



February 4, 2016

By hand at Joint Planning Meeting and by email

District Representatives
Groundwater Management Area-12
Nathan Ausley, President, Post Oak Savannah GCD
David Van Dresar, General Manager, Fayette County GCD
James Totten, General Manager, Lost Pines GCD
David Bailey, General Manager, Mid-East Texas GCD
Alan Day, General Manager, Brazos Valley GCD

Re: Summary of ES comments and recommendations concerning GMA-12's DFC review

Dear District Representatives:

Environmental Stewardship (ES) appreciates this opportunity to summarize our comments to date on the GMA-12 Desired Future Conditions review process, to draw some initial conclusions about what this review has revealed, and propose some actions to be taken. Overall, we commend the GMA Districts and their representatives for overseeing an open and transparent review process, and for allowing the public to participate in the discussions. As requested, ES prepared a summary of the written comments that we have provided since the initial discussions started in early 2014 and provided the summary to the GMA-12 on January 27, 2015 (see reference). The following will provide our 30,000 ft view of what we have discovered and the steps that we believe are needed to complete this cycle of the DFC review and adoption process.

ES believes that a meaningful consideration of the nine factors that includes the concerns we have raised, along with a review of the mandates provided by the Texas Water Code and the Conservation Amendments of the Texas Constitution, can lead to a pathway to achieve the intent of this process. We further believe that the GMA has a good start on that body of work.

Overall, the review has revealed the following:

- The GMA-12 GAM, though robust in many ways and the best tool we have available, has deficiencies that distort some of its predictive functions and make quantitative estimates suspect for several important factors that are required to be considered.
 - Consideration 3: Water budgets produced for evaluation of hydrological conditions do not reflect the expectations expressed by the hydrologists, that:
 - most of the water pumped comes from storage, and
 - there is very little leakage between aquifers.To the contrary, ES evaluation of the GAM results¹ indicate that the most significant contributions of groundwater for pumping predicted by the GAM come from:
 - a reduction in outflows to surface waters, and
 - vertical flow from other aquifers.
 - Consideration 4: The historical and recent empirical information² on the relationship between the Colorado and Brazos rivers to the Carrizo-Wilcox and other aquifers is not accurately reflected in the GAM outputs.
 - MODFLOW outputs do not correlate with empirical data.
 - Hydrologists contend that outflows to surface waters tend to be over-estimated.
 - The GMA-12 GAM development reports³ (publications) indicate that the purpose of the GAM is to provide a tool for evaluating changes in water level and *stream flow* for

¹ ES comments dated June 18, 2014 (Consideration 3).

² ES comments dated September 21, 2015 (Consideration 4).

changes in pumping, yet the GMA-12 Consultants do not use the tool for evaluating impacts on *stream flow*.

- Consideration 8: The accuracy of the GAM⁴ in predicting and quantitatively measuring drawdown in relationship to DFCs and other important parameters such as horizontal and vertical leakage is not well understood or quantified.
- The GAM Improvement Project contracted to INTERA is evidence of these deficiencies.
 - Scope covers faults and groundwater-surface water improvements.
 - GAM improvements will not be completed until late 2017.
- GMA-12 has not yet determined “sustainable” pumping levels for the aquifers⁵ as required by the Conservation Amendment of the Texas Constitution and the Texas Water Code. Sustainable pumping levels are need to 1) balance *conservation* and *development*, and 2) protect interests and rights in private property and the rights of management area landowners (Consideration 7).
 - A sustainable “conservation standard” should be defined and estimates of the sustainable pumping volumes need to be developed before new DFCs are developed and adopted.
 - Discussion of this concept should be included in Considerations 3, 4, 7, 8 and possibly 6.

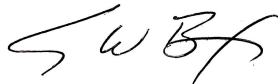
Environmental Stewardship respectfully recommends that the GMA-12 take the following actions in completing the current round of the DFC review and adoption process:

- Re-adopt the currently adopted DFCs unchanged⁶ until the GAM improvements have been completed and adopted.
 - GMA-12 should continue to consider establishing DFCs for unconfined segments.
- Focus discussion and technical analysis on how to define and develop a sustainable conservation standard to guide development of DFCs once the GAM improvements have been adopted.
 - Finalize development of conservation standard during the next round of DFC review when revised DFCs can be adopted after consideration of this concept.

Environmental Stewardship and its supporters look forward to having an ongoing dialogue with the District Representatives regarding these issues. We believe the information provided by ES over the past several years represents a substantial body of information that supports our concerns, requests, and recommendations, that, as of yet, have not been fully evaluated by the District’s of GMA-12 as required by statute.

Thank you for your attention to these important issues.

Respectfully submitted,
Environmental Stewardship



Steve Box
Executive Director

Reference: Environmental Stewardship. Submitted January 27 2016. Proposed Desired Future Condition(s) for aquifer(s) in GMA 12. Environmental Impacts & Considerations Summary.

cc: Paul Pape, Bastrop County Judge
Paul Fischer, Lee County Judge
John Cyrier, State Representative, District 17

³ ES comments dated September 21, 2015 (Consideration 4)

⁴ ES comments dated October 6, 2015 (Consideration 8)

⁵ ES comments dated August 6, 2015 (Consideration 7) and “Proposed Desired Future Conditions” preamble to January 27, 2016 Environmental Impacts & Considerations Summary.

⁶ ES does not endorse the currently adopted DFCs as being adequately and sustainably protective of the environment and the aquifers, but does recognize that this is the current legal standard and, as such, should not be changed until the GAM has been improved and better data are available on the nine factors for consideration prior to adopting changed DFCs.