PRESS RELEASE

Lone Star Groundwater Conservation District

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THE JOINT PLANNING PROCESS: GMAs and DFCs
9 FACTORS YOU DIDN'T KNOW YOU NEEDED TO KNOW

October 9, 2020 – So far in our educational press release series, we have covered a wide range of topics but for this release, we want to pick up where we left off – talking about the joint planning process and digging a bit deeper into Desired Future Conditions or DFCs. Specifically, we want to cover the factors that the voting groundwater conservation districts (GCDs) within a groundwater management area (GMA) must consider when determining DFCs.

If you remember, DFCs are what the GCDs within a GMA want the aquifers in their areas to look like at a specific time in the future – a goal, a desire or a target that can be quantified and measured. But how do the GCDs determine which DFC is the best for their area?

The process requires the consideration of 9 factors:

1. Aquifer uses or conditions;
2. Water supply needs and strategies from the state water plan;
3. Hydrological conditions for each aquifer;
4. Other environmental impacts (e.g., impacts on spring flows and surface water and groundwater interactions);
5. Impacts on subsidence;
6. Socioeconomic impacts;
7. Private property rights;
8. Feasibility of achieving the DFC; and
9. Any other information relevant to the DFC

The voting GCDs must consider each of these factors before voting on a proposed DFC. The statute does not dictate what importance or how much weight each factor should receive in the process. However, the only factor that receives constitutional protection (under the federal and state law) is private property rights. The statute requires the DFC to reflect a balance between the highest practicable level of groundwater production and the conservation and protection of groundwater as well as control of subsidence.

Aquifer Uses or Conditions

How does a GCD consider the aquifer uses or conditions? The GCDs within the GMA must look at a lot of data – for all of the counties within the GMA. Included in the dataset could be well depths for wells throughout the GMA planning area and the GCDs could also look at the information by individual county. The GCDs might also review the specific well yields, and annual pumping by aquifer layer on a county-by-county basis as well as GMA-wide. And the GCDs will also likely look at the annual pumping by type of use, such as irrigation, municipal, manufacturing, livestock, and mining.

Water Supply Needs and Strategies from the State Water Plan

The second factor GCDs must consider are the water supply needs and strategies from the state water plan. The needs and strategies taken from the state water plan come from the regional water planning groups. These groups gather data from a wide range of water supply entities in the planning area. The data that goes into the state water plan includes a summary of demands, supplies and needs. A key component of the planning process is to estimate future demands. Future water demands are estimated by considering the historical demands and projected growth within each county – this includes reviewing census data, employment growth from the Texas Workforce Commission, and the demands for power generation, mining, and irrigation. After future demands are estimated, future needs are estimated by comparing the demands to available supplies. Future needs are then met by developing water supply strategies that make up the State Water Plan. The needs and strategies from the state water plan are a consideration when determining DFCs.

Hydrological Conditions for Each Aquifer

Another very important factor that must be considered is the hydrologic conditions for each aquifer in the GMA. Typically, this information is presented to the GMA by a technical consultant and helps stakeholders understand how the aquifers work. The consultant might present aquifer cross-sections using a range of well sites drilled into the specific aquifer formation trying to “connect the dots” as to how an aquifer’s water producing formations can vary throughout an aquifer and even a county. Hydrologic factors may include a review of the management area’s total estimated recoverable storage (TERS) which is an estimate of the total estimated amount of groundwater within an aquifer that can be recovered. This volume is estimated by the TWDB using a simple formula ranging anywhere from 25-75% of the aquifer volume. Reports of GCD water budgets including annual recharge, lateral inflows and outflows, and discharge are also considered. These water budgets are generally estimated with a groundwater availability model or GAM.

Impacts on Subsidence

Subsidence is yet another important factor that must be considered by the GCDs. In some areas of the state, subsidence (the lowering or sinking of the land surface) can occur. Research has shown that excessive groundwater withdrawals have the potential

to cause subsidence. It's important for GCDs to review and consider whether subsidence is an issue in their areas because when and if subsidence occurs it cannot be undone. Lone Star has committed to study whether subsidence is occurring within Montgomery County and if so, to what degree and what are the contributing factors.

Chapter 36 requires the GCDs within a GMA to consider the impacts on subsidence when determining their desired aquifer conditions. Notably, the statute does not require the GCDs to select a desired aquifer condition that will prevent or stop subsidence. On the other hand, subsidence districts have a statutory mandate to end or stop subsidence. GCDs are required only to consider the impact the desired aquifer condition may have on subsidence, which is consistent with a GCD's requirement to adopt rules that help *control* subsidence.

Because aquifers do not begin and end at county lines, effects from production occurring within surrounding counties can be felt in neighboring counties.

Socioeconomic Impacts

Socioeconomic impacts may include the costs incurred to maintain or replace well capacity as a result of additional groundwater pumping. Well owners and operators generally expect that over time expenses will be incurred to maintain or replace well capacity. The fact that an owner may incur these expenses does not necessarily mean that groundwater pumping should be restricted particularly when restricting pumping does not adequately protect property rights. Although socioeconomic impacts are a consideration, spending money to keep your system productive and efficient, unlike property rights, is not a constitutionally protected interest. While rising costs are unfortunate, they are anticipated.

Private Property Rights

Per section 36.0015 of the Texas Water Code, GCDs were created to: (i) protect property rights, (ii) balance the conservation and development of groundwater to meet the state's needs, and (iii) use the best available science in the conservation and development of rules. Unlike the protection of private property rights, the protection of socioeconomic impacts is not one of the purposes of a GCD in section 36.0015 nor is it a constitutionally protected right.

So, when conducting the 9-factor test to determine a DFC, GCDs should be cognizant that only one of the 9 factors is protected by the constitution from being taken without just compensation. When regulation goes too far in restricting the use of property or eliminating all practical use of property, a takings can occur. Lone Star's Board of Directors believes that, because property rights are protected by the Texas and U.S. Constitutions and protection of property rights is one of a GCD's main purpose, property rights should be given the most weight or consideration in the 9-factor analysis.

Feasibility of Achieving DFC

The feasibility of achieving the DFC is assessed in two areas. First, by quantitatively evaluating if it is physically possible to achieve the hydrologic conditions set forth in the DFC statement. This could be a certain amount of drawdown, or spring flow volume during a drought, or a volume of groundwater remaining in the aquifer at a time in the future. Determining the physical achievability of a DFC is generally evaluated with a historical data assessment or a predictive model to simulate future conditions in the aquifer. The second component of achieving the DFC is to assess the ability of the GCDs to implement rules and a management plan to ensure that the DFC can be met through the tools available to the GCDs in the GMA.

Any Other Relevant Information

This factor covers any other data and considerations that are not specifically identified in the other eight factors.

The MAG – How It's Calculated and What It Means

After final adoption of a DFC, the TWDB executive administrator is responsible for calculating a Modeled Available Groundwater, or MAG. The MAG is the estimate of the total annual pumping from an aquifer that is possible to achieve the DFC in the future. The MAG is not a cap on permitting or pumping in a given year. It is just TWDB's best estimate of pumping based on a set of assumptions, conditions, and a predictive model of the aquifer. Where a GAM is available, it is generally used to estimate the MAG. If a GAM (Groundwater Availability Model) is not available, the TWDB will use some other quantitative tool to estimate the MAG, such as an analytical model or historic data.

The Modeled Available Groundwater is not a pumping cap and is one of several factors a district considers when managing the aquifer long-term. A GCD is required to manage to achieve the DFC, but not the MAG. Permitted amounts do not necessarily equal produced amounts. GCDs can issue permits in a volume that exceeds the modeled available groundwater so long as the GCD ultimately achieves the desired conditions at the end of the selected time period, which is usually a 50 to 60-year time period. This time period is usually selected to be consistent with the planning horizon for the state water plan.

Desired Future Conditions and Modeled Available Groundwater numbers are useful planning tools that help the GCDs, regional water planning groups, and water utilities plan for future water supplies.

What Is the Status of GMA 14 Joint Planning?

GMA 14 is in the middle of round three of joint planning and discussions of the required 9-factors. The joint planning group will have a proposed DFC in May 2021 and a final DFC in January 2022. Lone Star GCD has made requests for model scenarios based on data, science and key stakeholder involvement and support. The District's request for

GMA 14 to consider Desired Future Conditions that would allow for development of additional groundwater resources is based on the results of the Strategic Water Planning Study, which revealed that additional production would not cause unreasonable impacts. A number of large stakeholders within Montgomery County helped develop Run D as part of the strategic study. These stakeholders studied the potential water level declines associated with the increased production in Run D and supported the implementation of additional groundwater production despite the potential impacts. While Run D is not one of the three scenarios the GMA 14 GCDs are considering during round three, there is at least one scenario that would yield a MAG consistent with Run D.

Next week we will bring the joint planning process portion of the series to a close by discussing how joint planning can affect the District's rules, specifically the potential for proportional adjustments and/or management zones.

A copy of the approved District Rules, a summary of the amendments and Frequently Asked Questions on the new rules can be found on the District's Management & Rules page. For more information on the Lone Star Groundwater Conservation District, please visit www.LoneStarGCD.org or follow us on www.Facebook.com/LoneStarWater. For questions, please contact the District at (936) 494-3436.

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