Proposed Desired Future Condition(s) for Aquifer(s) in GMA 12

Environmental Stewardship
Comments To District Boards
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To:
Brazos Valley GCD Board of Directors
Fayette County GCD Board of Directors
Lost Pines GCD Board of Directors
Mid-East Texas GCD Board of Directors
Post Oak Savannah GCD Board of Directors

Dear Board of Directors,

I want to thank you for allowing us the opportunity to share our concerns about the Proposed Desired Future Conditions with you. Environmental Stewardship's primary concerns relate to the predicted impacts of the new Proposed DFCs based on Run S-12 on surface waters as compared to the predicted impacts of the Currently Adopted DFCs on the Colorado River. Our second concern, which is addressed by the Simsboro Aquifer Water Defense Fund (SAWDF), is the impact of the, now active, Vista Ridge pumping on exempt domestic and irrigation wells in Burleson and Lee Counties. Landowners have, within six months of the initiated pumping, been experiencing damage to their wells.

When domestic wells are being impacted in this manner, the aquifers that supply water to these wells are likewise being impacted. Furthermore, the negative impact of this current pumping, along with proposed permitted pumping, stems from the same hydrological conditions that impact outflows of groundwater to surface waters such as the Colorado and Brazos rivers and their tributaries. As such, it is incumbent on the districts to take adaptive management actions to remedy this situation rather than to approve very significant increase in the amount of pumping without understanding the nature of the fundamental problems that exist.

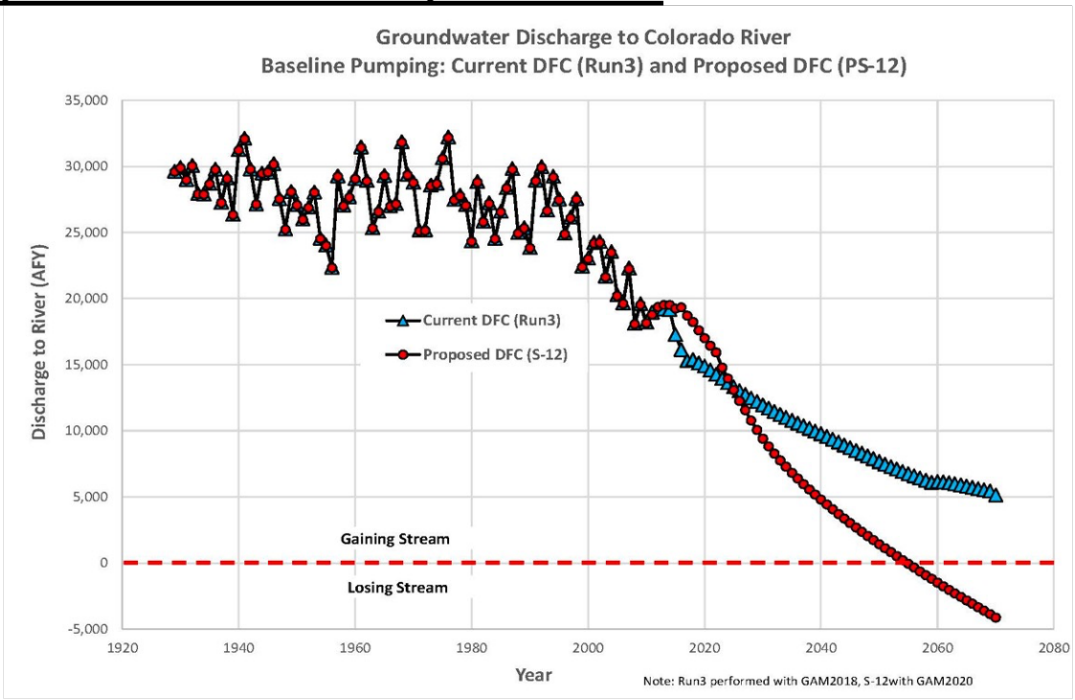
Our over-arching concern relates to the GMA-12 management policies that have rapidly evolved over the last 9 months. These policies, which are imbedded in the Proposed DFCs, will have serious immediate and future consequences on management policies within the joint-planning process. Such policies should help all the districts manage the development of the aquifers in a way that is sustainable, and balances pumping against the conservation and protection of surface waters and aquifers, while retaining their ability to curtail (slow down pumping) when the damage is imminent **Most urgently, the impact of changes in management policies that have a negative impact on the ability of Districts to curtail pumping need to be resolved, and agreed by the districts, prior to new DFCs being adopted.**

It is for these reasons that we respectfully ask that your Board reject the Proposed DFCs and remand them back to the GMA for revision.

I. IMPACTS OF PROPOSED DFCs ON SURFACE WATERS

IMPACT OF PUMPING ON OUTFLOWS TO MAIN STEM COLORADO RIVER

Adopted 2017 DFCs vs. Proposed DFCs:



Predicted reduction of discharge of groundwater into the mainstream Colorado River due to Current DFC Run 3 and Proposed DFCs S-12 (George Rice, New GAMs).

This graphic represents the impacts that are predicted by the new GAM. The graph shows the relationship between the pumping associated with each DFC and the impact on outflows to the Colorado River

- Blue is the Currently Adopted 2017 DFCs as depicted by Run 3 using the NEW GAM.
- Red is the Proposed DFCs based on Scenario S-12.
- The Historical Calibration period is from 1930 to 1995
- The Developmental Period is 1995-2070
- Gaining Stream vs Losing Stream Redline

Comparing the two runs we see that the greater the amount of groundwater being pumped, the greater the reduction in discharge from the aquifers to the main stem of the Colorado River. This trend toward reversing the groundwater-surface water relationship over the next 50 years is undisputed. This is an example of how the model serves to demonstrate the difference between these two runs, in this case the two DFCs. The key difference is that the Current DFCs do not cause the relationship between the river and the aquifer to reverse, whereas the S-12 Scenario causes the river to change from a gaining to a losing stream somewhere in the 2050-60 timeframe.

IMPACT OF PUMPING
ON OUTFLOWS TO MAIN STEM COLORADO RIVER

Discharge to Colorado River - AFY (1)				
Year	Pre-Development	Early Pumping	Current DFC	Proposed S-12
1930	29,600			
1995	27,500			
2011		18,700		
2070			5,150	-4,100
Change from 1930	**-2,100**	**-8,800**	**-22,350**	**-31,600**
	-7%	**-37%**	**-83%**	**-114%**

(1) Data From Rice Current vs Proposed DFC Graph

This table gives a quantitative view of the predictions from an historic perspective. It is very clear that the early pumping -- from around 1995 to 2011 -- caused considerable impact on the river; about a 37% decline in discharge to the Colorado River compared to 1930. Following that early unregulated pumping time period is the Current DFC time period. This is the regulated joint-planning phase where desired future conditions are being established. **In the currently adopted DFCs column the predicted decrease in discharges to the Colorado River is whopping *83% less discharge* than the historical outflows.**

In the Proposed DFCs column, the predicted decrease in discharge is an additional 31% more that the Current DFCs. This results in a devastating *114% less discharge than historic flows and reverses the relationship between the river and the aquifers.*

- Whereas the quantity of pumping in the 2017 adopted DFCs is predicted to cause a significant decrease in outflows to the river; an impact that may be unreasonable in-and-of itself,
- The Proposed DFCs are predicted to decrease outflow to the point that the Colorado River LOSES water to the aquifers. **This is an impact that Environmental Stewardship sees as a *bright line between what is reasonable and what is unreasonable.***

Hydrologically, this is a complete reversal in the flow of groundwater and surface water relationship. At this point the river starts contributing water to the aquifer on an on-going basis. This sets up hydrological conditions for the RIVER could go dry during drought periods. But more certainly, it sets up condition where the river will lose its biological and ecological resilience that enables it to bounce back to being an ecologically sound environment after a serious drought.

The Proposed DFCs based on Scenario Run S-12 cross the bright line and are unreasonable.

At the December 2020 GMA-12 meeting, Environmental Stewardship provided the GMA Representatives with the results of an analysis of the impacts of current and proposed pumping on the Colorado River from the perspective a surface water scientist - Joe Trungale – using surface water modeling techniques. Mr. Truangale used the environmental flow standards as a means of evaluating the impact of reduce groundwater discharges to the Colorado River.

This evaluation also predicted unreasonable impact of groundwater pumping on the Colorado River.

Senate Bill 3, the basis for the environmental flow standards, established that maintaining the biological soundness of the state's surface waters is of great importance to the economic health and general well-being of Texans.

In summary:

- The Colorado River at Bastrop and below is fully appropriated to surface water right holders. As such, ***any decrease in flow due to reduced groundwater discharge will negatively impact these permit holders.***

- ***Such reductions in flow also impact the ecological health of the river and its ability to recover from drought conditions***. As you might recall, the lower Colorado basin was intensively studied during the LCRA/SAWS project by many different scientists and engineers. These were major studies making this basin one of the most studied basins in the State. Based on these studies instream flow standards were set at several gages on the river – including Bastrop. The intent is that these standards be maintained at recommended frequencies year round.

- These standards are not being met at recommended frequencies, and ***any reduction in flow due to groundwater pumping will likely result in future reductions in these frequencies, damaging the ecology of the river. Such damage to the ecology of the river is a trend in the wrong direction, and we consider this to be an unreasonable impact.***

Environmental Stewardship has demonstrated, from a groundwater availability perspective and from a surface water availability perspective, that the predicted pumping will likely result in *unreasonable* impacts to the Colorado River. Certainly, the Proposed S-12 DFCs cross the line into unreasonable territory and should be *rejected*. If not outright rejected, the potential of unreasonable harm must be recognized and dealt with.

As such, it is our view that the only reasonable option is to r*eject* the Proposed DFCs and *remand* the process back to the GMA Representatives to develop DFCs using the Currently Adopted DFCs as the basis for setting DFCs that are not predicted to cross this hydrologically and ecologically unreasonable line of impact.

II. MANAGEMENT POLICIES AND PRACTICES: THE ROLE OF NON-EXMEPT PUMPING IN DEVELOPMENT OF DESIRED FUTURE CONDITIONS

Management policies and practices are in a state of flux in Groundwater Management Area 12. Joint planning among districts is supposed to help all of the districts manage the development of the aquifers in a way that balances pumping against the conservation and protection of aquifers, while retaining their ability to curtail (slow down pumping) when the damage is imminent However, the standards for developing desired future conditions in GMA-12 are changing, yet there is no agreement between the District Representatives on the changes. As a result, the representatives from four of the districts have imposed their will on the fifth district rather than reaching a workable and agreeable

resolution of the issues involved. Certainly, this does not help all of the districts achieve the joint planning objectives.

Per the Texas Water Code, joint planning among districts is supposed to help all of the districts accomplish their *individual* management goals, as reflected in their management plans. Stated another way, the Code does not require "GMA-12" --- which TWDB does not consider to be a legal entity --- to be the tail that wags the dog. Instead, it is the other way around.

The Code directs that the district representatives, as a joint planning body only, are to *consider the effectiveness of the individual district management plans for conserving and protecting groundwater and preventing waste.* They are to do this by considering how the *individual district's management goals achieve that district's desired future conditions, how those DFCs impact on planning throughout the management area, and how effective these measures in the management area generally*[1]. **Groundwater districts, not groundwater management areas, are the state's preferred regulatory managers of groundwater.**

Unfortunately, in this round of joint planning, an important concept has been overlooked, leading to an *error* that is embedded in the Proposed DFCs based on pumping file S-12.

In this round of joint planning in GMA-12, it was inappropriate for the districts, as a group, to require that the member districts take a uniform approach across all the districts to the pumping file -- the file upon which the desired future conditions are based. Each district is entitled to respond to its electorate to adopt its own pumping and curtailment strategy[2]. So, the pumping file for each district should reflect its own approach. It makes perfect sense to be different from one district to another, just as aquifer conditions, aquifer demands, and local impacts may differ widely.

Using different strategies (assumptions) for the different pumping files for different districts is what the law commands, to be respectful of districts as the *local* groundwater management entities. **Nothing about participating in a GMA is intended to undermine the autonomy of each district.**

Certainly, this includes the ability for all of the districts to balance pumping against conservation while retaining their ability to curtail (slow down pumping) when damage is imminent. Instead, the GMA districts voted to have each district's DFCs conform to a single pumping file configuration, and that configuration is embedded in S-12.

An important policy discussion took place at the March 18 meeting of the GMA-12 District Representatives leading to a 4-1 vote on the new Proposed DFCs. The representatives took up a discussion of the controversial GAM Run S-12 and whether to use it as the base run for the proposed DFCs. Much of the controversy over the appropriate pumping file to be used was sparked by a November 10, 2020, threatening letter from Paul M. Terrill III[3] to Gary Westbrook regarding Blue Water Vista Ridge Desired Future Conditions.

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[1] Texas Water Code, Chapter 36.108(c)(1-4)

[2] EAA v Day, p 30. While districts have broad statutory authority,[109] their activities remain under the local electorate's supervision.[110] Groundwater conservation districts have little supervision beyond the local level. Districts are also required to participate in joint planning within designated groundwater management areas ("GMAs").[113]

[3] Terrill III, Paul M., November 10, 2020, to Gary Westbrook, General Manager, Post Oak Savannah GCD re: Blue Water Vista Ridge – Desired Future Conditions. https://www.environmental-stewardship.org/wp-content/uploads/2021/04/JamesBeneBluewaterComments_2020-11-10-BWVR-to-POSGCD-re-DFCs.pdf

After discussion they voted to use the S-12 model that was favored by 4 of the 5 District Representative. Post Oak GCD, the District that received the letter, voted against the S-12 pumping file. Though the subject had been discussed during several of the previous meetings, below is a summary of the 33 minute discussion during the March 18, 2021, meeting. And here is a link to a video of the discussion so you can hear it "live" if you prefer; jump to time 8:20 in the video.

In his plea to maintain Post Oak's manage policy, Mr. Westbrook, told the other District Representatives, "**This is management we have had in place for over a decade that we believe tracks our mission statement considering conservation is important while recognizing that property rights are important.**

We also recognize the balance that is required in considering the property rights of those who wish to produce as well as the property rights of those who wish to conserve for the future. We are very very adamant about our belief that when we are required, at the GMA level, to consider all nine factors, that we believe our approach does give more consideration to conservation than just putting everything in a pumping file and rolling forward.

We respectfully request that you allow us to manage the Carrizo as we have always desired. Once we set the precedent, and I believe this would be a precedent, it will be hard to undo. If our DFC is raised so much higher, then really, we won't be able to do any management. You can't curtail until you approach those desired future conditions because these [new] DFCs would have to be allowed.

By law you can't go past them, but you have to allow them. And so that is the whole point to the challenge of this pumping file issue, is that once we determine that this is the file that is going to be used, then **the [new] number that comes back is 178 ft of drawdown. And so now, another 100 wells have to be mitigated. So that is another social-economic impact to landowners, and that is the balance we are trying to achieve, but we can't achieve it if you force us into that 18,000 acre-feet per year [S-12] pumping file. The last round [desired future condition] was not 18,000 acre-feet per year in the Carrizo but was a much smaller number [7,000 acre-feet per year per Steve Young."]**

Environmental Stewardship has verified, through direct observation of the values in the pumping file associated with the currently adopted DFCs, that Post Oak Savannah's pumping from the Carrizo Aquifer was as listed in the following table.

Pumping from the Carrizo Aquifer (AFY)
Post Oak Savannah GCD

Year	DFCRun3	S-12
2020	4706	11,191
2040	6119	17,459
2070	7060	18,158

Per George Rice, 4/12/2021

In the vote that followed the above discussion, the four districts that were concerned about being drawn into a lawsuit if Blue Water sued Post Oak, forced their will on Post Oak Savannah GCD. In doing so, they essentially eliminated Post Oak's ability to curtail the Vista Ridge project even though, after only about six months of pumping at the higher withdrawal rate, dozens of landowner's domestic wells in Burleson and Lee Counties are being damaged, costing 10's of thousands of dollars to repair.

Worse, the damage to the aquifers in these counties continues, and will continue, for many decades unless the Proposed DFCs are rejected and revised.

When domestic wells are being impacted in this manner, the aquifers that supply water to these wells are likewise being impacted. Likewise, the negative impact of this current pumping, along with proposed permitted pumping, stems from the same hydrological conditions that impact outflows of groundwater to surface waters such as the Colorado and Brazos rivers. As such, it is incumbent on the districts to protect these resources by taking adaptive management actions to remedy this situation rather than to approve double the amount of pumping without understanding the nature of the fundamental problems that exist.

The over-arching concern is the unresolved management policies that have rapidly evolved within the jurisdiction of the five groundwater conservation districts, over the last 9 months. These policies, reflected in the Proposed DFCs, will have serious immediate and future consequences on management policies within the joint-planning process. Most urgently, the impact of changes in management policies that have a direct negative impact on the ability of Districts to manage curtailment of pumping when the DFCs are exceeded need to be resolved and agreed policies adopted before future DFCs are adopted. As such it is imperative that the Proposed S-12 DFCs are rejected and sent back to the GMA for revisions.

Since much of what drove the decision and decision to force Post Oak GCD to use the S-12 GAM run was the threats of litigation, Environmental Stewardship requested that its legal counselor, Eric Allmon, prepare a letter on the role of non-exempt pumping in the development of desired future conditions. The main point of the letter is to address the issue of the threats of litigation that seem to be driving the position by some that the DFCs must include 100% of all permitted pumping in order to avoid litigation. Mr. Allmon lays out the legal framework and court findings that support the position that the DFCs must *balance* conservation and protection of the aquifers and the 9 factors required to be considered against development in order to sustain the DFCs against litigation by water marketers and others.

We encourage you to read Mr. Allmon's letter[4] and take it to heart as you deliberate on the adoption of DFCs. This brief was provided to all of the GMA-12 District Representatives and their respective Board of Directors on June 3, 2021.

III. OUR REQUEST

We are asking you, as the Board of Directors in your respective Districts to *reject* these Proposed DFCs in favor of DFCs based on:

- **sustainable management of the aquifers,**
- **maintaining the resilience of the Colorado River to drought, and**
- **protection of exempt landowner domestic and livestock wells.**

It is important that you recognize that there is plenty of time to revise the DFCs. In fact, the statutes mandate revisions based on public comments. The GMA has until January 5, 2022, to make and submit revisions. We are requesting that the revisions be based on Scenario Run S-3 which represents the currently adopted DFCs. In this scenario, the pumping file from the old GAM was modified slightly to be able to be run on the new GAM. The following section provides information on our expectations regarding revisions to the DFCs.

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[4] Allmon, Eric, Perales, Allmon & Ice, P.C. June 3, 2021. Initially addressed to Sidney Youngblood, President, Post Oak Savannah GCD, and provided to all District Boards by email from Elena M. Solimano, on the same date. https://www.environmental-stewardship.org/wp-content/uploads/2021/05/2021.06.03-ES-DFC-Letter.pdf

IV. RECOMMENDATIONS FOR REVISING DFCs

In a *resilient* sustainability model that takes into consideration the ecology of the region, the amount of groundwater that can be pumped must be greater than or equal to the amount required to meet both human and environmental needs for the foreseeable future. As such, a major consideration is to determine the amount of groundwater and surface water needed to sustain both human demands and environmental health[5]. Based on this total demand, the amount of groundwater that can be *sustainably pumped* must be such that the surface waters are also conserved and protected while also protecting the property rights of exempt domestic wells. Modeling consistently demonstrates that the majority of the groundwater pumped originates as surface water. Only a minor portion of the water pumped is sourced from groundwater storage.

Proposed Desired Future Condition(s):

Guiding Principles:

In conformance with the Conservation Amendment of the Texas Constitution, it is the duty of Groundwater Conservation Districts to conserve and preserve the natural resources of the state -- our groundwater, our rivers, our springs, and our bays ... our ecosystems — by passing laws, rules, and for the purposes of this effort, adopting desired future conditions, that achieve a balance between conservation and development of those resources *in perpetuity*. To protect our aquifers as we found them while respecting the ownership rights of landowners.

Though the ability to preserve an aquifer for future generations is not totally in our control — its rate of replenishment, and its hydrologic characteristics, are largely a function of Mother Nature and must be accepted and respected — development of an aquifer, and ultimate depletion of an aquifer and/or the surface water and ecosystems which depend on groundwater, *is the voluntary human action in which we are currently engaged.*

The essence of conservation and preservation of an aquifer resource is that the rate at which we deplete our aquifers must be in balance with the protection of the aquifer and its associated surface waters. That the depletion is not driven only by the desire for development, against which we simply wait for damage to the ecosystem's sustainability before attempting to bring it back “in balance”. Only when a definite "conservation standard” describing a sustainable ecosystem is established — an ecosystem that is preserved in perpetuity — can we then determine how much of that aquifer we can develop in balance with the conservation standard.

Since the inception of the DFC joint planning process, GMA-12 has always started by exploring the production-side of the balance bar. ES and SAWDF request that GMA-12 begin the next joint planning process by exploring conservation and protection of the existing ecosystem *for the common good of future generations*.

[5] A sound ecological environment as defined in Senate Bill 3.

As a practical matter, GMA-12 should use the best science available, along with the GAM, to predict the amount of groundwater that can be continuously pumped over many centuries[6] without damaging the surface waters from which much of the water pumped is ultimately sourced[7]. In modeling these conditions, GMA-12 is required to fully consider the nine (9) items prescribed by the legislature while seeking to satisfy the mandate to maximize groundwater pumping to the extent possible while *balancing* the development of the groundwater resources against the requirement to conserve and protect.

ES & SAWDF Request:

When we next review and adopt DFCs, Environmental Stewardship and SAWDF will be requesting that the DFCs be revised in such a way to be based on the following three criteria:

1. Sustainable management of the aquifers (as described above, not just sustainable pumping),
2. Maintain the resilience of the Colorado River to drought conditions by maintaining its gaining relationship with the aquifers, and
3. Protection of exempt landowner domestic and livestock wells.

As a starting point, ES & SAWDF are requesting that the GMA representatives make a GAM Run using S-3 pumping file and the methodology recently used by neighboring GMA-11 to establish a baseline for additional modeling. In the GMA-11 process, the results of a base simulation (Technical Memorandum 20-05[8]) was developed for the purpose. Based on the baseline and a desire to provide a steady pumping rate for use in regional water planning, GMA 11 ran an additional set of simulations that resulted in a constant pumping scenario for each county-river basin-aquifer unit in GMA 11. Technical Memorandum 21-01[9] Draft 2 reports on the development and results of the 33 iterations used to reach a constant pumping scenario[10] that would be expected to be sustained[11] if the model were

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[6] TWDB used a 500-year time to estimate the maximum sustainable pumping level for the first adopted 2011 DFCs. June 13, 2012. Memorandum to TWD Board of Directors. SUBJECT: Briefing, discussion, and possible action on appeals of the reasonableness of the Desired Future Conditions adopted by the groundwater conservation districts in Groundwater Management Area 12 for the Sparta, Queen City, Carrizo-Wilcox, Calvert Bluff, Simsboro, Hooper, Yegua-Jackson, and Brazos River Alluvium aquifers, page 17.

[7] GMA-11 Explanatory Report cited herein predicts that 72% of the groundwater pumped will ultimately come from surface water sources (alluvium).

[8] Hutchison, William R, Ph.D., P.E., P.G. December 30, 2020. GMA 11 Technical Memorandum 20-05. Base Simulation for Joint Planning with Updated Groundwater Availability Model for the Sparta, Queen City, and Carrizo-Wilcox Aquifers

[9] Hutchison, William R, Ph.D., P.E., P.G. February 28, 2021. GMA 11 Technical Memorandum 21-01Draft 2. March 4, 2021. Adjusted Pumping Simulations for Joint Planning with Updated Groundwater Availability Model for the Sparta, Queen City, and Carrizo-Wilcox Aquifers.

[10] Note: This scenario did not include the protection of surface waters and resulted in a pumping quantity that sources 54% of the water from surface waters (Induced inflow from the alluvium). The final proposed DFCs sources 72% of the pumped water from surface waters.

[11] Per Hutchison: The result of the simulations is constant pumping from 2014 to 2080. Tables 2, 3, and 4 of the Tech Memo 21-01 show it tabular form (the last two columns show the results of Scenario 33) for each county-aquifer unit. This is in contrast to the Base Scenario that has several instances of pumping reductions from 2014 to 2070. Maybe your definition of "sustainable" pumping and my use of "constant" pumping are not the same thing. My definition of constant pumping is simply 2014 to 2080 as simulated for the joint planning process. Based on the model results, I believe that this level of pumping would remain unchanged if I kept running the model, although I have not actually run the model beyond 2080. There is no specific reason I can think of that would suddenly cause the pumping rate to drop if the model was run for any number of years.

run for a longer period of time. The process is discussed in GMA-11's Explanatory Report (Draft 2)[12]. All these GMA-11 documents are available on its public information[13] Google Drive.

To accomplish the objectives in criteria1 and 2 above -- sustainable manage while protecting the resilience of surface water through a drought of record and establish a conservation bookend -- different limitation would be placed on GAM Run 3. Rather than keeping pumping steady through the planning periods, as was done in GMA-11 to meet its objective, outflows to surface waters would be held constant at the 2011outflow rate[14] throughout the planning period by adjusting pumping in the districts. This will establish a conservation bookend to be used in balancing conservation and development relative to consideration #4 as DFCs are developed.

To accomplish the objective in criteria 3 above -- a methodology will need to be developed that estimate impacts on shallow domestic wells that places additional limitation on GAM Run 3.

[12] Hutchison, William R, Ph.D., P.E., P.G. February 28, 2021. Desired Future Condition Explanatory Report (Draft 2) Carrizo-Wilcox/Queen City/Sparta Aquifers for Groundwater Management Area 11.

[13] GMA-11 public information google drive https://drive.google.com/drive/folders/1ronw7ke38_lU4BHGEHbQQ0j9D7fYmFr?usp=sharing

[14] A gaining relationship to the aquifers.

Proposed AQUIFER DFCs and Measuring/Calculating Method

Please be as detailed as possible in describing your proposed DFC. Include the quantifiable value and a description of the method for measuring or calculating the value. Attach additional pages as needed.

Aquifer	Proposed DFC and Measuring/Calculating Method
Carrizo Aquifer	ES requests that the districts develop DFCs based on DFC Run 3 (New GAM) that are sustainable with respect to long-term management of the aquifer where the amount of pumping, whether or not permitted, is determined by a process that protects surface waters and exempt domestic wells.
Calvert Bluff Aquifer	ES requests that the districts develop DFCs based on DFC Run 3 (New GAM) that are sustainable with respect to long-term management of the aquifer where the amount of pumping, whether or not permitted, is determined by a process that protects surface waters and exempt domestic wells.
Simsboro Aquifer	ES requests that the districts develop DFCs based on DFC Run 3 (New GAM) that are sustainable with respect to long-term management of the aquifer where the amount of pumping, whether or not permitted, is determined by a process that protects surface waters and exempt domestic wells.
Hooper Aquifer	ES requests that the districts develop DFCs based on DFC Run 3 (New GAM) that are sustainable with respect to long-term management of the aquifer where the amount of pumping, whether or not permitted, is determined by a process that protects surface waters and exempt domestic wells.
Queen City Aquifer	
Sparta Aquifer	
Yegua-Jackson Aquifer	
Brazos Alluvium Aquifer	
Colorado Alluvium Aquifer	ES requests that the districts initiate the development of DFCs for this aquifer in anticipation of adopting such DFCs during the next planning cycle.

Consideration of Proposed Desired Future Condition(s)

The Texas Water Code requires that the GMA develop DFCs that "provide a balance between the highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater and control of subsidence in the management area." In the space below, or on additional attached pages, please provide your considerations with regard to the nine items that must be considered, per the Texas Water Code, for the proposed DFC(s).

CONSIDERATION 4 – "Other environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water:"

Please see introductory letter to GMA-12 Representatives.

CONSIDERATION 7 – "The impact on the interests and rights in private property, including ownership and the rights of management area landowners and their lessees and assigns in groundwater:"

Please see introductory letter to GMA-12 Representatives.