

Scientific and Technical Analysis of Desired Future Conditions Petitions by the Texas Water Development Board

Background

Texas Water Code §36.1083(e) requires that the Texas Water Development Board (TWDB) conduct “an administrative review to determine whether the desired future condition established by the district meets the criteria in §36.108(d); and a study containing scientific and technical analysis of the desired future condition...” when a petition is filed by an affected person appealing the reasonableness of the desired future condition adopted by groundwater conservation districts in a groundwater management area. The results of the study will be submitted to the State Office of Administrative Hearings not later than the 120th day after the date the TWDB receives a copy of the petition from the district.

This document outlines the general scope of work and procedures that will be used to conduct the scientific and technical analysis of the desired future condition that is subject to challenge. TWDB Groundwater Division staff will be responsible for completing this analysis with assistance, as needed and appropriate, from other members of the Executive Administrator’s staff. The entire scope of technical issues that may be raised in petitions cannot be foreseen, so flexibility will be required in the performance of the study to ensure that the elements of the desired future condition are thoroughly and completely addressed. However, there are statutorily mandated elements that will be included in the study. Texas Water Code §36.1083(e) lists the required study elements:

- hydrogeology of the aquifer;
- explanatory report provided to the TWDB;
- factors listed under Texas Water Code §36.108(d); and
- relevant groundwater availability models, published studies, estimates of total estimated recoverable storage capacity, average annual amounts of recharge, inflows, and discharge of groundwater, or information provided in the petition or available to the TWDB.

Administrative Review

The TWDB will conduct an administrative review to determine whether the desired future condition meets the criteria in Texas Water Code §36.108. This review will be initiated upon receipt of a copy of the petition from the groundwater conservation district. This review will be coordinated between the Executive Administrator and the Groundwater Division Staff. The scope of the administrative review will compare the contents of the explanatory report and

desired future conditions statement with the criteria of Texas Water Code §36.108(d). These criteria are:

- 1) aquifer uses or conditions within the management area, including conditions that differ substantially from one geographic area to another;
- 2) the water supply needs and water management strategies included in the state water plan;
- 3) hydrological conditions, including for each aquifer in the management area the total estimated recoverable storage as provided by the Executive Administrator, and the average annual recharge, inflows, and discharge;
- 4) other environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water;
- 5) the impact on subsidence;
- 6) socioeconomic impacts reasonably expected to occur;
- 7) the impact on the interests and rights in private property, including ownership and the rights of management area landowners and their lessees and assigns in groundwater as recognized under Texas Water Code §36.002;
- 8) the feasibility of achieving the desired future condition; and
- 9) any other information relevant to the specific desired future conditions.

As required by Texas Water Code §36.108(d-3), the TWDB is required to receive a copy of the desired future conditions statement, the explanatory report, and other supporting documents after districts in a groundwater management area formally adopt the desired future conditions for the groundwater management area. The Executive Administrator then performs an administrative completeness review of the submitted materials and notifies the technical coordinator of the districts in the groundwater management area if the materials are administratively complete. In the event that a petition is filed with a district against the desired future condition, it is likely that the explanatory report will have already been reviewed by the Executive Administrator for administrative completeness. If no substantive changes have been made to the explanatory report, the Executive Administrator's administrative completeness review of the desired future condition can be expedited. If the Executive Administrator finds that the district has complied with the requirements of Texas Water Code §36.108, then the statement of desired future conditions and the explanatory report will be considered administratively complete.

Scientific and Technical Analysis

The purpose of the scientific and technical analysis of the desired future condition is to ensure that the explanatory report incorporated and applied the best available information to support the decision to adopt the desired future condition by the district. It is not necessary for this evaluation to recreate the investigations supporting the explanatory report, but it is essential that the materials and conclusions presented in the explanatory report be checked and verified to ensure that the State Office of Administrative Hearings has a complete and accurate understanding of the technical basis for the desired future conditions.

The TWDB Groundwater Division staff is primarily responsible for conducting the scientific and technical analysis of the desired future condition. All work performed for the scientific and technical analysis will be performed by or under the direct supervision of a Texas Professional Geoscientist and reviewed and approved by the Director of the Groundwater Division, the Deputy Executive Administrator of Water Science and Conservation, and the Executive Administrator.

The scope of the scientific and technical analysis will be limited to the geographic area, aquifers, and groundwater conditions specific to the desired future condition. The analysis will include the study of the hydrogeology of the aquifer, the explanatory report, and the nine factors listed in Texas Water Code 36.108(d).

TWDB staff will prepare descriptions of the relevant hydrostratigraphic and geologic features, groundwater levels and groundwater flow, recharge, hydraulic properties, discharge, and water quality of all relevant aquifers in the district. The descriptions of water levels and groundwater flow will include, as appropriate, hydrographs, potentiometric surface map(s), and water-level difference map(s). If necessary, based on the specific elements of the petition, relevant information contained in the TWDB Groundwater Database will be included. As appropriate, the analysis will address groundwater pumping, spring flow, interaquifer flow, discharge to surface waters, and evapotranspiration. Water quality may be addressed by including maps and tables describing water quality in relevant aquifers and any documented water-quality changes.

In addition, Texas Water Code 36.1083(e)(2)(D) calls for study of other relevant elements.

- Groundwater availability models – TWDB Groundwater Division staff will review all previous groundwater availability modeling runs that have been performed using the appropriate groundwater availability model.
- Published studies – This section will provide a general discussion of previous investigations in the area of the desired future condition, particularly recent investigations

that may have been specifically performed to support the joint planning efforts in the groundwater management area and are relevant to the issues raised by the petition.

- Estimates of total estimated recoverable storage – The values of total estimated recoverable storage will be included for the district that were prepared by TWDB Groundwater Division staff as part of the joint planning process conducted by the groundwater management area.
- Average annual amounts of recharge, inflows, and discharge of groundwater – This will include available information, possibly from results of groundwater availability runs or other data sources.
- Other information provided in the petition or available to TWDB – This information will be identified, obtained, and evaluated as needed to support the evaluation of the desired future condition.

Study Conditions, Assumptions, and Limitations

The scientific and technical analysis will include appropriate discussion of the limits and boundaries of the evaluation, usability and reliability of data and modeling results, and other conditional statements to properly inform the State Office of Administrative Hearings of the constraints of the study. The report will discuss the structure and design concepts of the groundwater availability model(s) used in the study and for the analysis of the desired future condition. TWDB staff will use the groundwater availability models if they are the best available scientific tools that can be used to meet the stated objective(s). All assumptions and limitations associated with the analysis approach and results will be clearly identified.

Summary

The technical elements of the scientific and technical analysis will generally conform to the scope outlined above, understanding the need to incorporate flexibility in subject matter, technical approach, and reporting formats. After completing the analysis, the report will be subject to a thorough technical and management review at the TWDB. The final report will be sealed by the Professional Geoscientist(s) responsible for the study and submitted to the State Office of Administrative Hearings no later than 120 days after the TWDB receives a copy of a petition.