

Draft Work Process Document for the GMA 1 Joint Planning efforts prepared for use by the Panhandle Groundwater Conservation District

This Draft Work Process Document is based on required elements to review and adopt Desired Future Conditions as required by Texas Water Code §36.108

Prepared by Bill Mullican, P.G.,

June 24, 2013

The following work process document has been developed in order to provide guidance to participants in the ongoing joint planning efforts in Groundwater Management Area 1 (GMA 1). As a result of the passage of Senate Bill 1282 in the recently completed Texas Legislature, all GMAs must complete Phase 3 below by May 1, 2016.

Under current law, the joint-planning process may be divided into the following five, relatively distinct efforts or phases. These are:

1. If there are two or more Groundwater Conservation Districts (GCDs) in a GMA, the individual GCDs are to forward to the other GCDs a copy of their new or revised management plan. The Boards of the GCDs are to review and compare the management plans with other management plans in the GMA. On an annual basis, GCD representatives are to meet at least annually to review management plans, accomplishments of the GMA, **and proposals to adopt new or amend existing desired future conditions** (Texas Water Code (TWC) §36.108(c)). The highlighted section is emphasized because during this round of planning (in contrast to the last round), the first step in the joint planning process, as amended by Senate Bill 660 in 2011, is for GCD representatives to compile a comprehensive list of proposed DFCs to be considered during the joint planning process by the GCD representatives in the GMA. As currently understood, a list of proposed DFCs shall be agreed to by the GCD representatives in a GMA before beginning the formal process of considering the various potential impacts of the DFCs as required by TWC §36.108(d). In reviewing the management plans, the GCD representatives shall consider (1) the goals and impacts of each management plan, (2) the effectiveness of measures

included in each management plan on the conservation, protection, and prevention of waste of groundwater in the GMA, and (3) any other matters the individual boards deem relevant (TWC §36.108(b-c));

2. Before Phase 1 can be completed, individual GCDs (typically by resolution) shall decide any proposals for potential amendments to currently adopted DFCs for consideration by the GMA representatives (this task is not explicitly articulated in statute, however, this appears to be the logical bridge step between GCDs and the GMA representatives);
3. Using the list of proposed DFCs, the GCD representatives shall then go through a process of considering the following (readers note – in order to ensure clear presentation of the specific requirements of TWC §36.108(d)(1-9), the following subsections have been principally excerpted from statute):
 - a. Aquifer uses or conditions within the management area, including conditions that differ substantially from one geographic area to another;
 - b. Water supply needs and water management strategies included in the state water plan (in this case, the 2012 State Water Plan);
 - c. Hydrological conditions, including for each aquifer in the Groundwater Management Area the total estimated recoverable storage as provided by the Texas Water Development Board Executive Administrator, and the average annual recharge, inflows, and discharge;
 - d. Environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water;
 - e. The impact on subsidence (note – this is not applicable to GMA 1);
 - f. Socioeconomic impacts reasonably expected to occur;
 - g. 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 as recognized under Texas Water Code §36.002;
 - h. The feasibility of achieving the Desired Future Condition; and
 - i. Any other information relevant to the specific Desired Future Conditions [uses or conditions of an aquifer within the Groundwater

Management Area that differ substantially from one geographic area to another].

The DFCs proposed must 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 GMA (TWC §36.108(d-2)). The results of all required considerations listed above shall be provided to the GCDs for use during Phase 4 (see below) and then integrated into the Explanatory Report at the conclusion of Phase 5. TWC §36.108 is silent on what “consider” means in this phase of the joint planning process. At a minimum, it is clear that the GMA representatives will want to clearly establish in the Explanatory Report the date, nature, and results of any GMA meeting during which the nine “considerations” listed above were addressed.

4. Once the GCDs receive the proposed DFCs from the GMA, the GCDs must then post notice, hold public hearing, and take comments on proposed DFCs and then submit comments along with any recommended changes resulting from comments to the GMA; and
5. GMA representatives then meet to review each GCD’s compiled comments and any proposed changes to proposed DFCs. Then, by 2/3 vote of GCDs representatives, DFCs for all relevant aquifers must be finally adopted and submitted to the Texas Water Development Board along with an Explanatory Report documenting that statutorily required considerations have been duly met. It is important to note that under this new process, the Explanatory Report is to function as the Administrative Record during any potential legal proceedings during which petitions are decided. Therefore, all steps in the process, including discussions on each of the required “considerations” will need to be thoroughly documented in the Explanatory Report.

INITIAL - GMA 1 Joint-Planning Timeline

The following proposed timeline for the ongoing joint-planning efforts in Groundwater Management Area 1 (GMA 1) is based on close coordination with the High Plains Aquifer System Groundwater Availability Model (HPAS GAM) project currently ongoing by the Texas Water Development Board. The proposed meeting goals are designed to maximize progress throughout this effort and minimize or eliminate duplicative efforts. Based on the passage of Senate Bill 1282 and Texas Water Code Section 16.053(e)(2-a), there are two primary dates critical to the joint-planning process:

- May 1, 2016 – deadline for all GMAs to formally propose DFCs for all relevant aquifers,
- November 2016* - deadline for final adoption of DFCs and submission of Explanatory Report, including the statement of adopted DFCs to the TWDB. (*This date is based on historical practice of the TWDB formally adopting the State Water Plan in November prior to the statutory deadline of January 5, 2017, for the current planning cycle).

The proposed timeline includes a sequencing of the nine factors to be considered in the joint-planning process as described in Texas Water Code Section 36.108(d)(1-9).

GMA 1 Meeting #1 – January 2014

Goal of meeting

- Discussion on cooperative agreement between District Representatives (including execution of predictive simulations).
- Discuss use of current DFCs and existing estimates of Modeled Available Groundwater during “Considerations” process included in Texas Water Code Section 36.108 (d)(1-9). Due to the timing of the ongoing HPAS GAM project, it will be necessary for GMA 1 District Representatives to agree conceptually to an approach for addressing required “considerations” before the updated model is available for predictive simulations.

- Discuss process and approach for developing pumping scenarios to be utilized in predictive simulations.

GMA 1 Meeting #2 – April 2014

Goal of meeting

- Presentation on the draft HPAS Conceptual Model Report.
- Consideration of aquifer use in GMA 1, including conditions that differ substantially from one geographic area to another.
- Consideration of water supply needs and water management strategies (WMS) included in the 2012 State Water Plan.
- Discuss/review possible approach for developing pumping scenarios to be utilized in predictive simulations.

GMA 1 Meeting #3 – July 2014

Goal of meeting

- Approval of meeting minutes from Meeting #2 regarding considerations.
- Consideration of proposed DFCs on environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water.
- Consideration of impacts of proposed DFCs on subsidence.
- Consideration of the socioeconomic impacts reasonably expected to occur as a result of the proposed DFC.

GMA 1 Meeting #4 – October 2014

Goal of meeting

- Approval of meeting minutes from Meeting #3 regarding considerations.

- Consideration of the impacts of proposed DFCs on the interests and rights in private property, including ownership and the rights of landowners and their lessees and assigns in groundwater.
- Consideration of the feasibility of achieving the proposed DFCs.
- Discuss annual joint-planning tasks outlined in Texas Water Code Section 36.108(c).

GMA 1 Meeting #5 – January 2015

Goal of meeting

- Approval of meeting minutes from Meeting #4 regarding considerations.
- Presentation on the HPAS GAM project.
- Consideration and agreement on approach for developing pumping scenario package(s) for predictive simulations.
- Consideration of hydrological conditions, including for each aquifer in GMA 1, the total estimated recoverable storage as provided by the TWDB Executive Administrator, and the average annual recharge, inflows, and discharge.

GMA 1 Meeting #6 – April 2015

Goal of meeting

- Approval of meeting minutes from Meeting #5 regarding considerations.
- Presentation on results of predictive simulations.
- Discussion on need for and identification of additional predictive simulations and other analysis necessary prior to adoption of proposed DFCs.

GMA 1 Meeting #7 - #9 – April, July, and October 2015

Goal of meetings

- Approval of meeting minutes.
- These three meetings are reserved for completing all necessary efforts prior to the adoption of proposed DFCs. If one or more of these meetings are determined to be unnecessary, then the schedule will simply be accelerated.
- Discuss annual joint-planning tasks outlined in Texas Water Code Section 36.108(c).

GMA 1 Meeting #10 – January 2016

Goal of meeting

- Adoption of proposed DFCs and draft Explanatory Report for distribution to all groundwater conservation districts (GCDs) in GMA 1 for a 90 day public comment period including required public hearings.

GMA 1 Meeting #11 – 12 May – August 2016

Goal of meetings

- Approval of meeting minutes.
- After the 90 day public comment period ends and GCDs hold the required public hearing, the GCDs are then to submit to GMA 1 a summary of relevant comments received, any suggested revisions to the proposed DFCs, and the basis for the revisions. At this meeting(s), district representatives are to consider comments and suggestions received and finally adopt the DFCs.
- Review and adopt Explanatory Report (containing statement of DFCs) for submission to the TWDB.
- Discuss annual joint-planning tasks outlined in Texas Water Code Section 36.108(c).

TABLE OF CONTENTS

I. INTRODUCTION..... 1

II. CURRENT STATUS OF GMAS IN TEXAS 1

III. WHAT CHANGED IN THE JOINT-PLANNING PROCESS BETWEEN THE FIRST AND SECOND
ROUND..... 2

IV. CONSTRUCTING THE EXPLANATORY REPORT 3

V. SUMMARY 6

APPENDIX A 7

APPENDIX B 9

NAVIGATING THE NEW REQUIREMENTS FOR JOINT PLANNING – A PRACTITIONER'S PERSPECTIVE

Recent changes to the required joint-planning process within groundwater management areas, contained in Texas Water Code Section 36.108, evidence the rapidly evolving process of groundwater management in Texas. The newly required Explanatory Report, which calls for requisite statements of desired future conditions for relevant aquifers, necessitates a significant expansion of technical and policy issues needing consideration during the joint-planning process.¹

I. INTRODUCTION

First, in the spirit of full disclosure to the reader, this discussion is not an analysis of the legal weight to be placed, for example, on the newly required explanatory report² or considerations of the impacts of the formal introduction of socioeconomic impacts³ and private property rights⁴ into the joint-planning process. Rather, from a practitioner's perspective actively engaged in the process, this is a discussion that provides (1) a snapshot of current activities throughout the 15 groundwater management areas (GMAs) in Texas, (2) a brief discussion of what changed in the joint-planning process between the initial round (September 1, 2005 – September 1, 2010) and the current round (September 1, 2010 – May 1, 2016), and (3) the new requirements of the explanatory report.⁵

II. CURRENT STATUS OF GMAS IN TEXAS

The joint-planning process required by Texas Water Code (TWC) section 36.108 may be divided into two primary components. The first component involves specified activities that groundwater conservation districts (GCDs) must accomplish on a continuing basis in each GMA. These activities include:

- The sharing and review of currently adopted management plans with other GCDs for their consideration and comparison with other management plans in the GMA,⁶
- GCD representatives are to meet at least annually to conduct joint planning,⁷ including:
 - Review of currently adopted management plans;
 - Review of accomplishments of the GMA; and
 - Review of proposals to adopt new or amend existing desired future conditions (DFCs).

At least once every five years, the GCD designated representatives are to, after a prescribed public process, adopt DFCs for relevant aquifers in the GMA.

With the passage of Senate Bill 660 by the 82nd Texas Legislature in 2011,⁸ there were several changes made to the process required for final adoption of DFCs. As a result, it is important for those directly involved in the joint-planning process to understand the additional requirements and complexity of the amended process in order to meet the planning deadlines in statute. There are 16 GMAs in Texas (see Figure 1), 15 of which have one or more confirmed GCDs located in whole or in part within the boundaries of the GMA.⁹ Only GMA 5, located in El Paso County and the southwestern portion of Hudspeth County, does not have a GCD covering at least some portion of the GMA. Table 1 provides a snapshot of the current status in the joint-planning process in each of the 15 GMAs with a focus on approach to preparation of the newly required explanatory report (ER). This information was provided, in part, by staff at the Texas Water Development Board responsible for supporting GMAs. All 15 GMAs are actively working to adopt or readopt DFCs by the statutory deadline. However, as noted in Table 1, certain GMAs are much farther along in the process than others. For example, GMAs 13 and 14 have secured consultants to assist in the joint-planning process and preparation of the ER. Alternatively, GMAs 2, 4, and 11 have met annually as required to review accomplishments in the GMAs but have yet to begin formal efforts to meet new

¹ Bill Mullican, the author of this article, is the Principle of Mullican and Associates, which specializes in strategic water initiatives in Texas and throughout the United States. The comments and opinions expressed within this article are solely those of the author, and do not represent the views or positions of any of the author's clients.

² Texas Water Code § 36.108(d-3).

³ TWC § 36.108(d)(6).

⁴ TWC § 36.108(d)(7).

⁵ TWC §§ 36.108(d)(1 – 9) and (d-1) through (d-4).

⁶ TWC § 36.108(b).

⁷ TWC § 36.108(c).

⁸ Act of May 29, 2011, 82nd Leg., R.S., ch. 1233, 2011 Tex. Gen. Laws 3287.

⁹ For map of GMA boundaries in Texas, see <http://www.twdb.texas.gov/mapping/doc/maps/GMA%20map%20208x11.pdf>.

requirements and either do not plan or have not initiated discussions on whether or not to contract for support services to assist in the joint-planning efforts nor with the preparation of the ER.

III. WHAT CHANGED IN THE JOINT-PLANNING PROCESS BETWEEN THE FIRST AND SECOND ROUND

There have been several substantive changes to the joint-planning process since the conclusion of the first round on September 1, 2010, that will have a significant effect on GMAs as they work to adopt or readopt DFCs by the statutory deadline. Some of the changes result from the passage of legislation in 2011 and 2013, some are the result of budget cuts in 2011, others are the result of the evolving scientific and legal framework that GMAs are operating in today, and finally, in many regions of Texas, the continuing drought will undoubtedly serve to complicate the joint-planning process.

The ink was barely dry on the original DFCs that were adopted during the first round of joint planning, and petitions over the reasonableness of those DFCs were still being resolved when, in 2011, the Texas Legislature passed Senate Bill (SB) 660,¹⁰ an act that also served as the Sunset Bill for the Texas Water Development Board (TWDB). The applicable elements of this legislation amended several elements of TWC section 36.108. In part, this legislation added specific scientific, planning, and policy components that GCDs in the GMAs must consider during the process to adopt DFCs.¹¹ The more substantive elements of the expanded process include:

- a) new requirements that an explanatory report be developed and submitted at the conclusion of the joint-planning process to document that certain required elements have been addressed,¹²
- b) a change from requirements involving estimates of managed available groundwater to modeled available groundwater (including the process for addressing exempt use),¹³
- c) a new requirement that during considerations of hydrological conditions in the GMA, the total estimated recoverable storage must be considered for each aquifer,¹⁴

- d) a new requirement that the GMA participants must demonstrate that the adopted DFCs “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 GMA,¹⁵
- e) a new requirement for individual districts to hold public hearings on proposed DFCs before final adoption by district representatives in the GMA,¹⁶ and
- f) as soon as possible after final adoption of the DFCs by district representatives in the GMA, individual districts are then to finally adopt the DFCs for the district.¹⁷

A more detailed discussion of the new requirements is discussed below under *Constructing the Explanatory Report*.

Senate Bill 660 created significant opportunities for public participation during the process of adopting DFCs. In the first round of joint planning, prior to SB 660, GCDs in a GMA were simply required to adopt DFCs at a GMA meeting posted according to Government Code 551 where at least two-thirds of the GCD representatives were present. There was no formal public comment period required as part of this action. SB 660 now requires that the GCD representatives first propose for adoption DFCs that must then be distributed to the GCDs in the GMA for a prescribed 90-day public comment and hearing process.¹⁸ During the 90-day comment period, GCDs are to make available a copy of the proposed DFCs and any supporting information such as documentation of the factors considered under the requirements of TWC section 36.108(d) during the joint-planning process. Also during the comment period, each GCD is to hold a public hearing on the proposed DFCs. At the conclusion of this comment and public hearing process, each GCD is to compile for consideration at the next GMA meeting all relevant comments received during the 90-day comment period, along with any suggested revisions to the proposed DFCs and the basis for those revisions.¹⁹

In 2013, the Texas Legislature, in recognition of these additional efforts now required to adopt DFCs and due to the fact that many of the TWDB's

¹⁰ Act of May 29, 2011, 82nd Leg., R.S., ch. 1233, 2011 Tex. Gen. Laws 3287.

¹¹ TWC §§ 36.108(d)(1-9).

¹² TWC § 36.108(d-3).

¹³ TWC § 36.001(a)(25).

¹⁴ TWC § 36.108(d)(3).

¹⁵ TWC § 36.108(d-2).

¹⁶ TWC § 36.108(d-2).

¹⁷ TWC § 36.108(d-4).

¹⁸ TWC § 36.108(d-2).

¹⁹ TWC § 36.108(d-2).

groundwater availability models were either under construction or undergoing significant updates, passed Senate Bill 1282.²⁰ The sole change made by this act was to, solely for the current round of joint-planning, extend the deadline for adopting DFCs from the various timelines that each GMA was on (based on five years from previous date of adoption) to a standardized date of May 1, 2016. After the current round (concluding May 1, 2016), the requirement to adopt or readopt DFCs no less than once every five years will be reinstated.

One of the most significant changes to occur in the joint-planning process between the first and second round was also the result of a legislative decision. In 2011, the 82nd Texas Legislature, facing a multi-billion dollar budget deficit, made budget cuts to almost all state agencies, including the TWDB. Budget cuts for the TWDB translated into a marked reduction in the resources available to support the joint-planning process. In particular, the agency is no longer performing iterative predictive simulations of applicable groundwater availability models to assist the GMA participants in understanding estimates of modeled available groundwater resulting from proposed desired future conditions. Because of this reduction in resources available for the joint-planning process, the financial responsibility for technical support and iterative groundwater availability modeling efforts during the joint-planning process has shifted to the GCDs in each GMA. The impact of this shift has not been fully realized to this point, as several GMAs have yet to decide how they are going to meet the current requirements of the joint-planning process; however, it is clear in certain GMAs that this change in the process is going to have a significant impact on the GMA's ability to understand the effects of alternative DFCs and preparation of the ER.

Another reality is that it has been almost four years since adoption of the first statements of DFCs by the GMAs. As such, there has been a continuing evolution in the approach GCDs are taking during the joint-planning process. Two notable examples relate to legal developments with respect to the relationship between private property rights and groundwater resources in Texas and the ongoing developments of new and improved groundwater science to better understand the availability of regional groundwater resources. A detailed discussion of private property rights will be deferred to my co-panelists and their scholarly treatment of this important issue. With respect to the improving science, the TWDB is continuing their efforts to both develop new

groundwater availability models for all of the minor aquifers, many of which were not available during the first round of joint planning, and also to either directly or indirectly support updates of some of the major aquifer groundwater availability models, most notably through direct support of ongoing improvements to the High Plains Aquifer System (Ogallala Aquifer) GAM and as technical advisors to locally sponsored updates to the Northern Trinity/Woodbine Aquifer GAM and the Northern Gulf Coast GAM. It is inevitable that with these new or improved GAMs there will be some changes to the resulting statements of DFCs and to estimates of MAGs.

Finally, large regions of Texas remain in a drought that, in some areas, is now approaching or has achieved drought-of-record status. The impact of this continuing drought on the joint-planning process is multi-faceted. The drought has placed unprecedented pressures on municipalities and industries to obtain necessary water resources sufficient to meet current and future water supply needs. The socioeconomic impact of not meeting water supply needs is well documented, most recently in the 2012 Texas State Water Plan.²¹ For GMAs that have worked to adopt DFCs with a theme of sustainable management of groundwater resources in the GMA, municipalities and industries impacted by the drought, often times either directly or indirectly associated with private-sector water resource interests, are increasingly advocating for more "water demand" driven policies. In certain GMAs, it is clear that there is the potential for conflict between a policy focused on sustainable management of resources and a policy based on meeting current and projected water demands with groundwater resources at extraction rates that may be viewed as not being sustainable.

IV. CONSTRUCTING THE EXPLANATORY REPORT

The Texas Legislature amended TWC section 36.108 in 2011 in order to significantly expand the technical and policy issues that GMAs and GCDs must address during the joint-planning process. The following is a compilation of new requirements that GMAs must meet prior to submission of final DFCs to the TWDB.

Texas Water Code 36.108(c) requires that districts (designated representatives) "consider groundwater availability models and other data or information" for the GMA prior to the adoption of proposed DFCs.

²⁰ Act of May 20, 2013, 83rd Leg., R.S., ch. 785, Tex. Gen. Laws ____.

²¹ Texas Water Development Board, Water for Texas – 2012: The State Water Plan.

With the passage of Senate Bill 2²² in 2011, TWC section 16.012 was amended to add a new subsection (l) that requires the executive administrator of the TWDB to obtain or develop groundwater availability models (GAMs) for the major and minor aquifers in Texas. GAMs are the primary analytical tool for long-term water planning in Texas. To date, GAMs have been developed for all major aquifers and almost all minor aquifers. Currently, updates to major aquifer GAMs are underway in three of the major aquifers. As discussed in the previous section, during the first round of joint planning, the TWDB provided almost all necessary technical support to the GMAs by executing and publishing multiple iterations of predictive GAM simulations so that the district representatives could gain an understanding of the impacts of different pumping scenarios on an aquifer. This technical support will no longer be available; therefore, if the GMAs are again interested in the impacts of pumping scenarios that differ from predictive GAM simulations produced during the last round, it will be up to the individual GMAs to perform that analysis. As a result, the GMAs appear to be taking a very judicious approach in identifying new pumping scenarios.

TWC section 36.108(d) states, in part, “the districts . . . shall propose for adoption desired future conditions for the relevant aquifers in the management area. Before voting on the proposed desired future conditions of the aquifers under Subsection (d-2) the districts shall consider:” and then follows nine “considerations” that must occur before voting on the proposed DFCs. The following is a brief review of the nine considerations and a discussion of possible sources for the technical and policy elements now required, along with an overview of the challenges that GCDs in the GMAs may face in meeting these requirements.

TWC section 36.108(d)(1) requires the consideration of aquifer uses or conditions within the GMA, including conditions that differ substantially from one geographic area to another. In order to meet this requirement, sources of information applicable to this requirement include water use information collected and available from individual GCDs, the Historical Water Use database maintained by the TWDB, water use estimates and water demand projections from applicable regional water plans, water use information compiled as part of the development of applicable GAMs, and any relevant information in development for the upcoming 2016 regional water plans. Water use information should be considered both from a temporal perspective and a spatial

perspective, so that conditions that vary from one area to another within the GMA, including patterns of usage, may be considered in adopting proposed DFCs. Geologic and hydrologic information from published scientific literature will also be valuable in assisting the GCDs during this consideration.

TWC section 36.108(d)(2) requires that the GCDs consider water supply needs and water management strategies included in the current Texas Water Plan as part of the joint-planning process. For this round of joint planning, this will involve the use of information published in the 2012 Texas Water Plan. Meeting this requirement will necessitate a collection and presentation of information on water supply needs identified and water management strategies recommended in the 2012 Texas Water Plan. The most efficient approach to accomplishing this task is to download the information from the TWDB regional water-planning database. While it is not a required element, it is recommended that the corresponding water demand projections also be compiled and discussed so that the GCDs will have a better frame of reference to understanding water supply needs. At a minimum, water supply needs information should be presented on a county and water user group basis, and recommended water management strategies should be presented on a water user group and wholesale water provider basis. Initially, many of those involved in the process questioned the value of this requirement to the joint-planning process; however, the value of this information has recently been observed to be significant in GMAs that have progressed to this point in the process.

TWC section 36.108(d)(3) requires that GCDs consider hydrologic conditions of groundwater resources, including a new concept to groundwater management in Texas referred to as estimates of total recoverable storage. Of the nine required elements that GCDs are to consider prior to adopting proposed DFCs (TWC sections 36.108(d)(1-9)), the hydrologic conditions requirement is clearly the broadest and most technically focused. It will be necessary for the GCDs to compile and consider technical information on factors such as trends in water levels and water quality for relevant aquifers in the GMA. Using currently available GAMs, the GCDs will also need to compile and consider estimates of the annual amount of recharge from precipitation to the aquifers, the annual volume of water that discharges from the aquifer to springs and surface water bodies, including lakes, streams, and rivers, and the annual volume of flow into and out of the aquifers. In addition, the TWDB is in the process of publishing a series of reports containing estimates of total recoverable storage for relevant aquifers within each GMA. Due to the novelty of this

²² Act of May 27, 2001, 77th Leg., R.S., ch. 966, 2001 Tex. Gen. Laws 1991.

concept, the TWDB has published a guidance document for GCDs to help them better understand the concept and calculation of estimates of total recoverable storage.²³ GCDs will need to consider each of the applicable TWDB reports on total recoverable storage during considerations of hydrologic conditions.

TWC section 36.108(d)(4) requires GCDs to consider "other environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water."²⁴ The previous three requirements (TWC sections 36.108(d)(1-3)) for consideration by the GCDs are relatively straightforward as to what the statute requires. However, this requirement to consider "other environmental factors" may, in certain GMAs, necessitate consideration of a much broader range of issues than just spring flow and groundwater/surface water interaction. At a minimum, environmental factors identified in the most current regional water plans applicable to the GMAs could be considered. A review of recent environmental studies in the published literature, especially those with a direct connection to water resources should be considered. For example, recently there have been a number of technical studies focusing on direct and indirect connections between water resources and endangered and threatened species. Although these studies typically, though not always, tend to focus on surface water resources and environmental flows, the common interconnection between groundwater and surface water could be relevant to the consideration of other environmental impacts, especially as it relates to proposed DFCs. It will be important during preparation of the ER that an appropriate level of effort has been dedicated and documented towards reviews of current scientific literature applicable to the areas of the GMAs.

TWC section 36.108(d)(5) requires that GCDs consider the impact of proposed DFCs on subsidence. Generally speaking, this requirement will only apply to the GMAs located along the Texas Gulf Coast. For example, in GMA 14, which includes the Fort Bend Subsidence District and the Harris-Galveston Subsidence District, the impacts of proposed DFCs on subsidence, due to the significant economic impacts that can result from subsidence, will be one of the primary points of focus. Most other GMAs however, will simply need to include in the ER a determination that due to geological and hydrological conditions

present in the GMA, consideration of the impacts of proposed DFCs on subsidence is not applicable.

TWC section 36.108(d)(6) requires GCDs to consider the "socioeconomic impacts reasonably expected to occur" as a result of the proposed DFCs.²⁵ As was the case with the required consideration of hydrological conditions described above, this requirement to consider socioeconomic impacts is a broad requirement that necessitates a deliberate approach in order to document that the requirement has been met in the ER. One challenge that GCDs face during the consideration of socioeconomic impacts is that neither statute nor TWDB rules prescribe the type of analysis necessary to meet this requirement. The most straightforward approach would be to consider the negative socioeconomic impacts of not meeting projected water supply needs in the GMA as reported in applicable 2011 regional water plans and in the 2012 Texas Water Plan.²⁶ Otherwise, locating and reviewing economic studies applicable to proposed DFCs will be difficult. Questions have been raised as to the necessity of conducting GMA or GCD specific economic studies in order to meet this statutory requirement. Such studies would undoubtedly increase the time and effort required to meet this new requirement. As a result of the questions and confusion that the need for socioeconomic impacts has introduced into the joint-planning process, the need for further clarification as to the specifics of this requirement is warranted. For the current round of joint-planning, it is recommended that during preparation of the ER, effort is made and documented on reviews of any current socioeconomic studies applicable to the GMAs.

TWC section 36.108(d)(7) requires GCDs to consider the impact of proposed DFCs on the interests and rights in private property. The spectrum of approaches that GCDs may employ in meeting the requirement is quite variable. For example, GCD representatives may decide to simply point to pertinent elements in the individual GCD rules that demonstrate how the proposed DFCs protect private property rights. Alternatively, GCDs might decide to host a forum during which legal experts in the field of private property rights share their insights on potential impacts that may result from proposed DFCs. Regardless of the approach taken, it will be important that during preparation of the ER, GCDs clearly document consideration of the impact of proposed DFCs during the joint-planning process and any conclusions that may have resulted from those considerations.

²³ Further information on estimates of total recoverable storage available at http://www.twdb.texas.gov/groundwater/docs/TotalEstimate_dRecoverableStorage.pdf.

²⁴ TWC § 36.108(d)(4).

²⁵ TWC § 36.108(d)(6).

²⁶ Texas Water Development Board, Chapter 6, Water Supply Needs, *in* Water for Texas – 2012: The State Water Plan, pp. 182 – 185.

TWC section 36.108(d)(8) requires GCDs to consider the feasibility of achieving the proposed DFCs. The conduct of feasibility studies is typically performed in connection with a potential project, such as the construction of a new seawater desalination facility at a proposed site. Assessing whether or not the successful achievement of proposed DFCs is feasible will be an entirely different effort. For example, one may need to determine if the pumping scenario utilized in a GAM to quantify estimates of MAG are feasible. GCDs will also need to consider the feasibility of developing and implementing a management plan and rules with sufficient controls on groundwater production so as to meet adopted targets. In Texas at least, this requirement is new, and so how it is accomplished will evolve over the course of the joint-planning effort.

As part of the consideration process prescribed in TWC sections 36.108(d)(1-9), GCDs are also directed to consider any other information relevant to the specific proposed DFCs. This component of the considerations requirements will allow GCDs to include in the ER any other information that they feel is pertinent to DFCs that are being proposed for adoption. As with the other considerations necessary for adopting proposed DFCs and for preparation of the ER, if the information in question was part of the consideration process leading to the adoption of DFCs, then it will need to be documented as part of the ER.

Finally, TWC section 36.108(d-2) includes a balancing test adopted DFCs must achieve. This requirement states that proposed DFCs “must provide a balance between the highest practicable level of groundwater production and the conservation, preservation, protection and recharging and prevention of waste of groundwater and control of subsidence in the management area.”²⁷

One can only hope that this new requirement of achieving the “highest practicable level” does not ultimately lead to the impediment that a similar amendment to Senate Bill 1 in 1997²⁸ has faced on the permitting of interbasin transfers. There are many reasons attributed to almost total halt in the granting of interbasin transfers since the passage of Senate Bill 1. However, the interbasin permitting requirement that an applicant has “implemented a water conservation plan that will result in the highest practicable levels of water conservation . . .” has proven over time to be a very difficult balancing test to meet, in large part due to the inability to prove that one has achieved the “highest

practicable levels.”²⁹ As a result of this challenging requirement in the joint-planning process, not only must GCDs determine the “highest practicable level of groundwater production,” but they must also demonstrate that the balancing test has been met with the proposed DFCs. This is not a balancing test that groundwater modelers or other similarly technically oriented resources will solve. Rather, GCDs will solve this balancing test as they undertake the many new requirements of joint planning included in TWC section 36.108. In other words, we do not know what this will look like, but we will know it when we see it.

V. SUMMARY

The joint-planning process prescribed in TWC section 36.108 has evolved rapidly since originally conceived with the passage of House Bill 1763³⁰ in 2005. It is important that GCDs and those supporting the GCDs anticipate the time, effort, and complexity that the current process will entail. During the first round of joint planning, GCDs in certain GMAs waited until very late in the process before having substantive discussion on formally adopting DFCs. Waiting until very late in the current round of joint-planning to initiate the required considerations necessary before adopting proposed DFCs does not appear to be a prudent course of action in order to meet the May 1, 2016, deadline. A few GMAs are well into the considerations process, while a few others have yet to begin the process. This review of the new requirements makes a compelling case for the need for all GCDs in the 15 GMAs to begin the consideration process necessary to adopt proposed DFCs as soon as possible so that all will meet the statutory deadline.

²⁷ TWC § 36.108(d-2).

²⁸ Act of June 2, 1997, 75th Leg., R.S., ch. 1010, 1997 Tex. Gen. Laws 3610.

²⁹ TWC § 11.085(1)(2).

³⁰ Act of May 24, 2005, 79th Leg., R.S., ch. 970, 2005 Tex. Gen. Laws 3247.

APPENDIX A

TABLE 1 - Status of joint-planning efforts in GMAs in Texas

GMA	Last Joint-Planning Meeting	Status of joint-planning process/explanatory report (ER) preparation
1	2/06/2014	Preliminary discussions on process for adopting new DFCs. Working to decide approach for preparation of ER (meeting after this writing).
2	12/18/2013	Preliminary discussions, no decision on approach for preparation of ER
3	1/16/2013	Only one confirmed GCD (Middle Pecos GCD) in GMA 3. Will use GCD consultant to prepare ER. Waiting on release of new GAM for Capitan Reef Aquifer before starting process.
4	7/25/2013	Preliminary discussions have been initiated and at this time there are no plans to engage consulting services to assist in preparation of ER
5	Not applicable	There are no GCDs with jurisdictional boundaries in GMA 5.
6	1/29/2014	Currently working on setting DFCs. GMA 6 has consultant working with GCD that is also the GMA 6 administrator that will support effort to prepare ER.
7	2/13/2014	GMA has been working to identify local aquifers that are not relevant to the joint-planning process. Looking to expand discussions to bigger picture topics such as surface water – groundwater interactions. GMA has voted to contract for professional services to prepare the ER but no selection has been made to date.
8	1/21/2014	Has initiated discussion on issues to address setting DFCs. GMA 8 has reached tentative agreement on selection of consultant to support process of preparing ER.
9	11/18/2013	Preliminary discussions on how new DFCs will be set and decisions on determining non-relevant aquifers; currently exploring option of teaming with GMA 10 to share consulting services for preparation of the ER since there is significant overlap in data sets between the two GMAs.
10	2/3/2014	GMA has decided that Leona Aquifer in Medina County is not relevant. At this writing, GMA is in the process of negotiating contract with consulting services for support in preparation of ER and evaluation of potential DFCs. Also considering “sharing” of consultants with GMA 9 (to be decided at 2/3/2013 meeting).
11	10/2/2013	Due to turnover in GCD representation, GMA is primarily focused on orientation to planning process. No discussions on approach for preparation of ER
12	12/19/2013	As was the case during the first round, GMA will utilize each GCDs consulting firm, in a joint effort, to prepare materials necessary to adopt DFCs and prepare ER.
13	11/21/2013	GMA selected consultant and has received a draft ER for review. GMA is in process of setting new DFCs.
14	9/18/2014	GMA selected consulting team and has initiated process of conducting required considerations. An updated Northern Gulf Coast GAM will be utilized.
15	1/9/2014	GMA selected consultant and is working on timeline for adopting DFCs.
16	10/22/2013	GMA selected consultant and is now conducting review of current DFCs. GMA has initiated process of conducting required considerations for ER.

APPENDIX B

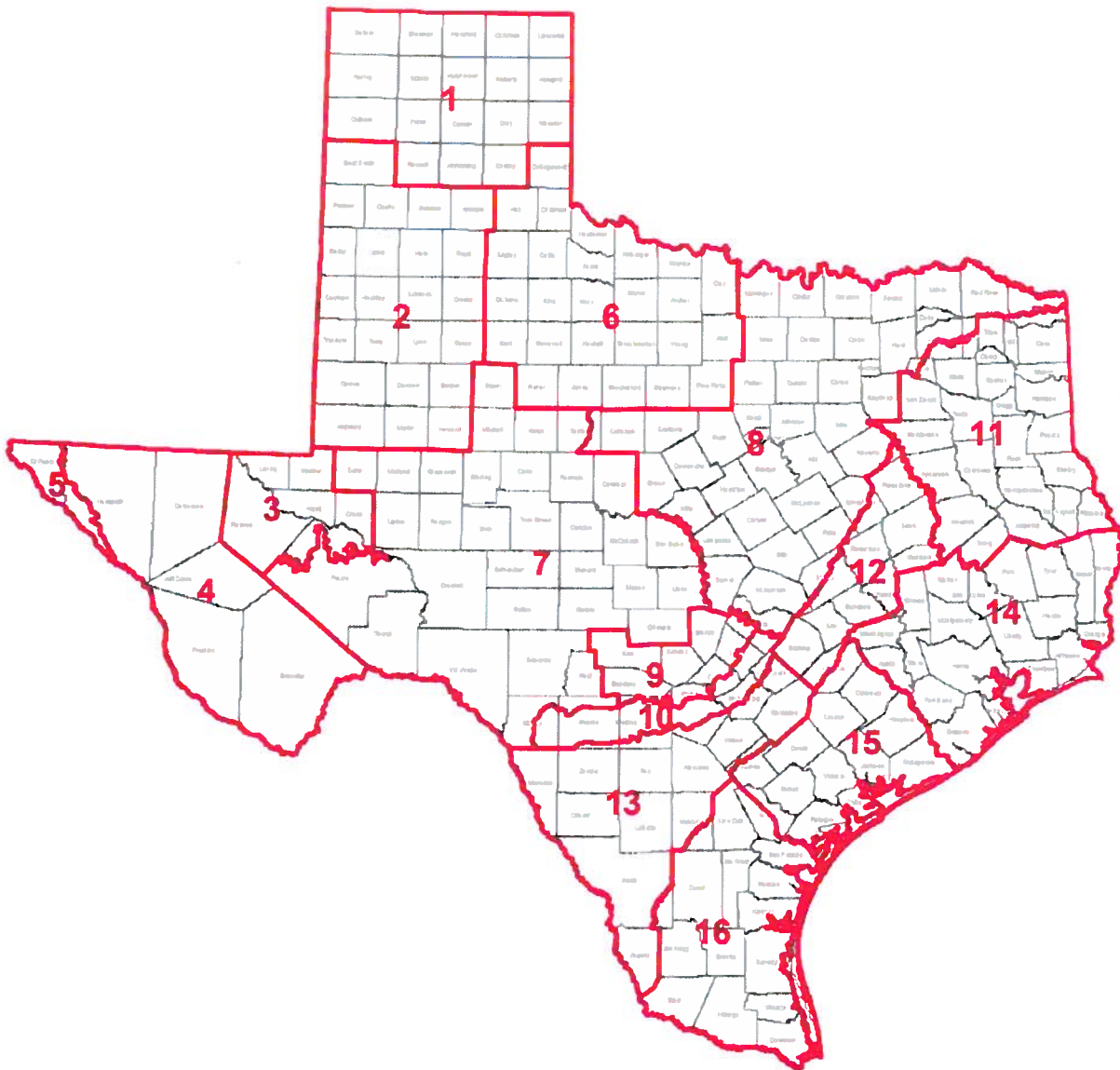


FIGURE 1 – Map of groundwater management areas in Texas (from TWDB³¹).

³¹ Web link to GMA map at: <http://www.twdb.texas.gov/mapping/doc/maps/GMA%20map%208x11.pdf>.

