

DFCs for District Aquifers Adopted

The District has been engaged in a multi-year, collaborative planning process, mandated under a 2005 law. This process was recently completed, establishing the Desired Future Conditions (DFCs) for all the aquifers that the District regulates. DFCs are physical aquifer conditions that are to be achieved (or maintained) over a 50-year planning period. The DFCs now become the regulatory goal and the focus of our groundwater management activities.

The DFCs express the local and regional “policy” side of groundwater management, balancing the need to provide requisite water supplies with the long-term protection and sustainability of the aquifers for various uses in the future. The Texas Water Development Board (TWDB) will now use various models and aquifer assessment tools to estimate the total amount of groundwater that may be withdrawn from the aquifers that is consistent with those DFCs (the “science” side). It will then use those tools to allocate the estimated total amount to the various groundwater conservation districts (GCDs), and, in consultation with the local districts, establish the amount of water that will be exempt use from the aquifers over the next 50 years. This will ultimately result in what is called the Managed Available Groundwater (MAG) for each aquifer, which will form a permitting limitation for the aquifer. The exempt-use estimates and MAGs are also used by the regional water planning groups as the basis for the 50-year regional and state water plans.

The District actively participates in the planning activities of two of the sixteen state-wide Groundwater Management Areas (GMAs), which are the regional groups that develop the DFCs. Each GMA has a Coordinating Committee, composed of one designated representative from each of the GCDs in the GMA, which votes to adopt the DFCs as a single regional body. All GMAs met a statutory deadline of September 1, 2010, to complete the first round of establishing their DFCs, and they develop DFCs for all aquifers in the GMA that are considered “relevant”, i.e., that the GCDs in that GMA intend to regulate. The joint groundwater planning by the GMAs will be a recurring activity; they will review the DFCs and the individual district plans to achieve the DFCs at least once each year, and they must re-adopt or revise the DFCs at least every five years.

The primary aquifer in our District of course is our namesake aquifer, the Barton Springs segment of the Edwards Aquifer. GMA 10, which includes all or parts of nine counties along the Balcones Escarpment south of the Colorado River to near Del Rio, is the joint planning entity for the Edwards; General Manager Kirk Holland (kholland@bseacd.org) is the Board’s Designated Representative for this GMA. The Edwards Aquifer may be hydrogeologically subdivided into three identifiable groundwater segments that are more or less separate from each other, and GMA 10 has chosen to establish different DFCs for each of the Northern, Central, and Western subdivisions. The Northern Subdivision corresponds to the Barton Springs segment, so its DFCs are the ones applicable to the District. This subdivision has dual DFCs adopted: one an “extreme-drought” DFC, and the other an “all-conditions” DFC. Both DFCs use discharge of Barton Springs, the major natural outlet of the aquifer, as an overall barometer of aquifer condition.

The first DFC will form the basis and authority for the District's drought management program of the Freshwater Edwards Aquifer in the Northern Subdivision to assure adequate water supply for well users and adequate flow for endangered species at the springs; its DFC states: ***"During extreme droughts, including a recurrence of the 1950s drought of record, monthly average springflow at Barton Springs shall not be less than 6.5 cfs."*** The second DFC, which will serve as a so-called upper cap on permitted use to avoid an unacceptable amount of acceleration of this small aquifer into declared drought stages and their mandatory curtailments, states: ***"The seven-year average springflow of Barton Springs shall not be less than 49.7 cfs during average recharge conditions."***

In addition to these dual Edwards DFCs, which address the freshwater portion of the Edwards Aquifer, GMA 10 also established a DFC for the Saline Edwards in the Northern Subdivision, to facilitate the development of this aquifer as a new water supply for Central Texas while protecting the adjacent freshwater resource. This is a current, long-term goal for the District. The Saline Edwards DFC requires: ***"Saline production shall produce no more than five feet of drawdown at any one point on the freshwater-saline water interface and no more than an average 25 feet of drawdown along the interface."***

The Trinity Aquifer is considered an alternative groundwater supply in our District, and is being increasingly considered as a supplemental or sole source of water for various uses, including public water supply. GMA 9, which also incorporates all or parts of nine counties in the Texas Hill Country that use the Trinity Group aquifers as a primary groundwater supply, has adopted the following DFC for the Trinity Aquifer in GMA 9 that is applicable to a small part of our District: ***"Groundwater withdrawals from the (undifferentiated) Trinity Aquifer (including both exempt and non-exempt uses) shall produce no more than a regional-average 30 feet of drawdown under average recharge conditions."*** It should be recognized that this does not imply that all parts of GMA 9 will have groundwater created by 30 feet of drawdown available to them. Further, while the DFC is expressed as an undifferentiated Trinity Aquifer, some GCDs, including ours, may choose to regulate the different parts of the Trinity Aquifer individually as Upper, Middle, and Lower Trinity Aquifers, as long as their management is consistent with the adopted DFC and corresponding MAG. District Senior Hydrogeologist Brian Hunt (brianh@bseacd.org) is the Board's Designated Representative to GMA 9.

GMA 10 has also established a DFC for the Trinity Aquifer, which occurs generally only under confined hydrogeologic conditions in this GMA, unlike that of the Trinity in GMA 9. The Trinity in GMA 10 is only beginning to be used as a significant water supply, as it is deeper than the Edwards and is of more variable yield and water chemistry. While different zones of the Trinity Aquifer have been geologically identified the Trinity is considered on an undifferentiated basis, i.e., a single aquifer, for at least this first round of DFC-setting. GMA 10 has adopted the following as the DFC applicable to our District for the (Undifferentiated) Trinity Aquifer in GMA 10: ***"Regional average well drawdown during average recharge conditions that does not exceed 25 feet (including exempt and non-exempt well use.)"*** The same caveats concerning how this DFC is to be interpreted apply in GMA 10 as those mentioned for GMA 9 in the paragraph above. Moreover, certain other GCDs in GMA 10, generally where the Trinity is present in only a small area, have different applicable Trinity DFCs or have declared it "non-relevant."