

Curtis Chubb Comment Summary

- The total and deep recharge rates for each aquifer in each groundwater district should be included in all GMA 12 reports.
- Recharge amounts for aquifers are not included in the attached GMA-12 document circulated for comment
- “Recharge” is the most important consideration when planning how to sustain an aquifer
- The GMA-12 groundwater districts should be required to identify their groundwater management plans for the Simsboro Aquifer as “Managed Depletion.”
- If the DFCs are not close to zero drawdown, the districts should 1) explain why they cannot prevent the depletion of the aquifers, and 2) present their future plans to alleviate the mining of the Simsboro and other aquifers
- Setting DFCs that are achieved only by mining of aquifers does not fulfill the purposes of groundwater districts as outline in Chapter 36 in the Texas Water Code.
- GMA-12 groundwater districts should protect landowners property rights by using rules promulgated by the Kenedy County Groundwater Conservation District as a model
- The GMA-12 groundwater districts need to provide a complete accounting of why the aquifers continue to be depleted even though they have spent multi-millions of dollars to preserve and conserve the aquifers.

Larry Hoffman Comment Summary

- Water is essential for life and economic stability.
- Management of aquifers should consider the following: varied uses of water; exponential population growth; the water and energy nexus; conjunctive use of surface water and groundwater; environmental concerns, and water quality.
- Evaluation of water supply options should involve an objective & systematic cost-benefit analysis that considers long-term more than short-term consequences, impact on stakeholders, reliability of scientific data, impact on economy, and property rights considerations

Environmental Stewardship (ES) Comments Summary

- Comments received in letter dated March 27, 2015, with multiple attachments.
- Scenarios being modeled predict that the pumpage will exceed the MAG in four out of six aquifers and will cause the DFCs to be exceeded in all aquifers except the Sparta, and over 100 feet in the Simsboro in three GCDs. The amount that the predicted pumpage in PS-4 exceeds the MAG for the Simsboro is >50% in LPGCD, POSGCD, and BVGCD.
- The GMA should resist the temptation to simply increasing the DFCs rather than really evaluate the ability of the aquifers to produce the MAG without unreasonable damages. The GMA must evaluate all of the factors required in statute.
- The GMA should retain the current DFCs until good studies of the aquifers can help us to evaluate the true ability of these aquifers to produce water and at what consequences.
- Current DFCs allow groundwater production to the point of causing unreasonable damage to the terrestrial environment, surface waters, shallow wells, etc.
- Because GCDs should permit up to the MAG, it is important to establish an initial DFC that protects and conserves the aquifers.
- ES is presenting GMA 12 with a paper that looks at the Simsboro-Colorado River relationship. ES believes the Colorado is a losing stream over the Simsboro.
- Will the GMA conserve and protect the Colorado and recognize the connection between surface water and groundwater?
- ES wants each GCD to tabulate:
 - the new permits granted since last DFCs set;
 - the number of registered wells in each aquifer along with how many are likely to be impacted by PS-4 drawdowns; and
 - results extracted on the impact of PS-4 pumpage on outflows into the Colorado and Brazos Rivers.
- The GMA should research and adopt monitoring programs to help detect the groundwater-surface water interactions on the major rivers within the GMA.
- The GMA should refrain from changing the DFCs until the groundwater-surface water interactions are better refined/defined.
- This summary does not include the attachments submitted with the ES comments.

Forestar Comments Summary

- Comments received in letter dated February 26, 2015.
- Forestar requests that TERS be considered in the development of the DFCs.
- The methodology used to develop the DFCs is unclear and inconsistent across the counties in GMA 12.
- The methodology appears to be biased towards areas where groundwater resources have already been developed (i.e. there is more significant historical use and therefore higher predicted pumpage).
- Highly variable DFCs for the same aquifers in different areas results in unequal distribution of MAG and therefore unequal treatment of landowners within the GMA without any scientific basis.
- Forestar requests that DFCs acknowledge total groundwater that is available for production.
- Forestar requests that water level changes in the aquifer be used to monitor aquifer conditions and not as a means to constrain pumpage without also evaluating resource management benefits.
- Forestar requests that the amount of water that can be produced without causing adverse impacts be estimated.
- Forestar requests that the applicability of the overall drawdown value within GMA 12 been re-examined.

LCRA Comments Summary

- Comments received in letter dated April 1, 2015.
- Unsure if the GMA/GCDs have already identified the goals the GMA is trying to achieve and how the GMA is balancing the factors that must be considered.
- Slides indicate that the GMA will adopt a new standard (set of DFCs).
- LCRA believes the current DFCs should be revised. Current DFCs differ by political boundary, and the scenarios appear to only consider existing authorized permits without any consideration of new permits (i.e. additional development of groundwater resources in the member districts).
- Modeling indicates that pumping under existing permits will cause DFCs to be exceeded, indicating that these are unrealistic and if retained, could be used as a basis to refuse new permits and deny property owners their right to access groundwater.
- LCRA believes that the actual aquifer characteristics across the entire GMA should be evaluated, and a uniform DFC for the entire GMA should be adopted.
- The existing approach of comparing existing permits to previous DFCs leads to an inherent bias, where districts with higher existing permits are allocated more MAG, even if the DFC differences do not reflect where projected population and demand growth will occur. In other words, DFCs should not limit potential groundwater development in those areas that have not been developed already.
- Use of 2000 as the basis for DFCs favors districts with higher pumpage before that year. LCRA favors the use of pre-development conditions.
- Developing DFCs based only on an evaluation of impacts from existing permits ignores legal principles highlighted in the *Day* decision.
- Differences in uses between districts can be considered, but it should not be the only factor considered. Both historic use and future needs must be balanced.
- The best way to consider future needs is to consider the physical characteristics of the aquifer and the ability to produce groundwater, regardless of political boundaries unless those boundaries represent discernable differences in uses or aquifer conditions.
- LCRA suggests that depletion in storage is a more appropriate metric for DFCs. This removes the influence of existing permits/use and gives consideration to the properties of the aquifer and its ability to produce water.

Responses to Comments

Soil Science of Groundwater Flow Weaknesses of MODFLOW Water Modeling By T. Barrett Lyne, Ph.D., April 4, 2015, Brazos County Resident

The comments are regarding some of the shortcomings in measuring recharge with groundwater flow models. The comments discuss finger funnel flow paths are discussed as preferential paths that can connect the surface water and groundwater and be different areally. The comments also are regarding potential preferential flow paths at water wells where inadequate cementing of the casing occurred is presented as another avenue for the movement of groundwater vertically. A conclusion is that groundwater flow models will always be constrained by computational limitations, assumptions and knowledge gaps. Also, that the users of groundwater models are warned that modeled available groundwater numbers should be used with caution.

Firm Yield Defined by T. Barrett Lyne, Ph.D, March 27, 2015, Brazos County Resident

These comments are regarding what would be defined as firm yield with a definition given as "a quantity of water from a project or program that is projected to be available on a reliable basis given a specified level or risk during a critically dry period." The conclusion is that we do not know with certainty the maximum amount of firm yield that can be sustained by an aquifer.

Public Comments Regarding GMA 12 DFC/MAG Preliminary Scenarios by Cathy Lazarus, Robertson County Resident, March 29, 2015

The comments are regarding the amount of static water-level decline that has occurred in various wells screening the Simsboro aquifer within the BVGCD and how average static water-level decline is estimated. There is some focus in the comments regarding that static water-level declines that have occurred in the Bryan, College Station and Hearne area. The conclusion from the comments is a request that the DFC for the Simsboro aquifer remain at 270 feet of average water-level decline or artesian head decline in BVGCD for this cycle of GMA 12 planning.

Comments from Dave Coleman, City of College Station, March 25, 2015

The comment is a request to keep the DFC for the Simsboro aquifer at 270 feet of additional artesian head decline for this cycle of GMA 12 planning. Also mentioned is that with the Queen City - Sparta GAM model update effort scheduled in the next few years will be in a better position for the next cycle of GMA 12 planning to assess whether the DFC for the Simsboro aquifer should be adjusted.