

# **Environmental Stewardship**

## **Comments to House Natural Resources Committee on Interim Charge 3**

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**Interim Charge 3:** Monitor the joint planning process for groundwater and the achievement of the desired conditions for aquifers by groundwater conservation districts.

**The committee also seeks written submissions on the following topics:**

- Emerging issues in groundwater and surface water interaction, in particular in areas of increasing competition for scarce resources.

### **BACKGROUND**

Environmental Stewardship (ES) is a Texas nonprofit organization that advocates for the protection and conservation of the surface water and groundwater resources in the state. Most recently ES has been a stakeholder in the activities and actions of Groundwater Management Area 12 (GMA-12). ES has been an active participant in the joint planning process for GMA-12 since its inception and is now an active participant in the third review of the desired future conditions for the Carrizo-Wilcox Aquifer Group and the other aquifers within the territorial jurisdiction of this GMA.

GMA-12 includes the following five groundwater conservation districts:

- Brazos Valley Groundwater Conservation District
- Fayette County Groundwater Conservation District
- Lost Pines Groundwater Conservation District
- Mid-East Texas Groundwater Conservation District
- Post Oak Savannah Groundwater Conservation District

As a stakeholder ES has called attention to the predictions of the groundwater availability models (GMA-12 GAMs) that have consistently point to the steady decline of groundwater outflows from the aquifers that provide stream flows to the Colorado River and its tributaries in response to increase groundwater pumping that has been permitted in the management area.

### **GAM improvements**

During the second round of DFC review it became clear that, though the then existing GAM (Old GAM) predicted significant changes in groundwater outflows to surface water resources that would result in a reversal of the gaining/losing relationship of the river to the aquifers, the model had inherent deficiencies that made reliance on the predicted trends problematic. After review of the nine considerations the joint-planning group decided that the model needed to be updated and adopted essentially the same DFCs as were adopted during the first round.

During the period between the second and third (current) DFC review the GAM was significantly improved. The revisions to the updated GAM included:

- An upgrade in the model's ability to account for interactions between groundwater aquifers and the surface waters.
  - Significantly, ES was able to get Senate Bill 3 funding from the Texas Water Development Board directed toward and refining the GAM in such a way that would be useful in providing prediction regarding surface water-groundwater interaction on both a *regional* and *local* scale. Most GAMs are designed to work only on a regional scale.
  - Senate Bill 3 funding was requested by the Colorado-Lavaca Basin and Bay Area Stakeholder Committee (CL-BBASC) as a function of its workplan.
- The updated New GAM was completed September 2018. Two reports document the improvements in New GAM:
  - Report to CL-BBASC<sup>1</sup>: Final Report: Field Studies and Updates to the Central Carrizo-Wilcox, Queen City, and Sparta GAM to Improve the Quantification of Surface Water-Groundwater interaction in the Colorado River Basin, August 2017.
  - Final Report<sup>2</sup>: Groundwater Availability Model for the Central Portion of the Sparta, Queen City, and Carrizo-Wilcox Aquifers (Volumes I and II), September 2018.
- The New GAM has been adopted by GMA-12 for use in developing and adopting desired future conditions in the third round of review. DFCs are due to be adopted and provided to the TWDB by May 2021.

#### Reliability of the New GMA-12 GAM and ALJs Findings

Environmental Stewardship is party to the contested case hearing on the Lower Colorado River Authorities application for a groundwater permit to develop and pump 25,000 ac-ft of groundwater per year from the Simsboro formation of the Carrizo Wilcox Aquifer group currently pending with the Lost Pines GCD (Lost Pines District). A hearing before the State Office of Administrative Hearings (SOAH) before Administrative Law Judges Rebecca S. Smith and Ross Henderson (ALJs) was held on October 15-22, 2019. A proposal for decision (PFD) was issued March 31, 2020.

Findings from the ALJs Proposal for Decision<sup>3</sup> (emphasis added):

- Based on the overwhelming consensus of the evidence, the ALJs find that the New GAM, as opposed to the Old GAM, is the better model to use to predict the effect of LCRA's pumping.
  - GM witness Dr. Hutchison testified that the calibration of the New GAM is better than the Old GAM in Bastrop County, and that impacts from production in Bastrop County may occur in Lee County.<sup>48</sup> LCRA's expert witnesses Van Kelly and Dr. Steven Young, along with Recharge expert witness Michael Thornhill, also agreed that the New GAM was an improvement over the Old GAM.<sup>49</sup>
- The ALJs find that ... certain changes to the Revised Draft Operating Permits are required for the District to monitor potential impacts to surface water resources.
  - As part of its review of LCRA's permit requests, the District must consider whether the proposed use of water unreasonably affects surface water resources.<sup>72</sup> Three parties, LCRA, the GM, and Environmental Stewardship,

provided evidence and testimony relating to the issue. All three found that LCRA's requested pumping may have some impact on surface water resources. Environmental Stewardship's and the GM's analysis both show potential loss of surface water to the groundwater formations in Bastrop County by around 2050. Environmental Stewardship argues that the impacts to surface water resources will be unreasonable after the first 8,000 acre-feet of pumping.

- [T]he ALJs agree with the GM and Environmental Stewardship that the District should include appropriate conditions in the operating permits to monitor whether LCRA's proposed pumping combined with District-wide pumping will cause unreasonable effects and to order curtailment when needed.
- Districts are, however, required to address conjunctive water management in their water management plans and in the adoption of the DFCs.<sup>114</sup> Therefore, although cumulative effects of pumping are not relevant to the issue of unreasonable effects, those effects can, and should be, considered as part of the District's management, and the possibility exists that the District could curtail all users if necessary. In order to make those sorts of determinations, there will need to be monitoring, as discussed below.
- The ALJs agree that the GAM modeling shows the possibility of future unreasonable effects on surface water resources caused by the cumulative effects of District-wide pumping, including LCRA's. Therefore, the District needs to monitor the impacts of groundwater pumping in order to have sufficient knowledge to be able to mitigate or prevent unreasonable effects.
- As discussed above, the ALJs also find it necessary to conduct monitoring of the impacts on surface water, as well.
  - The ALJs find that, in light of the fact that the GAMs show potential impacts to surface water resources caused by LCRA and District-wide pumping, any monitoring well system must include monitoring wells that could monitor effects on surface water resources.
  - Thus, the ALJs recommend amending the definition of "Monitoring Well System" contained in Special Condition (4)(a) in the Revised Draft Operating Permit to require that a monitoring well system must monitor such effects.
- The process of adoption of a surface water work plan falls squarely within the process of adoption of the District's water management plan.<sup>197</sup> Instead, the Well Monitoring Agreement should incorporate any work plan that is adopted during the water management planning process.
- The ALJs recommend that the District adopt this Special Condition but believe the condition should be revised to provide an opportunity for affected landowners to participate in the permit renewal process, including the determination of whether an amendment is necessary.

## REQUEST FOR FUNDING

### FOR FIELD MONITORING AND DATA GATHERING

**Environmental Stewardship urges the Legislature to fund field studies in Groundwater Management Areas (GMAs) where suitable models exist and are in need of field data in order to validate the surface water-groundwater interaction capabilities of the groundwater availability models (GAMs). Validation of such models is urgently necessary so that the predications from the models can be reliably used to inform decisions regarding permitting, the establishment of desired future conditions and regulatory actions that may become necessary based on the use of these models by GMAs and Groundwater Conservation Districts.**

The background discussion above clearly demonstrates that the GMA-12 GAM is suitable for use in predicting the impacts of groundwater pumping on surface waters, but that the model needs to be informed by empirical field data before the model results can be relied upon for the purposes intended; informing decisions regarding groundwater permitting, desired future conditions, and such regulatory actions as curtailment when/if needed.

A summary of the scientific information<sup>4</sup> that the ALJs relied upon for the findings discussed above can be found on Environmental Stewardship's [website](#).

GMA-12 and Lost Pines Groundwater Conservation District are in urgent need of such funding in order to be able to timely and reliably implement findings of the Administrative Law Judges in the LCRA case pending before the District.

Finally, Basin and Bay Area Stakeholder Committees (BBASCs) need to be tasked with providing recommendations to the Legislature and TCEQ regarding the appropriate means of monitoring the impacts of groundwater production on rivers and their tributaries in order to protect environmental flows, especially during drought conditions. BBASCs need funding to task their Basin and Bay Expert Science Teams (BBESTs) to make scientifically based recommendations on the impacts of reduced baseflows on attainment frequencies, the amount of withdrawal that unreasonably will damage the ecological systems, review and report on the results of applied research conducted by GMAs and GCDs and the progress in protecting environmental flows.

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<sup>1</sup> Report to CL-BBASC: Final Report: Field Studies and Updates to the Central Carrizo-Wilcox, Queen City, and Sparta GAM to Improve the Quantification of Surface Water-Groundwater interaction in the Colorado River Basin, August 2017  
[https://www.environmental-stewardship.org/wp-content/uploads/2019/06/BBASC1548301856\\_Final-Report.pdf](https://www.environmental-stewardship.org/wp-content/uploads/2019/06/BBASC1548301856_Final-Report.pdf)

<sup>2</sup> Final Report, Final Report: Groundwater Availability Model for the Central Portion of the Sparta, Queen City, and Carrizo-Wilcox Aquifers (Volumes I and II), September 2018.  
Volume 1: [https://www.twdb.texas.gov/groundwater/models/gam/czwx\\_c/Updated\\_CWQCSP\\_GAM\\_vol1\\_all.pdf?d=489173](https://www.twdb.texas.gov/groundwater/models/gam/czwx_c/Updated_CWQCSP_GAM_vol1_all.pdf?d=489173)  
Volume 2: [https://www.twdb.texas.gov/groundwater/models/gam/czwx\\_c/Updated\\_CWQCSP\\_GAM\\_vol2\\_all.pdf?d=489173](https://www.twdb.texas.gov/groundwater/models/gam/czwx_c/Updated_CWQCSP_GAM_vol2_all.pdf?d=489173)

<sup>3</sup> REFERENCE TO PFD: PFD SOAH Site:  
[https://cis.soah.texas.gov/dmwebbasic/tokweb27.ASP?WCI=opendocument&SKEY=597394\\_0\\_9\\_63&localtimezone=300](https://cis.soah.texas.gov/dmwebbasic/tokweb27.ASP?WCI=opendocument&SKEY=597394_0_9_63&localtimezone=300)  
PFD (Original): <https://www.environmental-stewardship.org/wp-content/uploads/2020/09/19-0705-PFD-LCRA.pdf>  
PFD (Surface Water Only): <https://www.environmental-stewardship.org/wp-content/uploads/2020/09/19-0705-PFD-LCRA-SurfaceWater.pdf>

<sup>4</sup> The Science: <https://www.environmental-stewardship.org/lost-pines-groundwater-conservation-district/lcra-griffith-league-ranch-application-2018/the-science-behind-our-protest-of-lcras-application/>