Water Code § 36.108 requires district representative within a groundwater management area to submit desired future conditions for relevant aquifers in their groundwater management area to the TWDB. Districts are required to consider several items as part of their desired future conditions packet submittal. The TWDB reviews items submitted by a groundwater management area for administrative completeness before moving forward with estimating modeled available groundwater.

Using information submitted as part of the desired future condition packet, the TWDB estimates modeled available groundwater that will achieve desired future conditions adopted by groundwater management areas. Once the estimates are calculated, the TWDB provides the estimates and detailed documentation of how the estimates were calculated to each groundwater conservation district and regional water planning group within a respective groundwater management area.

Commonly asked questions

What is a *relevant* aquifer? Can desired future conditions be adopted for an aquifer that is not a relevant aquifer?

Relevant aquifers are the official TWDB major and minor aquifers unless designated as non-relevant by districts in a groundwater management area. Districts can also propose desired future conditions for other aquifers, geologic strata, and groundwater resources that are not major or minor aquifers, thereby making them relevant for joint planning purposes.

Establishing a desired future condition for an aquifer, geologic strata, or groundwater resource that is not currently a major or minor aquifer does not mean that it will be officially designated as a major or minor aquifer in the future. Once an aquifer is relevant

for joint planning purposes, the requirements of Texas Water Code § 36.108(d) will be applicable in proposing a desired future condition for adoption.

As part of the joint planning efforts related to proposing desired future conditions, districts in a groundwater management area need to consider several items. These include aquifer uses or conditions, water supply needs and water management strategies in the state water plan, and hydrological conditions including the total estimated recoverable storage as provided by the TWDB. The groundwater management area coordinator should submit a request to the TWDB in writing to calculate the total estimated recoverable storage if this estimate does not already exist for the aquifer or aquifer subdivision. More details on total estimate recoverable storage can be found on the [TWDB website](#).

How is an aquifer designated as *non-relevant*?

Districts in a groundwater management area may classify all or portions of a relevant aquifer as non-relevant if the districts determine that aquifer characteristics, groundwater demands, and current groundwater uses do not warrant adoption of a desired future condition. The districts must submit the following documentation to the TWDB for the portion of the relevant aquifer proposed to be classified as non-relevant (31 Texas Administrative Code § 356.31(b)):

1. A description, location, and/or map of the aquifer or portion of the aquifer.
2. A summary of aquifer characteristics, groundwater demands, and current groundwater uses, including the total estimated recoverable storage, that support the conclusion that desired future conditions in adjacent or hydraulically connected relevant aquifers will not be affected.
3. An explanation of why the aquifer or portion of the aquifer is non-relevant for joint planning purposes.

Note: Groundwater availability for non-relevant aquifers will be determined by regional water planning groups for state water planning purposes.

How will TWDB staff identify the boundaries of aquifers? What if there is a difference between the official aquifer boundary and the modeled boundary of the aquifer?

Official aquifer boundaries for major and minor aquifers are available as [GIS shapefiles on the TWDB website](#). These are the boundaries TWDB will use as a guide for estimating modeled available groundwater.

The modeled area of an aquifer may be different from the official aquifer area because the model boundary is a discrete representation of a continuous physical surface. In some cases, a minimum thickness is used in the models, typically where the aquifer is less than

about 100 feet thick. This was done to help stabilize the model and improve model convergence. In addition, the downdip boundaries of aquifers are typically defined based on water quality data (often the estimated extent of water up to 3,000 milligrams per liter total dissolved solids) whereas the modeled downdip boundary usually extend deeper into geologic formations with poorer quality waters. The groundwater availability model reports will provide details on the model boundary limits and how they are defined.

How should the desired future condition statement be expressed? What planning horizon will be considered in estimating the modeled available groundwater?

A desired future condition statement is a quantitative description of the groundwater resources in a management area at one or more specified future times. We suggest that each desired future condition statement include the following elements.

- **Identify the aquifer and geographic area:** The statement should identify the relevant aquifer(s). If portions of the aquifers are declared as non-relevant then this needs to be described, as well as if the boundary extends beyond the official aquifer boundary. As noted above, other aquifers, geologic strata, and groundwater resources that are not major or minor aquifers that are considered a relevant aquifer should be clearly identified. In addition, districts may prepare desired future condition statements for subdivisions of aquifers and may also prepare statements that address conditions in specified geographic areas. If a district wants to establish a desired future condition for a portion of a relevant aquifer that is outside the official aquifer boundary, then the desired future conditions resolution should explicitly state this.
- **Identify the baseline year:** Desired future condition statements are often expressed in terms of an acceptable change in conditions, such as water-level declines in an aquifer within a defined area at some point in the future. These statements should define the baseline condition (for example, water levels in a selected year) from which these changes (for example, drawdowns) are compared. The baseline year must be sometime in the past and should not be the current year or sometime in the future. Most groundwater availability models are based on average annual conditions and were calibrated using water level measurements from the winter months.
- **Identify the time:** The modeled available groundwater values that are derived from the desired future conditions statements will be used by regional water planning groups to support statewide water planning. The planning groups express their planning efforts in 10-year increments extending at least 50 years in the future. To ensure consistency with the state water planning efforts, we suggest that a desired future conditions statement apply to at least a 50-year planning horizon that corresponds with the regional water planning groups' planning cycle. If a desired

future condition statement does not fully encompass the planning period, the regional water planning groups will specify the groundwater availability for the unspecified planning period.

Can districts in a groundwater management area provide groundwater model files to the TWDB? How will they be processed?

Districts may want us to calculate modeled available groundwater values using model files used by the districts during joint planning efforts. To assist districts in the preparation and submittal of model files, we have published [*How to Submit a Groundwater Availability Model Run or Aquifer Assessment for the Development of Modeled Available Groundwater*](#) that is available on the TWDB website.

We will work with districts representatives in a groundwater management area to replicate achieving the desired future conditions with modeled available groundwater values as much as practicable. However, if there are significant problems in duplicating the work, we may need to use a different approach with different results to generate the modeled available groundwater values.

For information on how and where to submit desired future conditions to the TWDB, please refer to the document [*How to submit desired future conditions to the Texas Water Development Board*](#) on the TWDB website.

For questions, contact:

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