

The Executive Director's Final Report for
Reagan, Upton, and Midland County Priority
Groundwater Management Area
-Northeastern Upton and Southeastern Midland
Counties-

Prepared by

Mike Chadwick, P.G.

Water Availability Division

Groundwater Conservation District Recommendation Report

February 8, 2017

- *page intentionally blank* -

EXECUTIVE SUMMARY

The Reagan, Upton, and Midland Priority Groundwater Management Area (PGMA) was delineated and designated by the Texas Water Commission in 1990. During this time, the Commission was not required to make a formal recommendation for groundwater conservation district (GCD) creation within a PGMA.

The Texas Commission on Environmental Quality (TCEQ), Executive Director is now required to petition the Commission to establish groundwater management in PGMA's where there is no GCD. This final report identifies the part of this PGMA without a GCD, presents groundwater management options, and evaluates the practicability and feasibility of the options available to the Commission to establish groundwater management in the PGMA. In this report, the Executive Director recommends that the part of the PGMA without GCD management should be added to an existing GCD.

Title 30, Texas Administrative Code (30TAC), §294.35, describes the Reagan, Upton, and Midland PGMA boundaries that are composed of northern Reagan County, the northeastern part of Upton County, and the southeastern part of Midland County. The Reagan part of the PGMA is either managed by the Glasscock GCD or the Santa Rita Underground Water Conservation District (UWCD). The remaining northeastern Upton County and southeastern Midland County have no GCD management. For the convenience of discussing GCD creation options, this report identifies the remaining PGMA without GCD management as the Upton PGMA territory and the Midland PGMA territory. Creating GCD management in the Upton and Midland PGMA territories is necessary to meet the requirements found in Texas Water Code (TWC) Chapters 35 and 36 and 30 TAC §§293.19 and 294.44 to establish GCD management within PGMA's established before 2001.

Five groundwater management options are considered in this report for groundwater management in the Upton and Midland PGMA territories. The first option would add the Upton and Midland PGMA territories to the Glasscock GCD. The second option would add the Upton and Midland PGMA territories to the Santa Rita UWCD. The third option would add the remaining PGMA to the contiguous and immediate neighboring districts; Upton PGMA territory added to the Santa Rita UWCD and the Midland PGMA territory added to Glasscock GCD. The fourth option would create a single GCD covering all the remaining Upton and Midland PGMA territories. The fifth option would create two new GCDs, one in the Upton PGMA territory and one in the Midland PGMA territory.

The Executive Director recommends the Commission issue an order to add all of the PGMA territories in the Upton and Midland counties to the Glasscock GCD pursuant to 30 TAC, Chapters §§ 293 and 294. The alternative would be to add all of the PGMA territories in the Upton and Midland counties to the Santa Rita UWCD.

The Executive Director recommends that the Commission find that adding the remaining PGMA territories to the established and successful districts like the Glasscock GCD or Santa Rita UWCD appears to be the most feasible, practicable, and economic means for the landowners in the PGMA to secure groundwater management of the Edwards-Trinity Plateau Aquifer. If the Commission finds that the PGMA territories should be added to an existing GCD, an order will be issued recommending this action.

BACKGROUND

Four critical areas were designated in 1990 by the Texas Water Commission (TCEQ's predecessor agency). Senate Bill 1 renamed these critical areas as priority groundwater management areas (PGMAs) in 1997. One of these areas is the Reagan, Upton, and Midland County PGMA.

State law requires the TCEQ to identify areas within the PGMA that have not created a district through local initiative and to create GCDs or have areas joined to existing GCDs if local efforts have not been forthcoming. All of Reagan County is presently within either the Santa Rita UWCD or the Glasscock GCD (Figure 1). As of 2013, no GCDs have been created by landowner initiation in the Upton and Midland PGMA territories.

EFFORTS TO CREATE GCDs IN THE PGMA

Reagan PGMA Territory

Glasscock GCD was created by the Legislature in 1981 and lies to the north, adjacent to the PGMA. During 1989 and 1990, some landowners in Reagan County petitioned to join, and were accepted, into the Glasscock GCD. The Glasscock GCD now covers all of Glasscock County and about 65,000 acres in the Reagan County PGMA territory. Santa Rita UWCD was created by the Legislature in 1989 and covers the remaining parts of Reagan County not included in the 65,000 acres added to the Glasscock GCD. Some landowners in the remaining Upton and Midland counties petitioned to join the Glasscock GCD in 1999 but did not receive a majority vote from the Glasscock GCD board to add these areas.

Upton PGMA Territory

An attempt to create a GCD occurred in 1999 during the 76th Legislature with the introduction of House Bill 437. The bill sought to empower the existing Upton County Water District, which is a water service provider in Upton County, with limited TWC Chapter 36 authority. The bill remained in committee at the end of the 76th Regular Session.

Midland PGMA Territory

Local efforts to create or join a GCD within the PGMA include an unsuccessful attempt by landowners in Midland County in November 1991, to join the Permian Basin UWCD. Voters defeated the proposal by a margin of 3 to 2. There have been several exploratory attempts by some residents in both the Upton and Midland counties to join the Glasscock County GCD but none has been successful.

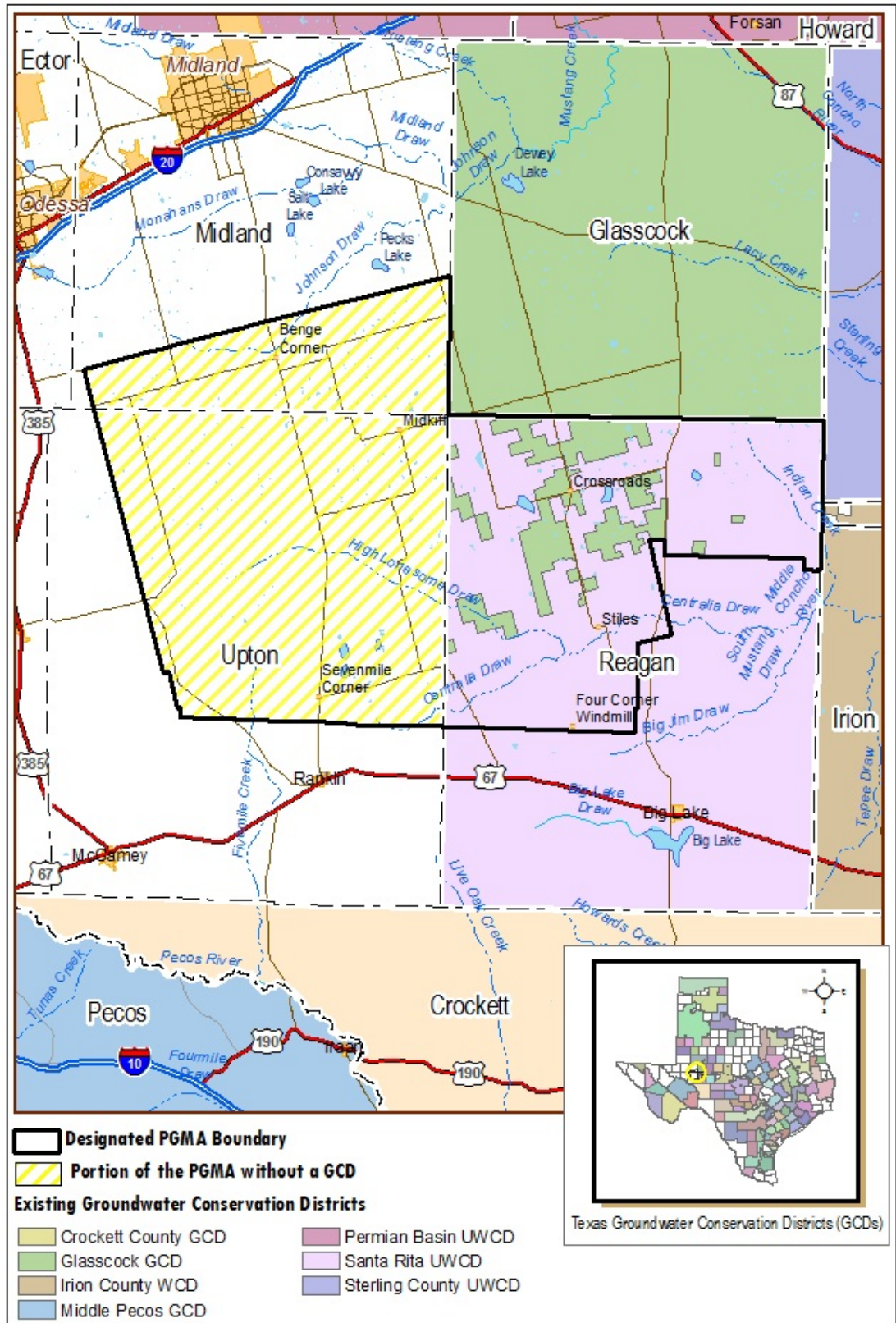


Figure 1. The Reagan, Upton, and Midland County PGMA and Surrounding GCDs.

GROUNDWATER MANAGEMENT AREA 7

TWC Chapter 35, §35.004 provides that Groundwater Management Areas (GMAs) are areas delineated by the Texas Water Development Board (TWDB) to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence caused by withdrawal of water from those groundwater reservoirs or their subdivisions. The TWDB has delineated 16 GMAs in Texas. The Reagan, Upton, and Midland County PGMA is located within GMA 7 which is composed of 33 counties, 25 counties and partial counties with district groundwater management and 8 counties and 3 partial counties without management. The 25 counties are covered by 21 districts (Table 1). The Edwards Aquifer Authority (EAA) manages only the Edwards Aquifer in Uvalde County but also participates in GMA 7 planning and is included in Table 1.

#	District	Counties Served	Enabling Legislation	Year Created	Managed Major & Minor Aquifers
1	Coke County UWCD	Coke	69th Legislature (1985) HB 2418	1986	Dockum, Edwards-Trinity (Plateau), Lipan
2	Crockett County GCD	Crockett	71st Legislature (1989) SB 1635	1991	Edwards-Trinity (Plateau)
3	Edwards Aquifer Authority	Uvalde (GMA 7), Atascosa, Bexar, Caldwell, Comal, Guadalupe, Hays, Medina	73rd Legislature (1993) SB 1477	1996	Edwards Aquifer Balcones Fault Zone (BFZ)
4	Glasscock GCD	Glasscock, Reagan	67th Legislature (1981)	1981	Dockum, Edwards-Trinity (Plateau), Ogalalla
5	Hickory UWCD No. 1	Mason, Concho, Kimble, McCulloch, Menard, San Saba	No legislative action. Residents petitioned in 1982.	1982	Edwards-Trinity (Plateau), Hickory, Marble Falls
6	Hill Country UWCD	Gillespie	70th Legislature (1987) HB 792	1987	Edwards-Trinity (Plateau), Ellenberger-San Saba, Hickory, Trinity
7	Irion County WCD	Irion, Tom Green	69th Legislature (1985)	1985	Dockum, Edwards-Trinity (Plateau), Lipan
8	Kimble County GCD	Kimble	77th Legislature (2001) SB 2	2002	Edwards-Trinity (Plateau), Ellenberger-San Saba, Hickory
9	Kinney County GCD	Kinney	77th Legislature (2001) HB 3243	2002	Edwards-Trinity (Plateau), Edwards BFZ
10	Lipan-Kickapoo WCD	Concho, Tom Green, Runnels	70th Legislature (1987) SB 1525	1987	Edwards-Trinity (Plateau), Hickory, Lipan
11	Lone Wolf GCD	Mitchell	77th Legislature (2001) HB 2529	2002	Dockum
12	Menard County UWD	Menard	72nd Legislature (1991) SB 1465	1999	Edwards-Trinity (Plateau), Ellenberger-San Saba, Hickory
13	Middle Pecos GCD	Pecos	76th Legislature (1999) SB 1911	2002	Capitan Reef Complex, Dockum, Edwards-Trinity (Plateau), Pecos Valley, Rustler
14	Plateau UWC&SD	Schleicher	59th Legislature (1965) HB 1059	1974	Edwards-Trinity (Plateau)
15	Real-Edwards CRD	Edwards, Real	56th Legislature (1959) HB 447	1959	Edwards-Trinity (Plateau), Trinity
16	Santa Rita UWCD	Reagan	71st Legislature (1989) SB 1634	1989	Dockum, Edwards-Trinity (Plateau)
17	Sterling County UWCD	Sterling, Tom Green	70th Legislature (1987)	1987	Dockum, Edwards-Trinity (Plateau)
18	Sutton County UWCD	Sutton	69th Legislature (1985) HB 1161	1986	Edwards-Trinity (Plateau)
19	Terrell County GCD	Terrell	82nd Legislature (2011) HB 2859	2012	Edwards-Trinity (Plateau)
20	Uvalde County UWCD	Uvalde	73rd Legislature (1993) SB 1477		Edwards-Trinity (Plateau), Carrizo-Wilcox and Trinity
21	Wes-Tex GCD	Nolan	77th Legislature (2001) HB 3659	2002	Dockum, Edwards-Trinity (Plateau)

Table 1. GCDs, Counties, and Aquifers in GMA 7.

GMA 7 covers approximately 42,000 square miles with about 35,540 square miles under district groundwater management. The remaining portion of the PGMA without GCD management is the approximately 612 square miles of northeastern Upton County and 207 square miles of southeastern Midland County that overlies the Edwards-Trinity Plateau Aquifer (Figure 2).

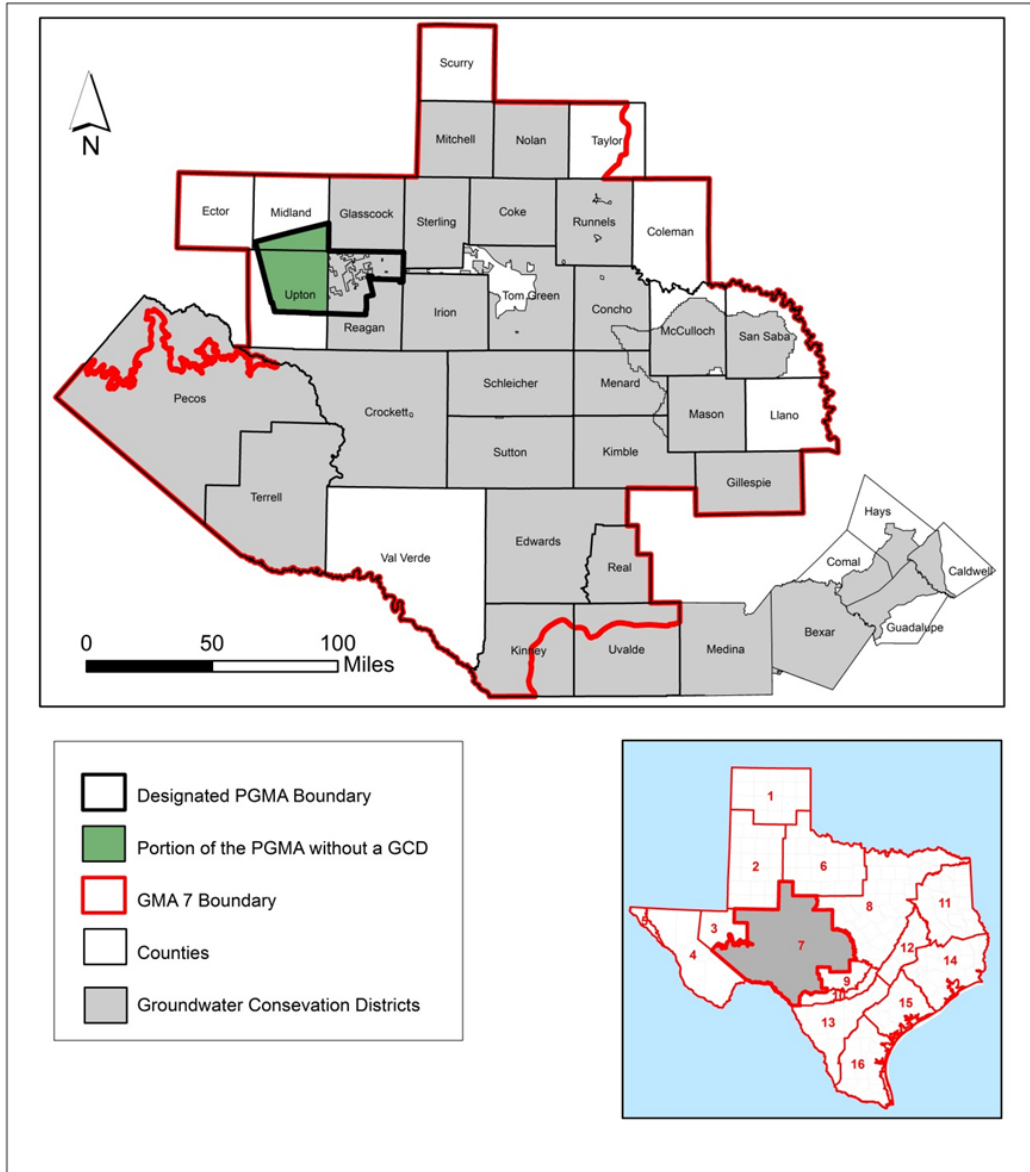


Figure 2. GMA 7; Reagan, Upton, and Midland PGMA, and the Surrounding Counties Under District Management.

DISTRICT CREATION OPTIONS AND CONSIDERATIONS

In accordance with 30 TAC §§293.19 and 294.44, the options for groundwater management in the Upton and Midland PGMA territories are to create a single GCD, create two GCDs, or a combination of adding the PGMA territories to the Santa Rita UWCD, the Glasscock GCD, or both. When evaluating these options, the Executive Director must consider the purpose, feasibility, and practicability of a recommended GCD creation action relevant to these determinations:

- whether the recommended GCD creation action can effectively manage the groundwater resources under the authority of Chapter 36,
- whether the recommended GCD creation action would provide for the necessary boundaries for effective management of groundwater resources, and
- whether the recommended GCD creation action can be adequately funded to finance required or authorized groundwater management planning, regulation, and district operation under Chapter 36.

Groundwater management within the Upton and Midland PGMA territories can be effectively managed under Chapter 36 because existing neighboring GCDs have managed the same groundwater resources under Chapter 36 of the Water Code for the last 30 years. The Texas Legislature has stated in the Water Code that GCDs are the preferred option to manage groundwater resources in Texas. No additional authority other than Chapter 36 would be required for the effective management of groundwater within the Upton and Midland territories in the PGMA.

All groundwater management options considered in this report provide for the complete management of the remaining groundwater resources identified within the Upton and Midland territories of the PGMA.

Feasibility to Finance District Operations under Chapter 36

GCDs finance operations through taxes, well production fees, or both. Taxes are levied on all property owners while well production fees are paid by large groundwater users. GCDs are required to operate from an annual budget. District directors are not entitled to receive a salary and spending district revenue is limited to budgeted items.

Annual budgets for existing districts in GMA 7 range from approximately \$36,160 – \$669,714. The annual cost per square mile for district management in GMA 7 ranges from \$15 - \$437 with an average \$141 per square mile. The annual cost of groundwater management for GCDs adjacent to the PGMA is \$184 per square mile for the Santa Rita UWCD and \$437 per square mile for the Glasscock GCD. Present operating budgets for districts in GMA 7 are summarized in Table 2. The values listed in Table 2 were determined from phone inquiries from the GMA 7 GCDs.

District	Counties Served	Tax Rate per \$100 Valuation (2016)	Fees ¹	Annual Budget (2016)	GCD Square Miles	Cost Per Sq. Mile (2016)
Coke County UWCD	Coke	\$0.011795	None	\$44,002	911	\$48
Crockett County GCD	Crockett	\$0.02236	None	\$243,018	2,796	\$86
Edwards Aquifer Authority	(Uvalde-GMA 7), Atascosa, Bexar, Caldwell, Comal, Guadalupe, Hays, Medina	No Tax	Combined fees totaling \$84/ac-ft	\$34,400,000*	*	*
Glasscock GCD	Glasscock, Reagan	\$0.01935	None	\$422,373	966	\$437
Hickory UWCD No. 1	Mason, Concho, Kimble, McCulloch, Menard, San Saba	\$0.03500	None	\$472,253	2,630	\$179
Hill Country UWCD	Gillespie	\$0.00780	\$100 Register Well \$250 Permitted Well	\$330,670	1,061	\$311
Irion County WCD	Irion, Tom Green	\$0.01613	None	\$117,320 ¹	1,114	\$105
Kimble County GCD	Kimble	\$0.01000	None	\$81,200	1,198	\$67
Kinney County GCD	Kinney	\$0.05400 ¹	GW Use Fees & Other Use Fees	\$212,986 ¹	1,391	\$153
Lipan-Kickapoo WCD	Concho, Tom Green, Runnels	\$0.01040	None	\$258,359	3,535	\$73
Lone Wolf GCD	Mitchell	\$0.0225860	None	\$186,986	900	\$207
Menard County UWD	Menard	\$0.05882	Ag. \$1.00 per ac/ft, Other \$0.17 per 1000 gallons, Transport Permit \$2,500	\$107,648	786	\$136
Middle Pecos GCD (2010)	Pecos	0.01610*	Negotiable Export Fee	\$669,714	4,764	\$141
Middle Pecos GCD (2016)	Pecos	\$0.02490	Negotiable Export Fee	-\$153,591* ²	4,764	*
Plateau UWC&SD	Schleicher	\$0.04600	Transport Application \$500	\$143,006	1,309	\$109
Real-Edwards CRD	Edwards, Real	\$0.02350	Permit Application \$250	\$195,744	2,828	\$69
Santa Rita UWCD	Reagan	\$0.00600	n/a	\$197,707	1,073	\$184
Sterling County UWCD	Sterling, Tom Green	\$0.01796	n/a	\$160,800	963	\$166
Sutton County UWCD	Sutton	\$0.05000	None	\$285,893	1,493	\$191
Terrell	Terrell confirmed 11/6/2012	\$0.01500	n/a	\$36,160	2,358	\$15
Uvalde UWCD	Uvalde	\$0.01200	Transport Application \$50-\$500	\$202,957	1,552	\$130
Wes-Tex GCD	Nolan	\$0.00500	None	\$113,089	912	\$124
Average		\$0.02214		\$230,643		\$141

*Data not used in averaging

¹ 2010 data

² Deficit in operational cost considering litigation fees

Table 2. GMA 7 District Operating Budgets.

Potential Tax Revenues

Excluding the Edwards Aquifer Authority, all of the GCDs within GMA 7 are funded by ad valorem taxes with a few GCDs collecting additional permit and/or production fees. Before any GCD can levy and collect an ad valorem tax, the proposition must first be offered to and approved by the voters. In accordance with TWC, §36.201, a GCD may levy an ad valorem tax at a rate not to exceed \$0.50 per \$100 assessed valuation to pay for maintenance and operating expenses. Most districts have lower tax caps set by their enabling legislation or by the voters. Present tax rates for districts in GMA 7 range from \$0.005 to \$0.05882 per \$100 assessed valuation. The annual cost for district management in GMA 7 ranges from \$48 - \$437/square mile, averaging \$141/square mile. Adjacent to the Upton Midland PGMA territories, Santa Rita UWCD and the Glasscock GCD assesses a tax rate of \$0.006 tax per \$100 assessed value and \$0.01935 tax per \$100, respectively.

The Midland County tax appraiser reported that the Midland PGMA territory taxable land and mineral value for 2012 is \$1,028,230,226. Assessing a \$0.010 tax per \$100 assessed value would generate \$102,823 at a cost of \$497/ square mile (\$102,823/207 square mile).

The Upton County tax appraiser reported that the Upton PGMA territory assessed land and mineral value for 2012 is \$2,090,870,312. Assessing a \$0.010 tax per \$100 assessed value would generate \$209,087 at a cost of \$341/ square mile (\$209,087/612 square mile).

Tax Revenue Analysis

If the Upton and Midland PGMA territories assessed a tax of \$0.01 per \$100 assessed land and mineral value, \$311,910 would be generated annually for a \$380/ square mile cost (\$102,823 + \$209,087/207 square mile + 612 square mile) to implement groundwater management.

If the Upton and Midland PGMA territories assessed a tax of \$0.005 per \$100 assessed land and mineral value, \$155,956 would be generated annually for a \$190 / square mile cost (\$51,412 + \$104,544 / 207 square mile + 612 square mile) to implement groundwater management.

A GCD tax assessment of \$0.005 per \$100 assessed valuation that generates \$155,956 in the PGMA territories compares favorably to other GMA 7 GCDs operating budgets. A tax assessment of \$0.005 per \$100 assessed valuation is the lowest tax rate of all the other GCDs in GMA 7. However, the smaller land area of the Upton and Midland PGMA territories compared to other GMA 7 GCDs make the cost per square mile higher in the PGMA higher than most GMA 7 GCDs.

Potential Production Fee Revenues

GCDs may also generate revenue through the assessment and collection of well production fees on permitted wells in accordance with TWC, §36.205. Unless otherwise addressed by a district's enabling legislation, the production fees are initially capped by law at \$1 per acre-foot/year for agricultural use, and \$10 per acre-foot/year for other uses. The rates can be doubled over a five-year period. To estimate the annual production fee revenue that could be generated in the Upton and Midland PGMA territories, the Executive Director uses the following values and calculations:

- Midland PGMA territory = 207 square mile.
- Upton PGMA territory = 612 square mile.
- Midland County = 902 square mile.
- Upton County = 1,242 square mile.
- 2014 Texas Water Development Board (TWDB) Water Use Survey Detailed Groundwater Pumpage by County Edwards-Trinity Plateau irrigation groundwater use for Midland County was 1,045 acre/feet.
- 2014 TWDB Water Use Survey Detailed Groundwater Pumpage by County Edwards-Trinity Plateau irrigation groundwater use for Upton County was 9,191 acre/feet.
- Estimated proportion of the Midland PGMA territory groundwater use subject to GCD production fees = $(207 \text{ square mile} / 902 \text{ square mile}) \times 1,045 \text{ acre/feet} = 240 \text{ acre/feet}$.
- Estimated proportion of the Upton PGMA territory groundwater use subject to GCD production fees = $(612 \text{ square mile} / 1,242 \text{ square mile}) \times 9,191 \text{ acre/feet} = 4,529 \text{ acre/feet}$.

Production Fee Analysis

Midland County overlies the Ogallala, Edwards-Trinity Plateau, and a small area of the Dockum Aquifers but the Midland PGMA territory overlies only the Edwards-Trinity Plateau Aquifer. From the above estimate calculations, the Midland PGMA territory in 2014 was estimated to use 240 acre-feet of groundwater used for irrigation from the Edwards-Trinity Plateau Aquifer. The maximum potential revenue from assessing groundwater production fees in the Midland PGMA territory would generate an estimated \$240 in the first year of operation and could potentially be doubled to about \$480 by year five.

Upton County overlies the Edwards-Trinity Plateau, a small area of the Pecos Valley and a small area of the Dockum Aquifers but the Upton PGMA territory overlies only the Edwards-Trinity Plateau Aquifer. From the above estimate calculations, the Upton PGMA territory in 2014 was estimated to use 4,529 acre-feet of groundwater used for

irrigation from the Edwards-Trinity Aquifer. The maximum potential revenue from assessing groundwater production fees in the Upton PGMA territory would generate an estimated \$4,529 in the first year of operation and could potentially be doubled to about \$9,000 by year five.

By using only production fees, the maximum first year combined potential revenue for the Upton and Midland PGMA territories would be an estimated \$4,769 or \$5.82/mi².

GCD Funding Conclusion

Based upon Midland and Upton County tax appraisers 2012 land assessment, a GCD tax of \$0.005 per \$100 assessed valuation will generate \$155,956 from the PGMA territories and compares favorably to other GMA 7 GCDs operating budgets. However, the smaller land area of the Upton and Midland PGMA territories, compared to other GMA 7 GCDs, make the cost per square mile higher for groundwater management in the Upton and Midland PGMA territories. Therefore, a suitable taxable rate per \$100 valuation exists in the Upton and Midland PGMA territories to fund a GCD but the smaller land area that would be taxed makes this option seem a less practicable and a less favorable option.

If the Upton and Midland PGMA territories were funded solely on production fees, the fee amounts generated from groundwater production would be substantially less than the operating costs of any one of the GCDs in GMA 7 and would also be a less favorable option to fund a GCD.

Analysis

Five options were considered to create groundwater management in the Upton and Midland PGMA territories. All five options would effectively manage the groundwater resources and meet the purpose and intent of the statutory requirements of Chapter 35 and 36 in creating groundwater management in the PGMA. The boundaries of all five recommendations could provide for effective and comprehensive groundwater management in all territories of the PGMA. These five options are discussed in detail with the intent to arrive at an option that is the most feasible and practicable in creating groundwater management in the PGMA. The following five options were considered as follows;

- Add the Upton and Midland PGMA territories to the Glasscock GCD.
- Add the Upton and Midland PGMA territories to the Santa Rita UWCD.
- Add the Upton PGMA territory to the Santa Rita UWCD and Midland PGMA territory to Glasscock GCD.
- Create a single GCD covering the Upton and Midland PGMA territories.
- Create two GCDs, one in the Upton PGMA territory and one in Midland PGMA territory.

Add the Upton and Midland PGMA territories to the Glasscock GCD

When the Legislature created Santa Rita UWCD in Reagan County, an option was provided to the landowners of Reagan County to join the existing Glasscock County GCD. A number of Reagan County landowners opted for inclusion into Glasscock GCD. Similar requests from a few landowners in the PGMA to join Glasscock have occurred in the past and some landowners may support this option.

If the Commission were to recommend adding the Upton and Midland PGMA territories to the Glasscock GCD, the Glasscock GCD board members would vote whether or not to add the territories to the Glasscock GCD. The Glasscock GCD is governed by a total of five elected directors, four directors elected, one from each of the four director precincts and one director elected at large. Should the Glasscock GCD board of directors vote in favor of adding the Upton and Midland PGMA territories, the existing Glasscock GCD board would determine the additional board directors needed to represent the PGMA territories in accordance with the TWC, §36.051.

Under this option, the Glasscock GCD boundaries would be increased by about 80%. Glasscock GCD has an established Edwards-Trinity Plateau Aquifer groundwater management program in place and participates in GMA 7 joint planning. The entire PGMA would be governed by an established groundwater management program that manages the same aquifer with an adopted management plan, implementing desired future conditions (DFCs), and existing rules.

Add Upton and Midland PGMA territories to the Santa Rita UWCD.

If the Commission were to recommend adding the Upton and Midland PGMA territories to the Santa Rita UWCD, the Santa Rita UWCD board members would vote whether or not to add the territories to the Santa Rita UWCD. The Santa Rita UWCD is governed by a total of five elected directors, four directors elected from each of the four county commissioner precincts and one director elected at large. Should the Santa Rita UWCD board of directors vote in favor of adding the Upton and Midland PGMA territories, the existing Santa Rita UWCD board would determine the additional board directors needed to represent the PGMA territories in accordance with TWC, §36.051.

Under this option, the Santa Rita UWCD boundaries would be increased by about 75%. Santa Rita UWCD has an established Edwards-Trinity Plateau Aquifer groundwater management program in place and participates in GMA 7 joint planning. The entire PGMA would be governed by an established groundwater management program that manages the same aquifer with an adopted management plan, implementing DFCs, and existing rules.

Add Upton PGMA territory to the Santa Rita UWCD and add Midland PGMA territory to Glasscock GCD

If the Commission were to recommend adding the Upton PGMA territory to the Santa Rita UWCD and the Midland PGMA territory to Glasscock GCD, the respective district board members would vote whether or not to add the PGMA territories to their district. Should the two boards of directors vote in favor of adding the PGMA territories, then the

respective boards would each determine the additional board directors needed to represent the added PGMA territories in accordance with TWC 36.051.

Under this option, the Glasscock GCD boundaries would be increased by about 20% and the Santa Rita UWCD boundaries would be increased by greater than 50%. The two existing GCDs have established Edwards-Trinity Plateau Aquifer groundwater management programs in place, including management plans and rules. The two existing GCDs also already participate in the GMA 7 joint planning. New management programs and planning functions would not be duplicated.

Create a single GCD

If the Commission were to create a single GCD for the Upton and Midland PGMA territories, the method for appointing temporary directors would follow TWC, §36.0161 and agency rules. Because there would be two or more counties, 30 TAC §293.19(c)(2) requires the Commission to apportion the number of temporary directors to each county based on each county's proportionate amount of the total estimated groundwater use within the new district. The total estimated groundwater usage within the district for each county is based on information and 2014 data contained in Texas Water Development Board "Water Use Survey Detailed Groundwater Pumpage by County". Communication with the TWDB has confirmed that the 2014 Water Use Survey Detailed Groundwater Pumpage table provided the most recent data used in this report. The Upton and Midland PGMA territories overlie the Edwards-Trinity Plateau and groundwater produced in the PGMA would exclusively come from the Edwards-Trinity Plateau Aquifer.

Based on the data from the TWDB Water Use Survey Detailed Groundwater Pumpage by County, and proportioning the total amount of groundwater used by each county, the Upton PGMA territory used more groundwater than the Midland PGMA territory.

- 2014 Midland County total Edwards-Trinity Plateau groundwater use = 3,667 acre/feet (Texas Water Development Board "Water Use Survey Detailed Groundwater Pumpage by County").
- 2014 Upton County total Edwards-Trinity Plateau groundwater use = 13,693 acre/feet irrigation (Texas Water Development Board "Water Use Survey Detailed Groundwater Pumpage by County").
- Proportion of the Midland PGMA territory Edwards-Trinity Plateau Aquifer groundwater use = $207 \text{ square miles} / 902 \text{ square miles} \times 3,667 \text{ acre/feet} = 842 \text{ acre/feet}$.
- Proportion of the Upton PGMA territory Edwards-Trinity Plateau Aquifer groundwater use = $612 \text{ square miles} / 1,242 \text{ square miles} \times 13,693 \text{ acre/feet} = 6,747 \text{ acre/feet}$.

Therefore, in accordance with TWC, §36.0161 and 30 TAC §293.19(c), the Upton County Commissioners Court would appoint one temporary director for the Upton PGMA territory and the Midland County Commissioners Court would appoint one temporary director for the Midland PGMA territory. The remaining three temporary board directors

would be apportioned by the Upton County Commissioners Court for two members from the Upton PGMA territory and apportioned by the Midland County Commissioners Court for one member from the Midland PGMA territory based on the estimated proportioned groundwater used in the PGMA. Three board members would represent the Upton PGMA territory and two board members would represent the Midland PGMA territory.

Creating a single GCD for the Upton and Midland PGMA territories would provide a high level of local control with the number of directors per county territory apportioned to represent the amount of groundwater used in each county territory. The new GCD would be approximately 819 square miles and compares favorably in size to the adjacent existing Santa Rita UWCD (1,073 square miles) and Glasscock GCD (966 square miles), and other single-county GCDs within GMA 7.

A new GCD for the Upton and Midland PGMA territories would require the development and adoption of a new groundwater management program for the Edwards-Trinity Plateau Aquifer. A new GCD would be required, within three years, to adopt a GCD management plan and rules to implement the plan. A new GCD would also introduce a new member to participate in GMA 7 joint planning functions to develop and adopt desired future conditions.

Creating a single GCD is financially feasible and comparable to other GCDs in GMA 7 based on the data presented by the Upton and Midland tax assessor-collector offices. A \$0.01 per \$100 tax rate would be about the same as the adjacent GCDs' tax rates and almost 50% lower than the average GCD tax rate in GMA 7, and would generate around \$311,910 per year, about 50% higher than the adjacent GCDs' annual operating expenses. A \$0.005 per \$100 tax rate would be roughly 50% of the adjacent GCDs' tax rates and almost 75% lower than the average GCD tax rate in GMA 7, and would generate \$155,956, roughly 10-20% lower than the adjacent GCDs' annual operating expenses. However, the smaller land area of the Upton and Midland PGMA territories, compared to other GMA 7 GCDs, make the cost per square mile higher for groundwater management in the Upton and Midland PGMA territories. Therefore, a suitable taxable rate exists in the Upton and the Midland PGMA territories to fund district groundwater management but the smaller land area that would be taxed makes this option seem a less practicable and a less favorable option.

Create two GCDs, one in Upton PGMA territory and one in Midland PGMA territory.

If the Commission were to create two GCDs, one GCD in the Upton PGMA territory and one GCD in the Midland PGMA territory, the method for appointing temporary directors for two new districts in a PGMA would also follow TWC, §36.0161 and agency rules. Because each of the two GCDs contains a single county, the Upton County Commissioners Court would appoint five temporary directors to the GCD covering the Upton PGMA territory and the Midland County Commissioners Court would appoint five temporary directors to the GCD covering the Midland PGMA territory.

Creating two GCDs would provide the highest level of local control, with each county territory governed by directors solely from the county. This option would require that two new groundwater management programs for the Edwards-Trinity Plateau Aquifer be developed and adopted. Two new management plans would be required within three years, as well as two sets of new rules to implement the new plans. There would also be

two new members that would participate in GMA 7 joint planning functions to develop and adopt desired future conditions.

Creating two single GCDs would be financially feasible based on the taxable values presented by the Upton and Midland tax assessor-collector offices. An Upton GCD could generate about \$209,000 taxed at the \$0.01 per \$100 and Midland GCD could generate about \$102,800 with a \$0.01 per \$100 tax. However, the smaller land area of either the Upton or Midland PGMA territories, compared to other GMA 7 GCDs, make the cost per square mile higher for groundwater management. Therefore, a suitable taxable rate exists in the Upton and the Midland PGMA territories to fund district groundwater management but the smaller land area that would be taxed makes this option also seem a less practicable and a less favorable option.

CONCLUSIONS

The Executive Director concludes that all of the Upton and Midland PGMA territories be added to the Glasscock GCD in accordance with 30 TAC Chapters §§293 and 294. Glasscock GCD has an established Edwards-Trinity Plateau Aquifer groundwater management program in place and participates in GMA 7 joint planning. The entire PGMA would be governed by an established groundwater management program that manages the same aquifer with an adopted management plan, implementing desired future conditions (DFCs), and existing rules. When the Legislature created Santa Rita UWCD in Reagan County, an option was provided to the landowners of Reagan County to join the existing Glasscock County GCD. A number of Reagan County landowners opted for inclusion into Glasscock GCD in the past. Similar options to join Glasscock GCD by landowners in the PGMA may again support this option.

The Executive Directors concludes that the alternative options to add all of the Upton and Midland PGMA territories to the Santa Rita UWCD or add the Midland territory to Glasscock GCD and add Upton territory to Santa Rita GCD are all feasible and practicable options. Adding the Upton and Midland PGMA territories to historically successful districts like the Glasscock GCD or Santa Rita UWCD prevents the duplicative development of new groundwater management programs and rules for the management of the Edwards-Trinity Plateau Aquifer.

The Executive Director concludes that creating a new GCD for the Upton and Midland PGMA territories could be financially feasible based on comparing surrounding groundwater districts taxing base, but is less practicable and is less favored because of new district start-up functions and expenses, largely duplicative required management programs and rules. The smaller land area causes a higher cost per square mile for GCD management and funding by production fees alone does not appear to be adequate to finance a GCD makes the option of creating a new GCD seem a less practicable and a less favorable option.

The Executive Director has also identified State University Lands, University of Texas, within the Upton PGMA territory. The Texas Water Code, Title 2, Subtitle E., Chapter 35, Section §35.017, provides that the State agency having control over State owned lands in a PGMA may elect by written agreement with the Commission and the district to be included in the State-owned land in the district. If not, the State agency must establish a

groundwater management plan that will conserve, protect, and prevent the waste of groundwater on that State owned land.

RECOMMENDATION

In accordance with state law and TCEQ rules, this report conveys the Executive Director's petition to the Commission for actions to establish groundwater management in the Upton and Midland territories within the Reagan Upton Midland PGMA that have neither created nor joined an existing GCD.

The Executive Director recommends the Commission issue an order recommending that all of the Upton and Midland PGMA territories be added to the Glasscock GCD in accordance with Chapters §§293 and 294.

REFERENCES

Albright, J.S. and Beach, J., *2011 Region F Water Plan*, Freeze and Nichols, Inc. and LBG-Guyton Associates, Inc., Volume I Main Report with Appendices, November 2010, (used by the TWDB in preparing the 2012 State Water Plan).

Personal communication, August 2012 through October 2012: Coke County UWCD, Crockett County GCD, Glasscock GCD, Hickory UWCD No. 1, Hill Country UWCD, Irion County WCD, Kimble County GCD, Kinney County GCD, Lipan-Kickapoo WCD, Lone Wolf GCD, Menard County UWCD, Middle Pecos GCD, Plateau UWC&SD, Real-Edwards C&RD, Santa Rita UWCD, Sterling County UWCD, Sutton County UWCD, Wes-Tex GCD, Uvalde County UWCD and their respective website.

Rambo, D., Midland County Tax Appraiser Office, personal communication August 2010 through November 2012.

Stephens, S., Upton County Tax Appraiser Office, personal communication August 2010 through November 2012.

Vaughan, E.G., Crutcher, J.M., Labatt III, T.W., McMahan, L.H., Bradford Jr., B.R., Cluck, M., Callahan, M., 2012, *Water for Texas, 2012 State Water Plan*; Texas Water Development Board, January 2012.