



PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT
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December 20, 2023

Texas Water Development Board
P O Box 13231
Austin, TX 78711-3231

RE: Pecan Valley Groundwater Conservation District Revised Management Plan

On December 14, 2023, the Board of Directors of the Pecan Valley Groundwater Conservation District held the required public hearing at a public meeting to adopt a revised management plan for the district. A copy of the adopted management plan is attached to this letter for your review.

If you have any questions or comments regarding the plan, please contact the District.

Sincerely,

Cindy Parma
General Manager



GROUNDWATER MANAGEMENT PLAN

PECAN VALLEY

GROUNDWATER CONSERVATION DISTRICT

Adopted 10/22/2003

1st Revision 02/17/2009

2nd Revision 03/18/2014

3rd Revision 01/15/2019

4th Revision 12/14/23

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DISTRICT MISSION

The Pecan Valley Groundwater Conservation District (District) provides for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater within the defined boundary of the district, through sound management strategies, while protecting private property rights.

The Pecan Valley Groundwater Conservation District will pursue this goal through the gathering of scientific data regarding the hydrological characteristics of the aquifers that underlie DeWitt County, and the adoption and enforcement of fair and appropriate rules governing well spacing and production and use of the groundwater, and through a monitoring program to manage groundwater withdrawal within the district to a sustainable yield of the aquifer.

PURPOSE OF THE GROUNDWATER MANAGEMENT PLAN

Senate Bill 1, enacted by the 75th Texas Legislature in 1997, and Senate Bill 2, enacted by the 77th Texas Legislature in 2001, established a comprehensive statewide water resource planning process and the actions necessary for groundwater conservation districts to manage and conserve the groundwater resources of the State of Texas. These bills required all groundwater conservation districts to develop a management plan which defines the groundwater needs and groundwater supplies within each district and the goals each district has set to achieve its mission.

In addition, the 79th Texas Legislature enacted House Bill 1763 in 2005 that requires joint planning among districts that are in the same groundwater management area. These districts must jointly agree upon and establish the desired future conditions of the aquifers within their respective groundwater management areas. Through this process, the districts will submit the desired future conditions to the Executive Administrator of the Texas Water Development Board, who, in turn, will provide each district within the groundwater management area with estimates of modeled available groundwater within each district. The modeled available groundwater will be based on the desired future conditions jointly established for each aquifer within the groundwater management area.

Technical information, such as the desired conditions of the aquifers within the jurisdiction of the district and the amount of modeled available groundwater from such aquifers is required by statute to be included in the management plan of the district and will guide the regulatory and management policies of the district. This management plan is intended to satisfy the requirements of Senate Bill 1, Senate Bill 2, House Bill 1763, the statutory requirements of Chapter 36 of the Texas Water Code, and the rules and requirements of the Texas Water Development Board.

DISTRICT INFORMATION

Creation

The district was created by House Bill 3231, 77th Texas Legislature. The citizens of DeWitt County ratified the district through a confirmation election held on November 6, 2001.

Directors

The Pecan Valley Groundwater Conservation District Board of Directors consists of five members, elected by the voters of DeWitt County and serve a four-year term. The district recognizes the same four precincts as the DeWitt County Commissioners, along with an at-large position. The terms of the director positions are staggered on a two-year election interval in even numbered years.

Authority

The district has the rights and responsibilities provided in Texas Water Code, Chapter 36, and Texas Administrative Code, Title 31, Chapter 356.

Revenue/Fees

The district receives income from property taxes and fees imposed on permitted production amounts of non-exempt wells and application/registration fees.

Location and Extent

The jurisdiction of PVGCD includes all territory located within DeWitt County. This area encompasses approximately 909 square miles. The district is bounded by Victoria County, Goliad County, Karnes County, Gonzales County and Lavaca County.

CRITERIA FOR PLAN APPROVAL

Time Period of this Plan

This management plan will become effective, after notice and hearing, and upon adoption by the PVGCD Board of Directors, and approval as administratively complete by the Texas Water Development Board. This plan will remain in effect for five (5) years after the date of approval or until a revised plan is adopted and approved by the Texas Water Development Board.

Notice and Hearing Related to Plan Adoption – TWC §36.1071(a)

Public notices documenting that the plan was adopted following the required public hearing and meeting of the Board of Directors are included in Appendix D.

Coordination with Regional Surface Water Management Entities – TWC §36.1071(a)

Letters transmitting this plan to the surface water management entities of the DeWitt County region for coordination purposes are included in Appendix E.

Board Resolution Adopting Management Plan – TWC §36.1071(a)

A copy of the resolution approved by the Board of Directors of the Pecan Valley Groundwater Conservation District adopting this plan is included in Appendix F.

ESTIMATES OF TECHNICAL INFORMATION REQUIRED BY THE TEXAS WATER CODE AND TEXAS ADMINISTRATIVE CODE

Estimate of modeled available groundwater in the district based on desired future conditions - TWC §36.1071(e)(3)(A) and 31 TAC 356.52(a)(5)(A)

Texas Water Code 36.001 defines modeled available groundwater as “the amount of water that the executive administrator determines may be produced on an average annual basis to achieve a desired future condition established under Section 36.108.”

The joint planning process set forth in Texas Water Code 36.108 must be collectively conducted by all groundwater conservation districts within the same groundwater management area. The district is a member of Groundwater Management Area 15.

Groundwater Management Area 15 completed the third round of the joint planning process to determine the desired future condition of the aquifers within the groundwater management area.

District representatives adopted the desired future condition, by resolution, for the Gulf Coast Aquifer within Groundwater Management Area 15 on October 14, 2021. The adopted desired future conditions were then forwarded to the Texas Water Development Board for development of the modeled available groundwater calculations.

The resolution adopting the desired future condition for Groundwater Management Area 15 states the gma-specific DFC “for the counties in the groundwater management area shall not exceed an average drawdown of 13 feet for the Gulf Coast Aquifer System at December 2080;”

The resolution adopting the desired future condition for Groundwater Management Area 15 states the county-specific DFC for DeWitt County shall not exceed “an average drawdown of 17 feet in the Gulf Coast Aquifer System through 2080.”

The technical consultant of Groundwater Management Area 15 submitted the adopted desired future conditions and [explanatory report](#) for Groundwater Management Area 15 on December 13, 2021, to Texas Water Development Board.

The Texas Water Development Board reported the modeled available groundwater for Groundwater Management Area 15 in GAM Run 21-020 MAG, which is incorporated into this management plan as Appendix C.

The modeled available groundwater, in acre-feet per year (AFY), of the Gulf Coast Aquifer within the district per Table 2 of the GAM Run 21-020 MAG specifies the following values for the district:

County	Year						
	2020	2030	2040	2050	2060	2070	2080
<i>DeWitt</i>	17,993	17,958	17,912	17,827	17,806	17,784	17,772

Estimate of amount of groundwater being used within the district on an annual basis – TWC §36.1071(e)(3)(b) and 31 TAC §356.52(a)(5)(B)

The district recognizes the estimate of the amount of groundwater being used within the district on an annual basis, according to information provided by the Texas Water Development Board, totals 10,276 acre-feet in year 2019. Refer to Appendix A and the 2022 State Water Plan Datasets for additional information.

Estimate of annual amount of recharge from precipitation to the groundwater resources within the district – TWC §36.1071(e)(3)(C) and 31 TAC §356.52(a)(5)(C)

The district recognizes the estimate of the amount of water recharging the groundwater resources within the district from precipitation, according to information provided by the Texas Water Development Board, totals 9,832 acre-feet. Refer to Appendix B for additional information.

Estimate for each aquifer, annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers – TWC §36.1071(e)(3)(D) and 31 TAC §356.52(a)(5)(D)

The district recognizes the estimate of the annual volume of water discharging from the aquifer to springs and any surface water bodies for each aquifer, including lakes, streams, and rivers within the district, according to information provided by the Texas Water Development Board, totals 9,967 acre-feet. Refer to Appendix B for additional information.

Estimate of annual volume of flow into and out of the district within each aquifer, and between aquifers in the district – TWC §36.1071(e)(3)(E) and 31 TAC §356.52(a)(5)(E)

The district recognizes the estimate of the annual volume of groundwater flowing into the district within each aquifer, according to information provided by the Texas Water Development Board, totals 2,200 acre-feet. The district recognizes the

estimate of the annual volume of groundwater flowing out of the district within each aquifer, according to information provided by the Texas Water Development Board, totals 10,652 acre-feet. The district recognizes the estimate of the net annual volume of groundwater flowing between aquifers in the district, according to information provided by the Texas Water Development Board, totals 889 acre-feet. Refer to Appendix B for additional information.

Estimate of projected surface water supply within the district according to the most recently adopted state water plan – TWC §36.1071(e)(3)(F) and 31 TAC §356.52(a)(5)(F)

The district recognizes the sum of projected surface water supplies, according to information provided by the Texas Water Development Board, is 1,014 acre-feet for year 2030 and 1,010 acre-feet for year 2070. Refer to Appendix A and the 2022 State Water Plan Datasets for additional information.

Estimate of projected total demand for water within the district according to the most recently adopted state water plan – TWC §36.1071(e)(3)(G) and 31 TAC §356.52(a)(5)(G)

The district recognizes the sum of projected water demands, according to the Texas Water Development Board, is 9,973 acre-feet for year 2030 and 7,358 acre-feet for year 2070. Refer to Appendix A and the 2022 State Water Plan Datasets for additional information.

CONSIDER THE WATER SUPPLY NEEDS AND WATER MANAGEMENT STRATEGIES INCLUDED IN THE ADOPTED STATE WATER PLAN - TWC §36.1071(e)(4)

The district recognizes the sum of projected water supply needs within the district, according to information provided by the Texas Water Development Board, is 1,935 acre-feet in 2030 and decreases to 0 acre-feet in 2070.

The district recognizes the Municipal Water Conservation Strategy and the Local Gulf Coast Aquifer Development are projected to supply 2,501 acre-feet of water in the district in 2030 and 3,091 acre-feet of water in the district in 2070.

The district has implemented well spacing, production limits and historic use protections within the rules of the district and utilizes these regulations to evaluate permitting requests. Refer to Appendix A and the 2022 State Water Plan Datasets for additional information.

DETAILS ON THE DISTRICT MANAGEMENT OF GROUNDWATER

The Texas Legislature has determined that GCDs, such as the Pecan Valley Groundwater Conservation District, are the state's preferred method of groundwater management. The Texas Legislature codified its groundwater management policy decision in Section 36.0015 of the Texas Water Code, which provides that GCDs will manage groundwater resources through rules developed and implemented in accordance with Chapter 36 of the Texas Water Code. Chapter 36 establishes directives for GCDs and the statutory authority to carry out such directives to enable GCDs to have the proper tools to protect and preserve the groundwater resources within their boundaries. The district will give strong consideration to the economic and cultural activities which occur within the district and which rely upon the continued use of groundwater.

The district will use the regulatory tools it has been given by Chapter 36 to properly address the groundwater issues within DeWitt County, such as groundwater quality and groundwater supply. The district believes that the prevention of contamination of its groundwater resources through abandoned and deteriorated water wells is important. Wells that have been abandoned or not properly maintained provide direct conduits or pathways that allow contamination from the surface to quickly reach the groundwater resources of the district. To address the threats to the water quality of its groundwater resources, the district requires, through its rules, that all abandoned, deteriorated, or replaced wells be plugged in compliance with the Water Well Drillers and Pump Installers Rules of the Texas Department of Licensing and Regulation. The district will also place a priority on the capping of water wells that the well owner plans to use at a later date in order to eliminate waste, prevent pollution, and stop future deterioration of the well casing.

The district has established a monitoring well network to monitor the changing storage conditions of the groundwater supplies within the district. The district will make a regular assessment of water supply and groundwater storage conditions and has reported and will continue to report those conditions to the District Board of Directors and to the public. The district has also worked and will continue to work with any local governmental entities or agencies of the State of Texas on any well monitoring efforts or well investigations which are conducted.

The district is using the regulatory tools granted to GCDs by Chapter 36 to preserve and protect the existing and historic users of groundwater within the district. The Texas Legislature empowered the district to protect existing users of groundwater, which are those individuals or entities currently invested in and using groundwater or the groundwater resources within the district for a beneficial purpose, and preserve historic use by historic users, which are those individuals or entities who used groundwater beneficially in the past. The district strives to protect and preserve such use to the extent practicable under the goals and objectives of this management plan. In accordance with Section 36.116 of the Texas Water Code,

the district is also protecting historic use through district rules on spacing of wells and production limits on groundwater to the extent practicable consistent with this management plan.

In order to better manage the groundwater resources of DeWitt County during times of high demand or within areas of high demand, the district may establish Critical Groundwater Depletion Areas and adopt different rules for those areas. The district may also adopt different rules for each subdivision of an aquifer or geologic strata located in whole or in part within the boundaries of the district or each geographic area overlying a subdivision of an aquifer located in whole or in part within the boundaries of the district. The district has adopted rules to regulate groundwater withdrawals by means of spacing and/or production limits. The relevant factors to be considered in making a determination to grant or deny a permit or limit groundwater withdrawals shall include those set forth in the Chapter 36 of the Texas Water Code, and the rules of the district.

ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE FOR PLAN IMPLEMENTATION – TWC §36.1071(e)(2)

The district will use the management plan to guide the district in its efforts to preserve and protect the groundwater resources of DeWitt County. Operations of the district, agreements entered into by the district and planning efforts in which the district may participate will be consistent with the provisions of this plan.

The [District Rules](https://www.pvgcd.org) can be found on the district's website. For additional information, refer to the district website: <https://www.pvgcd.org>. The district will adopt rules relating to the permitting of wells and the production of groundwater. The rules adopted by the district shall be pursuant to the TWC Chapter 36 and the provisions of this plan. All rules will be adhered to and enforced. The promulgation and enforcement of the rules will be based on the best technical evidence available.

The district shall treat all citizens with equality. Citizens may apply to the district for discretion in enforcement of the rules on grounds of adverse economic effect or unique local conditions. In granting of discretion to any rule, the Board shall consider the potential for adverse effect on adjacent landowners. The exercise of said discretion by the Board shall not be construed as limiting the power of the Board.

The district may amend the district rules as necessary to comply with changes to Chapter 36 of the Texas Water Code and to insure the best management practices of the groundwater in the district. The implementation of the rules of the district will be based on the best available scientific and technical data, and on fair and reasonable evaluation.

The district is committed to work and plan with other groundwater conservation districts in Groundwater Management Area 15. The district will use the management plan as part of its cooperation efforts with the neighboring groundwater conservation districts. The district will manage the supply of groundwater within the district based on desired future conditions and modeled available groundwater resulting from the Groundwater Management Area 15 cooperative planning process, exempt and non-exempt wells and groundwater demands, and the district's best available data.

The district has encouraged and will continue to encourage public cooperation in the implementation of the management plan for the district.

METHODOLOGY TO TRACK DISTRICT PROGRESS IN ACHIEVING MANAGEMENT GOALS – 31 TAC §356.52 (a)(4)

The General Manager of the district will prepare and present an annual report to the Board of Directors evaluating the impact of the district's activities on its goals, management objectives, and performance standards. The annual report will be presented within 180 days following the completion of the district's fiscal year. The district will maintain the report on file for public inspection at the district office.

MANAGEMENT GOALS, OBJECTIVES AND PERFORMANCE STANDARDS

Providing the Most Efficient Use of Groundwater: 31 TAC 356.52(a)(1)(A) and TWC §36.1071(a)(1)

Objective: Develop and maintain a Water Well Registration Program for tracking well information for wells within the district's boundaries.

Performance Standard: Each year, the district will summarize within the annual report, the changes related to water well registration, including the number of new and existing wells registered.

Objective: Develop and maintain a Water Well Permitting Program for tracking all permits authorizing water well operation and groundwater production.

Performance Standard: Each year, the district will summarize within the annual report, the changes related to water well permitting, including the number of new applications and the disposition of the applications.

Controlling and Preventing Waste of Groundwater: 31 TAC 356.52(a)(1)(B) and TWC §36.1071(a)(2)

Objective: Develop and maintain a program to identify the location of abandoned wells that will include a survey of landowners, well drillers, and the Texas Railroad Commission regarding any known abandoned wells, and initiate actions as necessary to enforce the notice, plugging and other requirements of Section 1901.255, Occupations Code.

Performance Standard: Include in the annual report the number of water well inspections resulting from these activities.

Controlling and Preventing Subsidence: 31 TAC 356.52(a)(1)(C) and TWC §36.1071(a)(3)

This management goal is not applicable to the Pecan Valley Groundwater Conservation District at this time because no significant subsidence has occurred in DeWitt County. The district will continue to monitor conditions for evidence of subsidence, and take appropriate action should significant subsidence develop.

The district reviewed the technical report titled *Final Report: Identification of the Vulnerability of the Major and Minor Aquifers of Texas to Subsidence with Regard to Groundwater Pumping; TWDB Contract Number 1648302062*. The report, in Section 4.2.4, characterizes all portions of DeWitt County as medium or higher risk of subsidence. This report represents the best available science on the matter of subsidence in Texas.

Addressing Conjunctive Surface Water Management Issues: 31 TAC 356.52(a)(1)(D) and TWC §36.1071(a)(4)

Objective: Participate in the regional water planning process by attending at least one South Central Texas Regional Water Planning Group (Region L) meeting held during the fiscal year.

Performance Standard: Summarize within annual report the dates and the number of meetings attended by representatives of the district during the preceding fiscal year.

Addressing Natural Resource Issues that Impact the Use and Availability of Groundwater and which are Impacted by the Use of Groundwater: 31 TAC 356.52(a)(1)(E) and TWC §36.1071(a)(5)

Objective: Develop and maintain a Water Quality Monitoring Program.

Performance Standard: Each year, the district will summarize within the annual report the monitoring activities including 1) the number of wells monitored and 2) the water quality measurements collected during the preceding fiscal year.

Addressing Drought Conditions: 31 TAC 356.52(a)(1)(F) and TWC §36.1071(a)(6)

Objective: Collect and review drought condition information related to DeWitt County and the surrounding region of Texas from the following website at least four meetings of the Board of Directors during the fiscal year; <https://www.waterdatafortexas.org/drought/>.

Performance Standard: The district will summarize within the annual report the number of weeks and/or months that the district experienced drought based on the U.S. Drought Monitor and the number of instances drought information was considered by the Board of Directors during the preceding fiscal year.

Addressing Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, or Brush Control where Appropriate and Cost Effective: 31 TAC 356.52(a)(1)(G) and TWC §36.1071(a)(7)

Objective: Promote conservation, rainwater harvesting or brush control within DeWitt County at least once during the fiscal year.

Performance Standard: The district will summarize within the annual report the number of instances the district promoted conservation, rainwater harvesting or brush control during the preceding fiscal year.

Goals related to Recharge Enhancement and Precipitation Enhancement are deemed to be not appropriate or cost-effective programs for the district at this time because there are no existing programs in nearby counties in which the district could participate and share costs.

Addressing the Desired Future Conditions Adopted by the District under TWC §36.108: 31 TAC §356.52(a)(1)(H) and TWC §36.1071(a)(8)

Objective: The district will monitor water levels of at least twelve (12) water wells within the district per year.

Performance Standard: Each year the district will summarize within the annual report the monitoring activities, including 1) the number of wells monitored; 2) the water level measurements collected during the preceding fiscal year; and 3) report the average annual change of water levels to evaluate achievement of the district's adopted desired future conditions.

List of Appendices

- Appendix A.** Estimated Historical Groundwater Use and 2022 State Water Plan Datasets: Pecan Valley Groundwater Conservation District
- Appendix B.** Groundwater Availability Model Run provided by Texas Water Development Board – GAM RUN 18-011: Pecan Valley Groundwater Conservation District Management Plan
- Appendix C.** Modeled Available Groundwater GAM RUN 21-020 MAG
- Appendix D.** Public Notices Regarding Hearing Related to Plan Adoption
- Appendix E.** Letters Coordinating with Regional Surface Water Management Entities
- Appendix F.** Pecan Valley Groundwater Conservation District Board of Director Resolution Adopting Management Plan
- Appendix G.** Minutes of Pecan Valley Groundwater Conservation District Board of Director Meeting related to the public hearing for and adoption of the Management Plan
- Appendix H.** Pecan Valley Groundwater Conservation District Contact Information

Appendix A. Estimated Historical Groundwater Use and 2022 State Water Plan
Datasets: Pecan Valley Groundwater Conservation District

Estimated Historical Groundwater Use And 2022 State Water Plan Datasets:

Pecan Valley Groundwater Conservation District

Texas Water Development Board
Groundwater Division
Groundwater Technical Assistance Section
stephen.allen@twdb.texas.gov
(512) 463-7317
October 24, 2023

GROUNDWATER MANAGEMENT PLAN DATA:

This package of water data reports (part 1 of a 2-part package of information) is being provided to groundwater conservation districts to help them meet the requirements for approval of their five-year groundwater management plan. Each report in the package addresses a specific numbered requirement in the Texas Water Development Board's groundwater management plan checklist. The checklist can be viewed and downloaded from this web address:

<http://www.twdb.texas.gov/groundwater/docs/GCD/GMPChecklist0113.pdf>

The five reports included in this part are:

1. Estimated Historical Groundwater Use (checklist item 2)
from the TWDB Historical Water Use Survey (WUS)
2. Projected Surface Water Supplies (checklist item 6)
3. Projected Water Demands (checklist item 7)
4. Projected Water Supply Needs (checklist item 8)
5. Projected Water Management Strategies (checklist item 9)
from the 2022 Texas State Water Plan (SWP)

Part 2 of the 2-part package is the groundwater availability model (GAM) report for the District (checklist items 3 through 5). The District should have received, or will receive, this report from the Groundwater Availability Modeling Section. Questions about the GAM can be directed to Grayson Dowlearn, grayson.dowlearn@twdb.texas.gov, (512) 475-1552.

DISCLAIMER:

The data presented in this report represents the most up to date WUS and 2022 SWP data available as of 10/24/2023. Although it does not happen frequently, either of these datasets are subject to change pending the availability of more accurate WUS data or an amendment to the 2022 SWP. District personnel must review these datasets and correct any discrepancies in order to ensure approval of their groundwater management plan.

The WUS dataset can be verified at this web address:

<http://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/>

The 2022 SWP dataset can be verified by contacting Sabrina Anderson (sabrina.anderson@twdb.texas.gov or 512-936-0886).

The values presented in the data tables of this report are county based. In cases where groundwater conservation districts cover only a portion of one or more counties the data values are modified with an apportioning multiplier to create new values that more accurately represent conditions within district boundaries. The multiplier used in the following formula is a land area ratio: $(\text{data value} * (\text{land area of district in county} / \text{land area of county}))$. For two of the four SWP tables (Projected Surface Water Supplies and Projected Water Demands) only the county-wide water user group (WUG) data values (county other, manufacturing, steam electric power, irrigation, mining and livestock) are modified using the multiplier. WUG values for municipalities, water supply corporations, and utility districts are not apportioned; instead, their full values are retained when they are located within the district, and eliminated when they are located outside (we ask each district to identify these entity locations).

The remaining SWP tables (Projected Water Supply Needs and Projected Water Management Strategies) are not modified because district-specific values are not statutorily required. But each district needs to **"consider" the county values in these tables.**

In the WUS table every category of water use (including municipal) is apportioned. Staff determined that breaking down the annual municipal values into individual WUGs was too complex.

TWDB recognizes that the apportioning formula used is not ideal but it is the best available process with respect to time and staffing constraints. If a district believes it has data that is more accurate it can add those data to the plan with an explanation of how the data were derived. Apportioning percentages that the TWDB used are listed above each applicable table.

For additional questions regarding this data, please contact Stephen Allen (stephen.allen@twdb.texas.gov or 512-463-7317).

Estimated Historical Water Use

TWDB Historical Water Use Survey (WUS) Data

Groundwater and surface water historical use estimates are currently unavailable for calendar year 2020. TWDB staff anticipates the calculation and posting of these estimates at a later date.

DEWITT COUNTY

100% (multiplier)

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2019	GW	2,763	113	5,837	0	592	971	10,276
	SW	1	0	651	0	0	649	1,301
2018	GW	3,128	132	4,911	0	496	971	9,638
	SW	1	0	546	0	0	647	1,194
2017	GW	2,815	105	2,918	0	405	938	7,181
	SW	1	0	324	0	0	625	950
2016	GW	2,973	162	2,999	0	405	918	7,457
	SW	1	0	333	0	0	612	946
2015	GW	3,058	226	4,603	0	211	909	9,007
	SW	2	0	512	0	0	605	1,119
2014	GW	3,274	222	5,337	0	886	883	10,602
	SW	4	0	594	0	0	589	1,187
2013	GW	3,327	230	3,265	0	922	878	8,622
	SW	6	0	362	0	0	585	953
2012	GW	3,680	272	1,722	0	915	893	7,482
	SW	16	0	192	0	0	595	803
2011	GW	4,064	242	782	0	601	1,561	7,250
	SW	13	0	86	0	0	1,038	1,137
2010	GW	3,372	165	338	0	462	1,500	5,837
	SW	12	0	69	0	0	999	1,080
2009	GW	3,701	172	191	0	648	1,105	5,817
	SW	31	0	39	0	0	736	806
2008	GW	3,531	191	43	0	636	1,109	5,510
	SW	32	0	9	0	0	740	781
2007	GW	3,021	177	0	0	153	1,342	4,693
	SW	25	0	0	0	0	896	921
2006	GW	3,628	209	0	0	265	1,232	5,334
	SW	36	0	0	0	0	821	857
2005	GW	3,232	519	0	0	234	1,196	5,181
	SW	37	0	0	0	0	797	834
2004	GW	4,021	582	0	0	96	112	4,811
	SW	41	0	0	0	0	1,813	1,854

Projected Surface Water Supplies

TWDB 2022 State Water Plan Data

DEWITT COUNTY

100% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
L	Gonzales County WSC	Guadalupe	Canyon Lake/Reservoir	18	17	16	15	14	13
L	Livestock, DeWitt	Guadalupe	Guadalupe Livestock Local Supply	631	631	631	631	631	631
L	Livestock, DeWitt	Lavaca	Lavaca Livestock Local Supply	282	282	282	282	282	282
L	Livestock, DeWitt	Lavaca-Guadalupe	Lavaca-Guadalupe Livestock Local Supply	9	9	9	9	9	9
L	Livestock, DeWitt	San Antonio	San Antonio Livestock Local Supply	75	75	75	75	75	75
Sum of Projected Surface Water Supplies (acre-feet)				1,015	1,014	1,013	1,012	1,011	1,010

Projected Water Demands

TWDB 2022 State Water Plan Data

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

DEWITT COUNTY

100% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
L	County-Other, DeWitt	Guadalupe	990	989	978	977	984	990
L	County-Other, DeWitt	Lavaca	177	177	175	175	176	177
L	County-Other, DeWitt	Lavaca-Guadalupe	2	2	2	2	2	2
L	County-Other, DeWitt	San Antonio	76	76	75	75	75	76
L	Cuero	Guadalupe	1,826	1,854	1,857	1,870	1,885	1,897
L	Gonzales County WSC	Guadalupe	105	107	108	109	110	110
L	Irrigation, DeWitt	Guadalupe	265	265	265	265	265	265
L	Irrigation, DeWitt	Lavaca	431	431	431	431	431	431
L	Irrigation, DeWitt	Lavaca-Guadalupe	8	8	8	8	8	8
L	Irrigation, DeWitt	San Antonio	53	53	53	53	53	53
L	Livestock, DeWitt	Guadalupe	1,449	1,449	1,449	1,449	1,449	1,449
L	Livestock, DeWitt	Lavaca	295	295	295	295	295	295
L	Livestock, DeWitt	Lavaca-Guadalupe	17	17	17	17	17	17
L	Livestock, DeWitt	San Antonio	143	143	143	143	143	143
L	Manufacturing, DeWitt	Guadalupe	134	169	169	169	169	169
L	Manufacturing, DeWitt	Lavaca	138	175	175	175	175	175
L	Mining, DeWitt	Guadalupe	2,405	2,259	1,668	1,081	494	229
L	Mining, DeWitt	Lavaca	506	475	351	227	104	48
L	Mining, DeWitt	San Antonio	254	239	176	114	52	24
L	Yoakum	Lavaca	390	393	390	391	394	397
L	Yorktown	Guadalupe	396	397	394	398	401	403
Sum of Projected Water Demands (acre-feet)			10,060	9,973	9,179	8,424	7,682	7,358

Projected Water Supply Needs

TWDB 2022 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

DEWITT COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
L	County-Other, DeWitt	Guadalupe	18	19	30	31	24	18
L	County-Other, DeWitt	Lavaca	43	43	45	45	44	43
L	County-Other, DeWitt	Lavaca-Guadalupe	0	0	0	0	0	0
L	County-Other, DeWitt	San Antonio	0	0	0	0	0	0
L	Cuero	Guadalupe	0	0	0	0	0	0
L	Gonzales County WSC	Guadalupe	64	51	41	29	19	9
L	Irrigation, DeWitt	Guadalupe	-265	-265	-265	-265	255	255
L	Irrigation, DeWitt	Lavaca	45	64	148	234	353	409
L	Irrigation, DeWitt	Lavaca-Guadalupe	7	7	7	7	7	7
L	Irrigation, DeWitt	San Antonio	-53	-53	49	51	51	51
L	Livestock, DeWitt	Guadalupe	0	0	0	0	0	0
L	Livestock, DeWitt	Lavaca	0	0	0	0	0	0
L	Livestock, DeWitt	Lavaca-Guadalupe	0	0	0	0	0	0
L	Livestock, DeWitt	San Antonio	0	0	0	0	0	0
L	Manufacturing, DeWitt	Guadalupe	23	-11	-5	2	3	3
L	Manufacturing, DeWitt	Lavaca	24	-11	-5	2	3	3
L	Mining, DeWitt	Guadalupe	-1,674	-1,557	-346	0	0	0
L	Mining, DeWitt	Lavaca	-44	-37	-16	-1	0	0
L	Mining, DeWitt	San Antonio	0	-1	0	-1	0	0
L	Yoakum	Lavaca	7	4	7	6	3	0
L	Yorktown	Guadalupe	0	0	0	0	0	0
Sum of Projected Water Supply Needs (acre-feet)			-2,036	-1,935	-637	-267	0	0

Projected Water Management Strategies

TWDB 2022 State Water Plan Data

DEWITT COUNTY

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
Cuero, Guadalupe (L)							
Municipal Water Conservation	DEMAND REDUCTION [DeWitt]	91	233	367	503	637	744
		91	233	367	503	637	744
Gonzales County WSC, Guadalupe (L)							
Municipal Water Conservation	DEMAND REDUCTION [DeWitt]	6	14	22	30	38	45
		6	14	22	30	38	45
Manufacturing, DeWitt, Guadalupe (L)							
Local Gulf Coast Aquifer Development	Gulf Coast Aquifer System [DeWitt]	0	119	119	119	119	119
		0	119	119	119	119	119
Manufacturing, DeWitt, Lavaca (L)							
Local Gulf Coast Aquifer Development	Gulf Coast Aquifer System [DeWitt]	0	123	123	123	123	123
		0	123	123	123	123	123
Mining, DeWitt, Guadalupe (L)							
Local Gulf Coast Aquifer Development	Gulf Coast Aquifer System [DeWitt]	1,674	1,557	1,472	1,473	1,472	1,474
		1,674	1,557	1,472	1,473	1,472	1,474
Mining, DeWitt, Lavaca (L)							
Local Gulf Coast Aquifer Development	Gulf Coast Aquifer System [DeWitt]	108	224	310	309	310	309
		108	224	310	309	310	309
Mining, DeWitt, San Antonio (L)							
Local Gulf Coast Aquifer Development	Gulf Coast Aquifer System [DeWitt]	155	156	155	155	155	154
		155	156	155	155	155	154
Yoakum, Lavaca (L)							
Municipal Water Conservation	DEMAND REDUCTION [DeWitt]	13	40	40	45	53	63
		13	40	40	45	53	63
Yorktown, Guadalupe (L)							
Municipal Water Conservation	DEMAND REDUCTION [DeWitt]	12	35	36	43	52	60
		12	35	36	43	52	60
Sum of Projected Water Management Strategies (acre-feet)		2,059	2,501	2,644	2,800	2,959	3,091

Estimated Historical Water Use and 2022 State Water Plan Dataset:

Pecan Valley Groundwater Conservation District

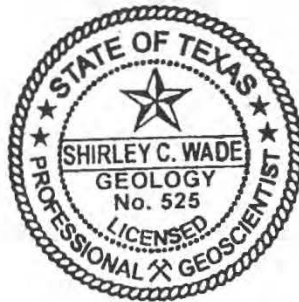
October 24, 2023

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Appendix B. Groundwater Availability Model Run provided by Texas Water Development Board – GAM RUN 18-011: Pecan Valley Groundwater Conservation District Management Plan

GAM RUN 18-011: PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT GROUNDWATER MANAGEMENT PLAN

Shirley C. Wade, Ph.D., P.G.
Texas Water Development Board
Groundwater Division
Groundwater Availability Modeling Department
512-936-0883
May 21, 2018



Shirley C. Wade
5/21/2018

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GAM RUN 18-011: PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT GROUNDWATER MANAGEMENT PLAN

Shirley C. Wade, Ph.D., P.G.
Texas Water Development Board
Groundwater Division
Groundwater Availability Modeling Department
512-936-0883
May 21, 2018

EXECUTIVE SUMMARY:

Texas State Water Code, Section 36.1071, Subsection (h) (Texas Water Code, 2015), states that, in developing its groundwater management plan, a groundwater conservation district shall use groundwater availability modeling information provided by the Executive Administrator of the Texas Water Development Board (TWDB) in conjunction with any available site-specific information provided by the district for review and comment to the Executive Administrator.

The TWDB provides data and information to the Pecan Valley Groundwater Conservation District in two parts. Part 1 is the Estimated Historical Water Use/State Water Plan dataset report, which will be provided to you separately by the TWDB Groundwater Technical Assistance Department. Please direct questions about the water data report to Mr. Stephen Allen at 512-463-7317 or stephen.allen@twdb.texas.gov. Part 2 is the required groundwater availability modeling information and this information includes:

1. the annual amount of recharge from precipitation, if any, to the groundwater resources within the district;
2. for each aquifer within the district, the annual volume of water that discharges from the aquifer to springs and any surface-water bodies, including lakes, streams, and rivers; and
3. the annual volume of flow into and out of the district within each aquifer and between aquifers in the district.

The groundwater management plan for the Pecan Valley Groundwater Conservation District should be adopted by the district on or before February 6, 2019

and submitted to the Executive Administrator of the TWDB on or before March 8, 2019. The current management plan for the Pecan Valley Groundwater Conservation District expires on May 7, 2019.

We used three groundwater availability models to estimate the management plan information for the aquifers within the Pecan Valley Groundwater Conservation District. Information for the Carrizo-Wilcox Aquifer is from version 2.01 of the groundwater availability model for the southern part of the Carrizo-Wilcox, Queen City, and Sparta aquifers (Kelley and others, 2004). Information for interaction between the Yegua-Jackson subcrop and parts of the Gulf Coast Aquifer System is from version 1.01 of the groundwater availability model for the Yegua-Jackson Aquifer (Deeds and others, 2010). Information for the Gulf Coast Aquifer System is from version 1.01 of the groundwater availability model for the central portion of the Gulf Coast Aquifer System (Chowdhury and others, 2004).

This report replaces the results of GAM Run 12-024 (Wade, 2012), as the approach used for analyzing model results has since been refined. Tables 1 and 2 summarize the groundwater availability model data required by statute and Figures 1 and 2 show the area of the models from which the values in the tables were extracted. If, after review of the figures, the Pecan Valley Groundwater Conservation District determines that the district boundaries used in the assessment do not reflect current conditions, please notify the TWDB at your earliest convenience.

METHODS:

In accordance with the provisions of the Texas State Water Code, Section 36.1071, Subsection (h), the three groundwater availability models mentioned above were used to estimate information for the Pecan Valley Groundwater Conservation District management plan. Water budgets were extracted for the historical model periods for the Carrizo-Wilcox, Aquifer (1980 through 1999), Yegua-Jackson subcrop (1980 through 1997) and Gulf Coast Aquifer System (1980 through 1999) using ZONEBUDGET Version 3.01 (Harbaugh, 2009). The average annual water budget values for recharge, surface-water outflow, inflow to the district, outflow from the district, and inter-aquifer flow for the aquifers within the district are summarized in this report.

PARAMETERS AND ASSUMPTIONS:

Carrizo-Wilcox Aquifer

- We used version 2.01 of the groundwater availability model for the southern part of the Carrizo-Wilcox, Queen City, and Sparta aquifers. See Deeds and others (2003) and Kelley and others (2004) for assumptions and limitations of the groundwater

availability model for the southern part of the Carrizo-Wilcox, Queen City, and Sparta aquifers.

- This groundwater availability model includes eight layers, which generally represent the Sparta Aquifer (Layer 1), the Weches Formation confining unit (Layer 2), the Queen City Aquifer (Layer 3), the Reklaw Formation confining unit (Layer 4), the Carrizo Formation (Layer 5), the Upper Wilcox Unit (Layer 6), the Middle Wilcox Unit (Layer 7), and the Lower Wilcox Unit (Layer 8).
- Because the Queen City and Sparta aquifers are not present in Pecan Valley Groundwater Conservation District, water budgets for the district were determined only for the Carrizo-Wilcox Aquifer (Layers 5 through 8, collectively).
- The model was run with MODFLOW-96 (Harbaugh and McDonald, 1996).

Gulf Coast Aquifer System

- We used version 1.01 of the groundwater availability model for the central part of the Gulf Coast Aquifer System for this analysis. See Chowdhury and others (2004) and Waterstone and others (2003) for assumptions and limitations of the groundwater availability model.
- The model has four layers which represent the Chicot Aquifer (Layer 1), the Evangeline Aquifer (Layer 2), the Burkeville Confining Unit (Layer 3), and the Jasper Aquifer and parts of the Catahoula Formation in direct hydrologic communication with the Jasper Aquifer (Layer 4).
- Water budgets for the district were determined for the Gulf Coast Aquifer System (Layers 1 through 4, collectively).
- The model was run with MODFLOW-96 (Harbaugh and McDonald, 1996).
- Because this model assumes a no-flow boundary condition at the base we used version 1.01 of the groundwater availability model for the Yegua-Jackson Aquifer to investigate groundwater flows between the Catahoula Formation and the Yegua-Jackson subcrop (non-aquifer) and between the Catahoula Formation and the base of the Gulf Coast Aquifer System. See Deeds and others (2010) for assumptions and limitations of the groundwater availability model for the Yegua-Jackson Aquifer.

RESULTS:

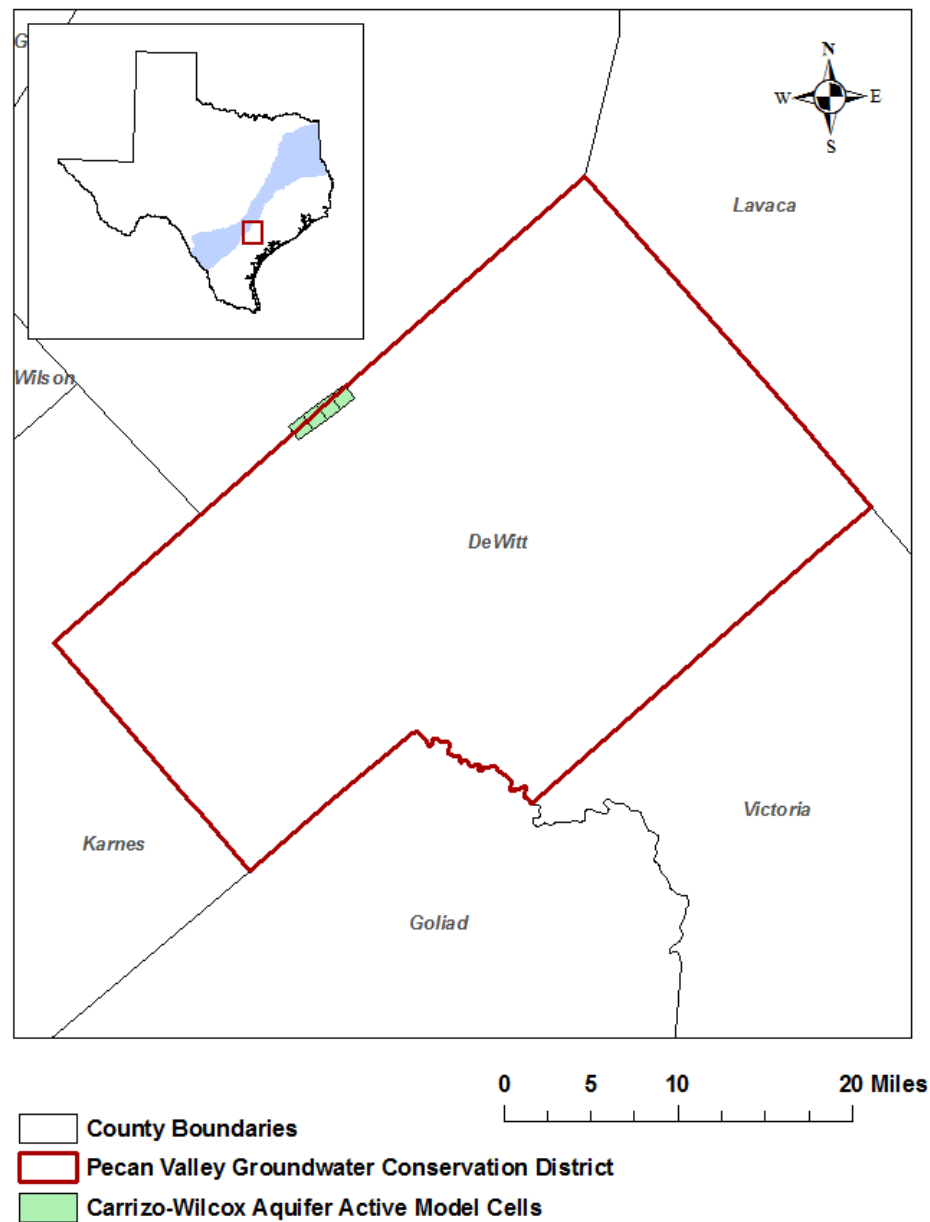
A groundwater budget summarizes the amount of water entering and leaving the aquifers according to the groundwater availability model. Selected groundwater budget components listed below were extracted from the groundwater availability model results for the Carrizo-Wilcox Aquifer and the Gulf Coast Aquifer System, located within Pecan Valley Groundwater Conservation District and averaged over the historical calibration periods, as shown in Tables 1 and 2.

1. Precipitation recharge—the areally distributed recharge sourced from precipitation falling on the outcrop areas of the aquifers (where the aquifer is exposed at land surface) within the district.
2. Surface-water outflow—the total water discharging from the aquifer (outflow) to surface-water features such as streams, reservoirs, and springs.
3. Flow into and out of district—the lateral flow within the aquifer between the district and adjacent counties.
4. Flow between aquifers—the net vertical flow between the aquifer and adjacent aquifers or confining units. This flow is controlled by the relative water levels in each aquifer and aquifer properties of each aquifer or confining unit that define the amount of leakage that occurs.

The information needed for the district's management plan is summarized in Tables 1 and 2. It is important to note that sub-regional water budgets are not exact. This is due to the size of the model cells and the approach used to extract data from the model. To avoid double accounting, a model cell that straddles a political boundary, such as a district or county boundary, is assigned to one side of the boundary based on the location of the centroid of the model cell. For example, if a cell contains two counties, the cell is assigned to the county where the centroid of the cell is located.

TABLE 1. SUMMARIZED INFORMATION FOR THE CARRIZO-WILCOX AQUIFER FOR PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT'S GROUNDWATER MANAGEMENT PLAN. ALL VALUES ARE REPORTED IN ACRE-FEET PER YEAR AND ROUNDED TO THE NEAREST 1 ACRE-FOOT.

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Carrizo-Wilcox Aquifer	0
Estimated annual volume of water that discharges from the aquifer to springs and any surface-water body including lakes, streams, and rivers	Carrizo-Wilcox Aquifer	0
Estimated annual volume of flow into the district within each aquifer in the district	Carrizo-Wilcox Aquifer	346
Estimated annual volume of flow out of the district within each aquifer in the district	Carrizo-Wilcox Aquifer	0
Estimated net annual volume of flow between each aquifer in the district	Flow from Carrizo-Wilcox Aquifer into the overlying Reklaw Confining Unit	16
	Flow from Carrizo-Wilcox Aquifer to brackish Carrizo-Wilcox units	317



gcd boundaries date = 01.22.18, county boundaries date = 02.02.11, czwx_s_qcsp model grid date = 08.26.15

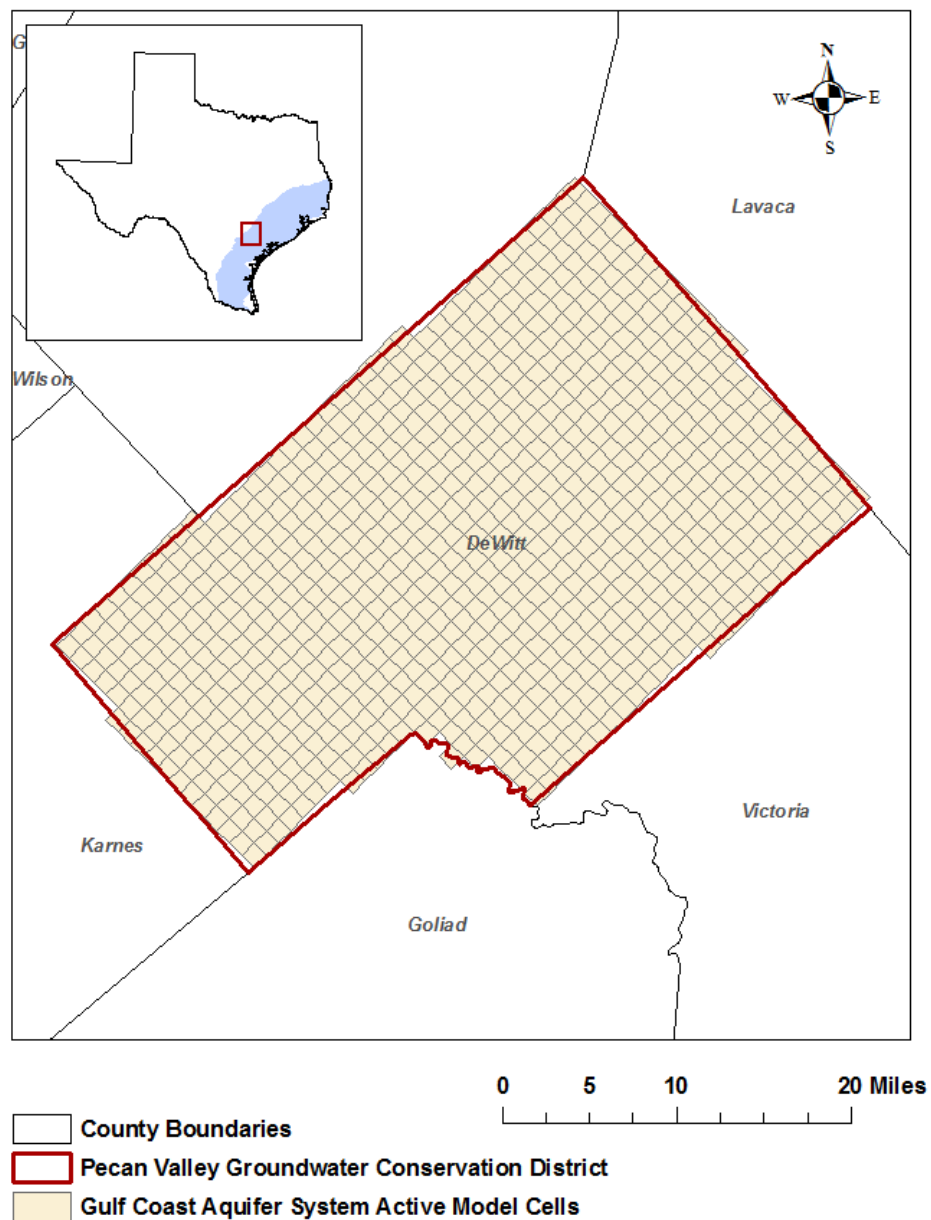
FIGURE 1. AREA OF THE GROUNDWATER AVAILABILITY MODEL FOR THE CARRIZO-WILCOX AQUIFER FROM WHICH THE INFORMATION IN TABLE 1 WAS EXTRACTED (THE AQUIFER EXTENT WITHIN THE DISTRICT BOUNDARY).

TABLE 2. SUMMARIZED INFORMATION FOR THE GULF COAST AQUIFER SYSTEM FOR PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT'S GROUNDWATER MANAGEMENT PLAN. ALL VALUES ARE REPORTED IN ACRE-FEET PER YEAR AND ROUNDED TO THE NEAREST 1 ACRE-FOOT.

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Gulf Coast Aquifer System	9,832
Estimated annual volume of water that discharges from the aquifer to springs and any surface-water body including lakes, streams, and rivers	Gulf Coast Aquifer System	9,967
Estimated annual volume of flow into the district within each aquifer in the district	Gulf Coast Aquifer System	1,854
Estimated annual volume of flow out of the district within each aquifer in the district	Gulf Coast Aquifer System	10,652
Estimated net annual volume of flow between each aquifer in the district	Flow from the Catahoula Formation into the Jasper Aquifer ¹	381
	Flow into the Catahoula Formation from underlying formations ²	175

¹ Based on the general-head boundary flux from the groundwater availability model for the Yegua-Jackson Aquifer. A part of the flow from the Catahoula Formation confining system to the Jasper Aquifer represents flow to the Gulf Coast Aquifer System from deeper units and part represents flow within the Gulf Coast Aquifer System.

² Based on flux between layers 1 and 2 in the groundwater availability model for the Yegua-Jackson Aquifer.



gcd boundaries date = 01.22.18, county boundaries date = 02.02.11, glfc_c model grid date = 12.30.15

FIGURE 2. AREA OF THE GROUNDWATER AVAILABILITY MODEL FOR THE GULF COAST AQUIFER SYSTEM FROM WHICH THE INFORMATION IN TABLE 2 WAS EXTRACTED (THE AQUIFER SYSTEM EXTENT WITHIN THE DISTRICT BOUNDARY).

LIMITATIONS:

The groundwater models used in completing this analysis are the best available scientific tools that can be used to meet the stated objectives. To the extent that this analysis will be used for planning purposes and/or regulatory purposes related to pumping in the past and into the future, it is important to recognize the assumptions and limitations associated with the use of the results. In reviewing the use of models in environmental regulatory decision making, the National Research Council (2007) noted:

“Models will always be constrained by computational limitations, assumptions, and knowledge gaps. They can best be viewed as tools to help inform decisions rather than as machines to generate truth or make decisions. Scientific advances will never make it possible to build a perfect model that accounts for every aspect of reality or to prove that a given model is correct in all respects for a particular regulatory application. These characteristics make evaluation of a regulatory model more complex than solely a comparison of measurement data with model results.”

A key aspect of using the groundwater model to evaluate historical groundwater flow conditions includes the assumptions about the location in the aquifer where historical pumping was placed. Understanding the amount and location of historical pumping is as important as evaluating the volume of groundwater flow into and out of the district, between aquifers within the district (as applicable), interactions with surface water (as applicable), recharge to the aquifer system (as applicable), and other metrics that describe the impacts of that pumping. In addition, assumptions regarding precipitation, recharge, and interaction with streams are specific to particular historical time periods.

Because the application of the groundwater models was designed to address regional-scale questions, the results are most effective on a regional scale. The TWDB makes no warranties or representations related to the actual conditions of any aquifer at a particular location or at a particular time.

It is important for groundwater conservation districts to monitor groundwater pumping and overall conditions of the aquifer. Because of the limitations of the groundwater model and the assumptions in this analysis, it is important that the groundwater conservation districts work with the TWDB to refine this analysis in the future given the reality of how the aquifer responds to the actual amount and location of pumping now and in the future. Historical precipitation patterns also need to be placed in context as future climatic conditions, such as dry and wet year precipitation patterns, may differ and affect groundwater flow conditions.

REFERENCES:

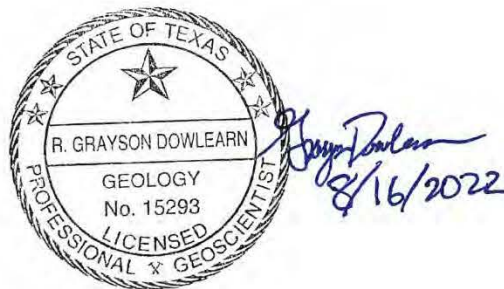
- Chowdhury, A.H., Wade, S., Mace, R.E., and Ridgeway, C., 2004, Groundwater Availability Model of the Central Gulf Coast Aquifer System: Numerical Simulations through 1999- Model Report, 114 p.,
http://www.twdb.texas.gov/groundwater/models/gam/glfc c/TWDB Recalibration_Report.pdf.
- Deeds, N., Kelley, V., Fryar, D., Jones, T., Whallon, A.J., and Dean, K.E., 2003, Groundwater Availability Model for the Southern Carrizo-Wilcox Aquifer: Contract report to the Texas Water Development Board, 452 p.,
<http://www.twdb.texas.gov/groundwater/models/gam/czwx s/CZWX S Full Report.pdf>.
- Deeds, N. E., Yan, T., Singh, A., Jones, T. L., Kelley, V. A., Knox, P. R., and Young, S. C., 2010, Groundwater availability model for the Yegua-Jackson Aquifer: Final report prepared for the Texas Water Development Board by INTERA, Inc., 582 p.,
<http://www.twdb.texas.gov/groundwater/models/gam/ygik/YGJK Model Report.pdf>.
- Harbaugh, A. W., 2009, Zonebudget Version 3.01, A computer program for computing subregional water budgets for MODFLOW ground-water flow models: U.S. Geological Survey Groundwater Software.
- Harbaugh, A. W., and McDonald, M. G., 1996, User's documentation for MODFLOW-96, an update to the U.S. Geological Survey modular finite-difference ground-water flow model: U.S. Geological Survey Open-File Report 96-485, 56 p.
- Kelley, V. A., Deeds, N. E., Fryar, D. G., and Nicot, J. P., 2004, Groundwater availability models for the Queen City and Sparta aquifers: Contract report to the Texas Water Development Board, 867 p.,
<http://www.twdb.texas.gov/groundwater/models/gam/qcsp/QCSP Model Report.pdf?d=1737.9650000000001>.
- National Research Council, 2007, Models in Environmental Regulatory Decision Making Committee on Models in the Regulatory Decision Process, National Academies Press, Washington D.C., 287 p., http://www.nap.edu/catalog.php?record_id=11972.
- Texas Water Code, 2015, <http://www.statutes.legis.state.tx.us/docs/WA/pdf/WA.36.pdf>.
- Wade, S., 2012, GAM Run 12-024: Pecan Valley Groundwater Conservation District Management Plan, 12 p.,
<http://www.twdb.texas.gov/groundwater/docs/GAMruns/GR12-024.pdf>
- Waterstone Environmental Hydrology and Engineering Inc. and Parsons, 2003, Groundwater availability of the Central Gulf Coast Aquifer: Numerical Simulations to

2050, Central Gulf Coast, Texas Contract report to the Texas Water Development Board, 157 p.

Appendix C. Modeled Available Groundwater GAM RUN 21-020 MAG

GAM RUN 21-020 MAG: MODELED AVAILABLE GROUNDWATER FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15

Grayson Dowlearn, P.G.
Texas Water Development Board
Groundwater Division
Groundwater Modeling Section
512-475-1552
August 16, 2022



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GAM RUN 21-020 MAG: MODELED AVAILABLE GROUNDWATER FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15

Grayson Dowlearn, P.G.
Texas Water Development Board
Groundwater Division
Groundwater Modeling Section
512-475-1552
August 16, 2022

EXECUTIVE SUMMARY:

Groundwater Management Area 15 adopted the desired future conditions listed in Table 1 for the Gulf Coast Aquifer System on October 14, 2021. The Carrizo-Wilcox, Queen City, Sparta, and Yegua-Jackson aquifers were declared not relevant by Groundwater Management Area 15 for the purpose of joint planning. Groundwater Management Area 15 submitted model files as part of the Desired Future Conditions Explanatory Report for Groundwater Management Area 15 (Keester and others, 2021), which meet the desired future conditions adopted by the district representatives of Groundwater Management Area 15, to the Texas Water Development Board (TWDB) on December 13, 2021. The TWDB determined that the explanatory report and other materials submitted by the district representatives were administratively complete on April 22, 2022.

The modeled available groundwater values that meet the adopted desired future conditions for the Gulf Coast Aquifer System and its associated aquifers within Groundwater Management Area 15 are summarized by decade from 2020 to 2080 in Table 2 by groundwater conservation district and county. Figure 1 provides the groundwater conservation district and county boundaries within GMA 15. Table 3 provides modeled available groundwater values by decade from 2030 to 2080 summarized by county, regional water planning area, and river basin, for use in the regional water planning process. Figure 2 provides the county, regional water planning area, and river basin boundaries within Groundwater Management Area 15. Modeled available groundwater values fluctuate within Groundwater Management Area 15 over time, ranging from a maximum of 529,006 acre-feet per year in 2030 to a minimum of 522,307 acre-feet per year in 2040. The estimates were extracted from results of a model run using the groundwater availability model for the central portion of the Gulf Coast Aquifer System (Version 1.01; Chowdhury and others, 2004).

August 16, 2022

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REQUESTOR:

Mr. Tim Andruss, Chair and Administrator of Groundwater Management Area 15.

DESCRIPTION OF REQUEST:

Mr. Tim Andruss provided the TWDB with the desired future conditions of the Gulf Coast Aquifer System on behalf of Groundwater Management Area (GMA) 15 in a letter dated December 10, 2021. Groundwater conservation district representatives in Groundwater Management Area 15 adopted desired future conditions for the Gulf Coast Aquifer System on October 14, 2021, as described in Resolution No. 2021-01 (Appendix 2 in Keester and others, 2021). The desired future conditions included in Table 1 are average water level drawdowns by county between January 2000 and December 2080 based on the predictive groundwater flow Scenario GMA15_2019_001_v1 (Keester and others, 2021). The predictive simulations were developed from the groundwater availability model for the Gulf Coast Aquifer System (Version 1.01; Chowdhury and others, 2004).

August 16, 2022

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TABLE 1. DESIRED FUTURE CONDITIONS FOR EACH COUNTY WITHIN GROUNDWATER MANAGEMENT AREA 15 EXPRESSED AS AVERAGE DRAWDOWN BETWEEN JANUARY 2000 AND DECEMBER 2080 IN FEET SUBMITTED BY GROUNDWATER MANAGEMENT AREA 15. (ADAPTED FROM SUBMITTED RESOLUTION)

County	Aquifer	Desired future condition
Aransas	Gulf Coast Aquifer System	0
Bee	Gulf Coast Aquifer System	7
Calhoun	Gulf Coast Aquifer System	5
Colorado	Chicot and Evangeline	17
	Jasper	25
De Witt	Gulf Coast Aquifer System	17
Fayette	Gulf Coast Aquifer System	44
Goliad	Chicot	-4
	Evangeline	-2
	Burkeville	7
	Jasper	14
Jackson	Gulf Coast Aquifer System	15
Karnes	Gulf Coast Aquifer System	22
Lavaca	Gulf Coast Aquifer System	18
Matagorda	Chicot and Evangeline	11
Refugio	Gulf Coast Aquifer System	5
Victoria	Gulf Coast Aquifer System	5
Wharton	Chicot and Evangeline	15
Groundwater Management Area 15	Gulf Coast Aquifer System	13

After review of the explanatory report and model files, the TWDB was able to confirm that the submitted model files satisfactorily met the desired future conditions and did not require additional clarifications from Groundwater Management Area 15.

METHODS:

The TWDB ran the central portion of the Gulf Coast Aquifer System groundwater availability model (Version 1.01; Chowdhury and others, 2004) using the predictive model files submitted with the explanatory report (Keester and others, 2021) to calculate the drawdown and modeled available groundwater values for the Gulf Coast Aquifer System within Groundwater Management Area 15. The submitted predictive model files included the Scenario GMA15_2019_001_v1 (Keester and others, 2021) pumping file and the GAM Run 10-008 Addendum (Wade, 2010) model files extended to the year 2080. Drawdown was calculated for each county and model layer by first excluding model cells that went dry and model cells that fall outside of the official aquifer footprint, and then summing the drawdown (difference between the water levels from January 2000 [initial heads] to December 2080 [stress period 81]) in the remaining cells of each county and dividing by the number of model cells within that county. Drawdown values were compared to the desired future conditions and were determined to fall within the accepted tolerance for Groundwater Management Area 15.

Modeled available groundwater values were determined by extracting pumping rates by decade from the model results using ZONEBUDGET Version 3.01 (Harbaugh, 2009). Annual pumping rates by aquifer are presented from 2020 to 2080 by county and groundwater conservation district, subtotaled by groundwater conservation district, and summed for Groundwater Management Area 15 (Table 2). Annual pumping rates are also presented from 2030 to 2080 by county, river basin, and regional water planning area within Groundwater Management Area 15 for use in regional water planning (Table 3).

Modeled Available Groundwater and Permitting

As defined in Chapter 36 of the Texas Water Code (2011), “modeled available groundwater” is the estimated average amount of water that may be produced annually to achieve a desired future condition. Groundwater conservation districts are required to consider modeled available groundwater, along with several other factors, when issuing permits in order to manage groundwater production to achieve the desired future condition(s). The other factors districts must consider include annual precipitation and production patterns, the estimated amount of pumping exempt from permitting, existing permits, and a reasonable estimate of actual groundwater production under existing permits.

PARAMETERS AND ASSUMPTIONS:

The parameters and assumptions for the modeled available groundwater estimates are described below:

- Version 1.01 of the groundwater availability model for the central portion of the Gulf Coast Aquifer System by Chowdhury and others (2004) was the base model for this analysis. See Chowdhury and others (2004) for assumptions and limitations of the historical calibrated model. Keester and others (2021) constructed a predictive

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model simulation to extend the base model to 2080 for planning purposes. See Keester and others (2021) for assumptions of the predictive model simulation.

- The model has four layers representing the Chicot aquifer (Layer 1), the Evangeline aquifer (Layer 2), the Burkeville Confining Unit (Layer 3), and the Jasper aquifer and parts of the Catahoula Formation in direct hydrologic communication with the Jasper aquifer (Layer 4). Figures 3 to 6 show the extent of these active model layers within GMA 15.
- Pumping was not modeled in the Burkeville Confining Unit within Colorado, Matagorda, and Wharton counties and as such, this layer is excluded from the modeled available groundwater calculation in these counties.
- Pumping was not modeled in the Jasper aquifer within Matagorda and Wharton counties and as such this layer is excluded from the modeled available groundwater calculations in these counties.
- The model was run with MODFLOW-96 (Harbaugh and McDonald, 1996).
- Pumping volumes are reduced to zero if a cell becomes dry during the predictive model run. For this reason, the modeled available groundwater values from the ZONEBUDGET output may not match the pumping values in the input well file.
- Drawdown averages and modeled available groundwater volumes were calculated based on the extent of the official TWDB aquifer boundary. The most recent TWDB model grid file dated June 26, 2020 (glfc_c_grid_poly062620.csv) was used to determine model cell entity assignment (county, groundwater management area, groundwater conservation district, river basin, regional water planning area).
- Drawdowns for cells that became dry during the simulation were excluded from the drawdown averages. Pumping in dry cells was excluded from the modeled available groundwater calculations.
- To be consistent with Groundwater Management Area 15's assumptions (see Keester and others, 2021), a tolerance of three feet was assumed when comparing desired future conditions to modeled drawdown results for all counties except Goliad County. Goliad County was given a tolerance of ± 17 feet for the Chicot aquifer, ± 36 feet for the Evangeline aquifer, ± 14 feet for the Burkeville Confining Unit, and ± 7 feet for the Jasper aquifer. Goliad County Groundwater Conservation District plans to monitor achievement of their desired future conditions within these tolerances because they rely more heavily on their extensive monitoring program rather than modeled results.

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- Estimates of modeled drawdown and available groundwater from the model simulation were rounded to whole numbers.

RESULTS:

The modeled available groundwater values for the Gulf Coast Aquifer System that achieve the desired future conditions adopted by Groundwater Management Area 15 fluctuate over time, ranging from 529,006 acre-feet per year in 2030 to 522,307 acre-feet per year in 2040. The modeled available groundwater values are summarized by groundwater conservation district and county in Table 2. Table 3 summarizes the modeled available groundwater values by county, river basin, and regional water planning area for use in the regional water planning process.

The Carrizo-Wilcox, Queen City, Sparta, and Yegua-Jackson aquifers were declared not relevant for the purpose of joint planning by Groundwater Management Area 15; therefore, modeled available groundwater values were not calculated for those aquifers.

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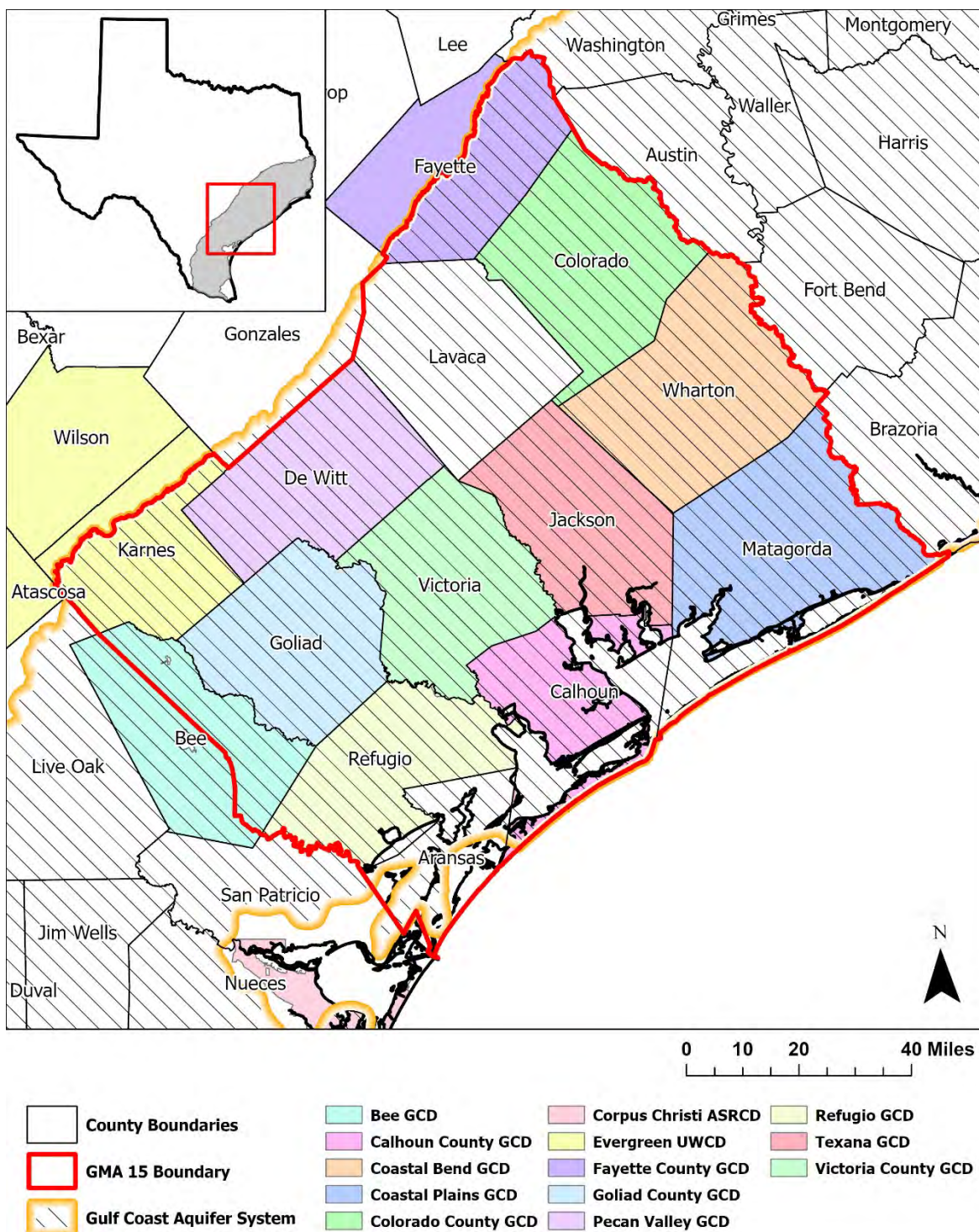


FIGURE 1. MAP SHOWING GROUNDWATER MANAGEMENT AREA (GMA) 15, GROUNDWATER CONSERVATION DISTRICTS (GCD), COUNTIES, AND THE EXTENT OF ACTIVE MODEL CELLS. (UWCD = UNDERGROUND WATER CONSERVATION DISTRICT)

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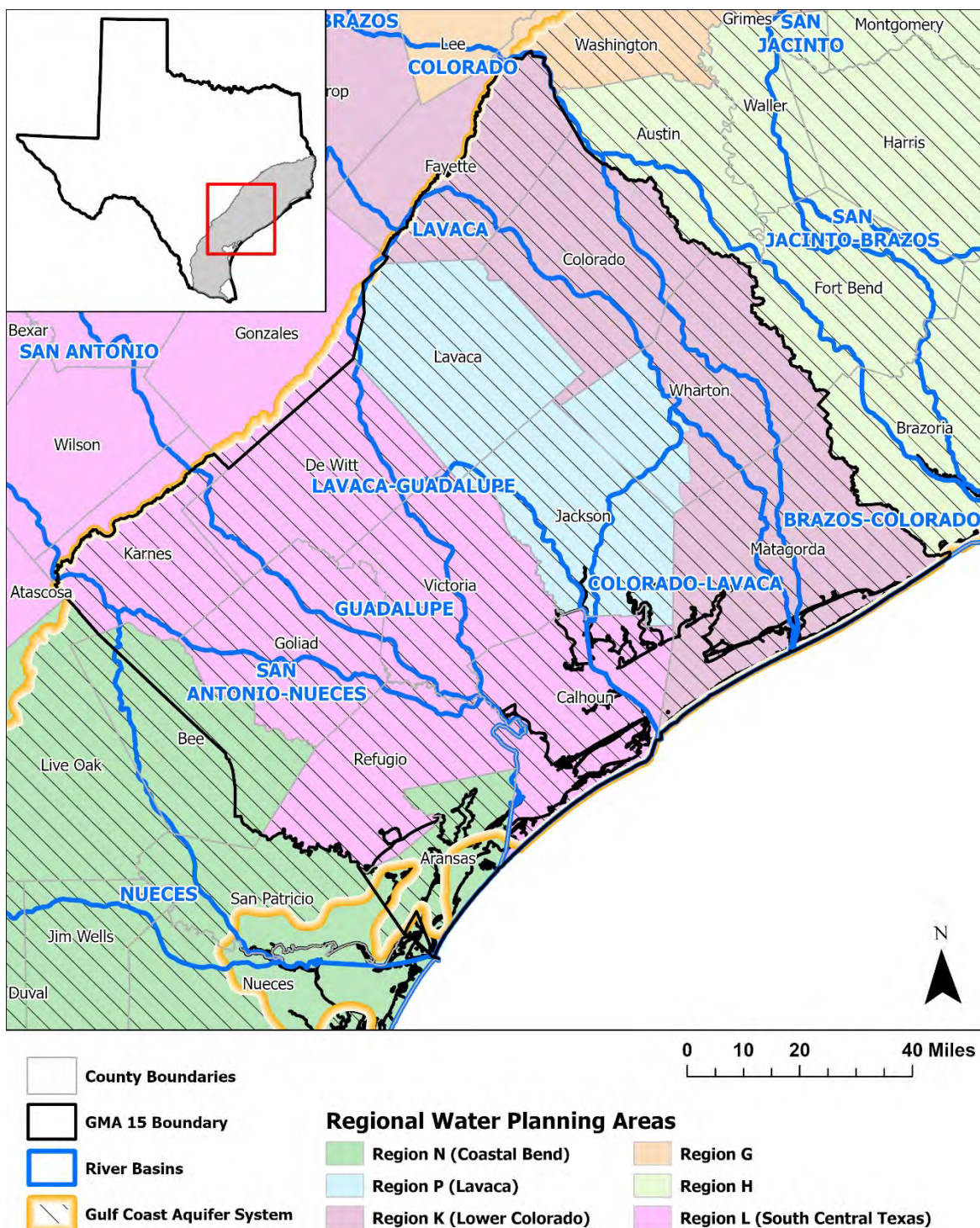


FIGURE 2. MAP SHOWING GROUNDWATER MANAGEMENT AREA (GMA) 15, REGIONAL WATER PLANNING AREAS, RIVER BASINS, COUNTIES, AND EXTENT OF ACTIVE MODEL CELLS.

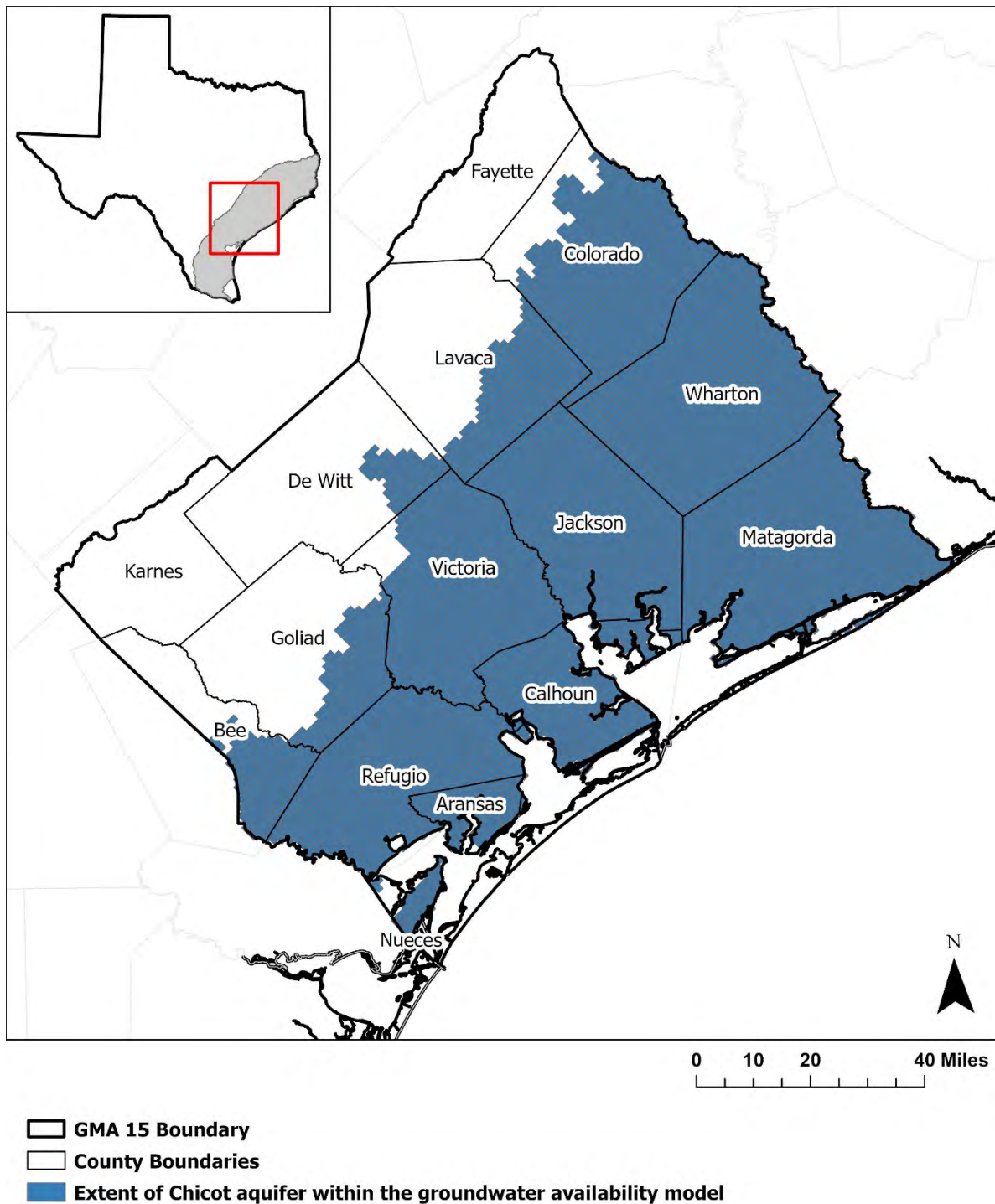


FIGURE 3. MAP SHOWING THE ACTIVE MODEL CELLS WITHIN GROUNDWATER MANAGEMENT AREA (GMA) 15 REPRESENTING THE CHICOT AQUIFER IN LAYER 1 OF THE CENTRAL GULF COAST AQUIFER SYSTEM GROUNDWATER AVAILABILITY MODEL.

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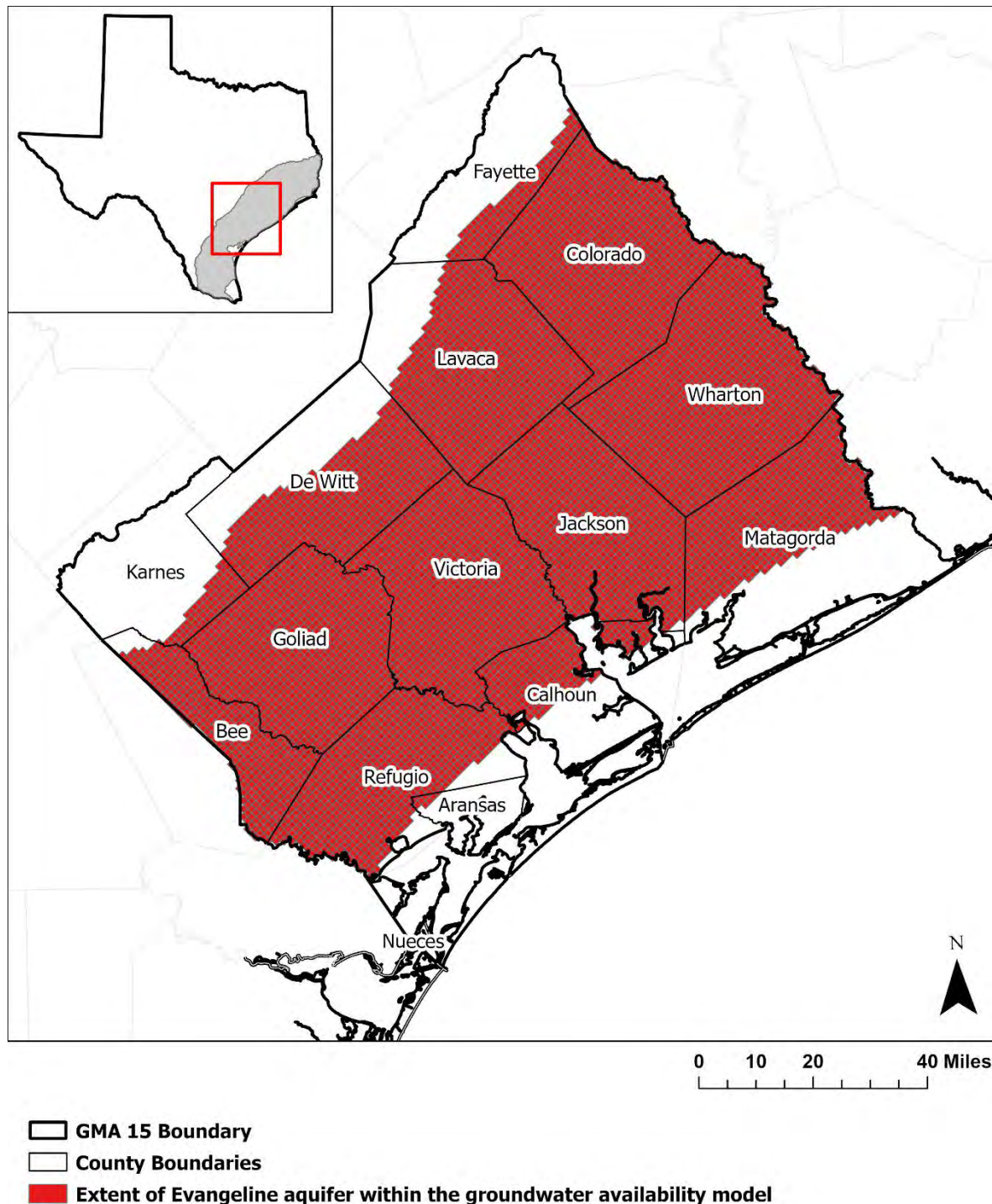


FIGURE 4. MAP SHOWING THE ACTIVE MODEL CELLS WITHIN GROUNDWATER MANAGEMENT AREA (GMA) 15 REPRESENTING THE EVANGELINE AQUIFER IN LAYER 2 OF THE CENTRAL GULF COAST AQUIFER SYSTEM GROUNDWATER AVAILABILITY MODEL.

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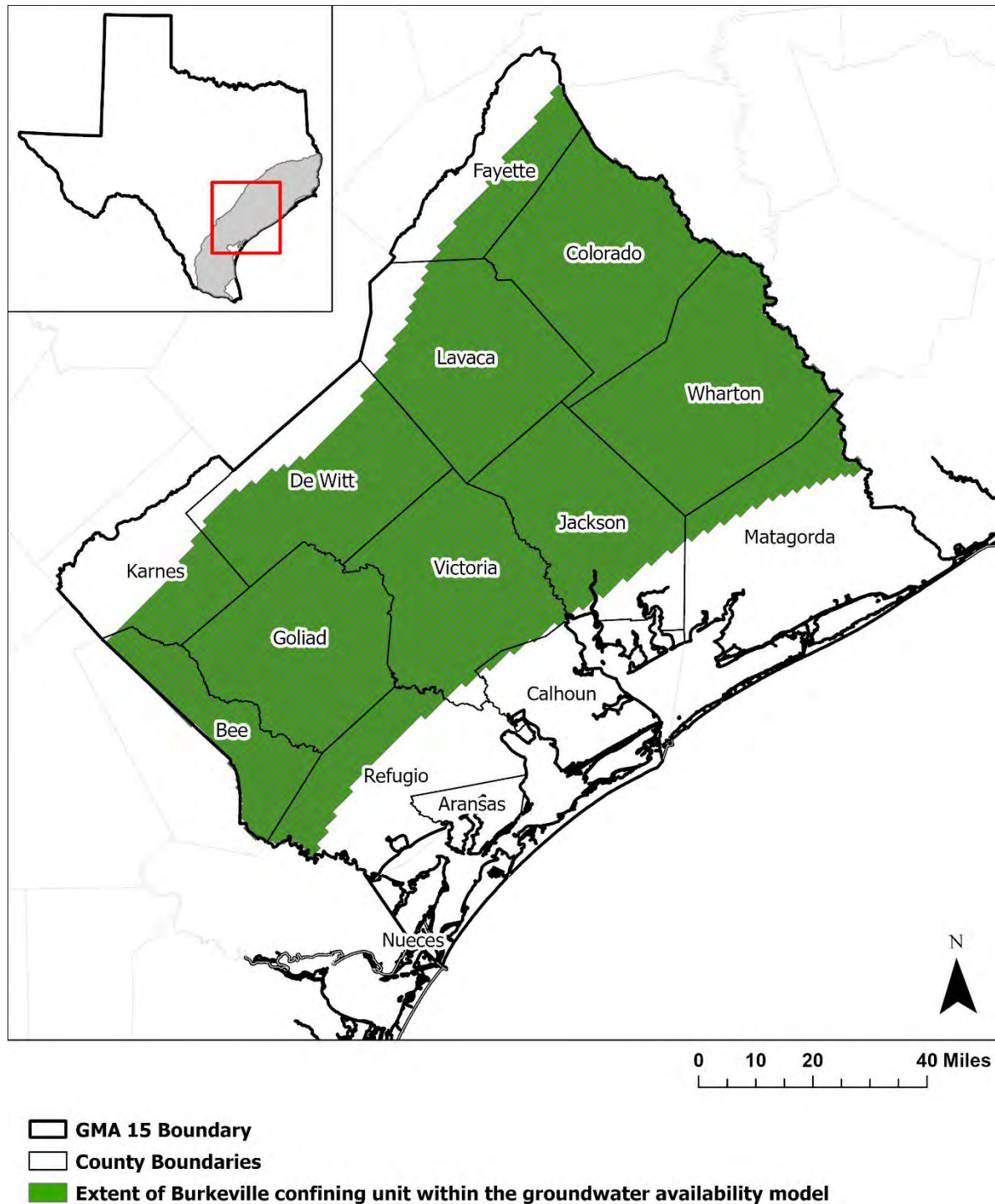


FIGURE 5. MAP SHOWING THE ACTIVE MODEL CELLS WITHIN GROUNDWATER MANAGEMENT AREA (GMA) 15 REPRESENTING THE BURKEVILLE CONFINING UNIT IN LAYER 3 OF THE CENTRAL GULF COAST AQUIFER SYSTEM GROUNDWATER AVAILABILITY MODEL.

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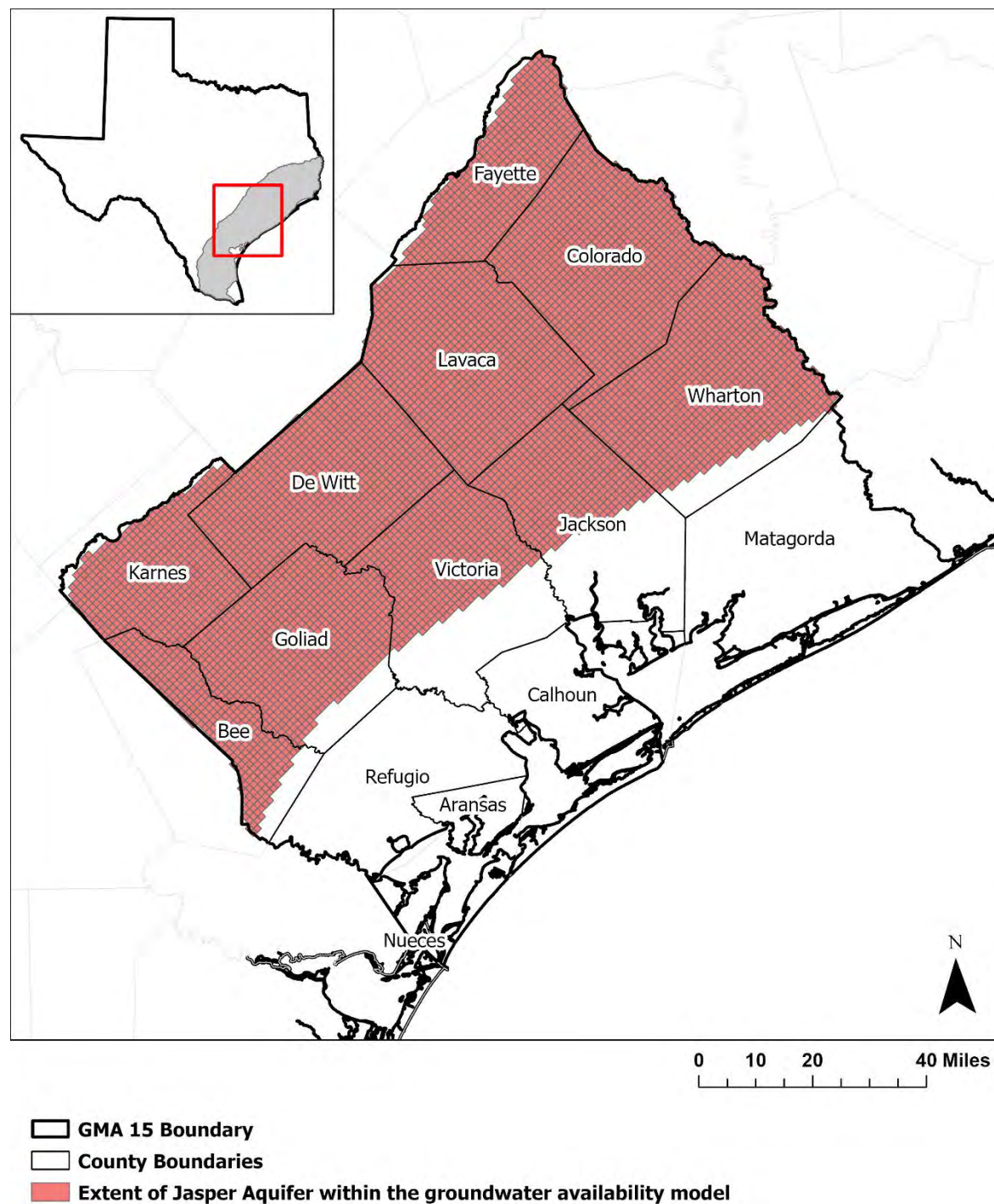


FIGURE 6. MAP SHOWING THE ACTIVE MODEL CELLS WITHIN GROUNDWATER MANAGEMENT AREA (GMA) 15 REPRESENTING THE JASPER AQUIFER AND CATAHOULA FORMATION IN DIRECT HYDROLOGIC CONNECTION WITH THE JASPER AQUIFER IN LAYER 4 OF THE CENTRAL GULF COAST AQUIFER SYSTEM GROUNDWATER AVAILABILITY MODEL.

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TABLE 2. MODELED AVAILABLE GROUNDWATER FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15 SUMMARIZED BY GROUNDWATER CONSERVATION DISTRICT (GCD) AND COUNTY FOR EACH DECADE BETWEEN 2020 AND 2080. VALUES ARE IN ACRE-FEET PER YEAR. (UWCD = UNDERGROUND WATER CONSERVATION DISTRICT; ND = NO DISTRICT))

Groundwater Conservation District	County	Portion of Gulf Coast Aquifer System	2020	2030	2040	2050	2060	2070	2080
Bee GCD	Bee	Total	8,017	8,018	8,020	8,000	8,002	8,003	7,989
Calhoun County GCD	Calhoun	Total	7,611	7,611	7,611	7,611	7,611	7,611	7,611
Coastal Bend GCD	Wharton	Chicot and Evangeline	181,446	181,446	181,446	181,446	181,446	181,446	181,446
Coastal Plains GCD	Matagorda	Chicot and Evangeline	38,892	38,892	38,892	38,892	38,892	38,892	38,892
Colorado County GCD	Colorado	Chicot and Evangeline	71,665	71,665	71,665	71,665	71,665	71,665	71,665
	Colorado	Jasper	918	918	918	918	918	918	918
Colorado County GCD Total	Colorado	Total	72,583	72,583	72,583	72,583	72,583	72,583	72,583
Evergreen UWCD	Karnes	Total	10,694	10,525	3,404	3,399	3,227	2,952	2,949
Fayette County GCD	Fayette	Total	7,168	7,394	7,683	8,011	8,387	8,660	8,590
Goliad County GCD	Goliad	Chicot	418	421	426	430	432	436	436
	Goliad	Evangeline	4,983	5,044	5,105	5,165	5,225	5,287	5,287
	Goliad	Burkeville	425	451	478	505	532	559	559
	Goliad	Jasper	250	338	427	515	602	690	690
Goliad County GCD Total	Goliad	Total	6,076	6,254	6,436	6,615	6,791	6,972	6,972
Pecan Valley GCD	DeWitt	Total	17,993	17,958	17,912	17,827	17,806	17,784	17,772
Refugio GCD	Refugio	Total	5,858	5,858	5,858	5,858	5,858	5,858	5,858
Texana GCD	Jackson	Total	90,571	90,571	90,571	90,571	90,571	90,571	90,571
Victoria County GCD	Victoria	Total	59,948	59,948	59,948	59,948	59,948	59,948	59,948
Total (GCDs)		Total	506,857	507,058	500,364	500,761	501,122	501,280	501,181

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TABLE 2. CONTINUED: MODELED AVAILABLE GROUNDWATER FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15 SUMMARIZED BY GROUNDWATER CONSERVATION DISTRICT (GCD) AND COUNTY FOR EACH DECADE BETWEEN 2020 AND 2080. VALUES ARE IN ACRE-FEET PER YEAR. (UWCD = UNDERGROUND WATER CONSERVATION DISTRICT; ND = NO DISTRICT))

Groundwater Conservation District	County	Portion of Gulf Coast Aquifer System	2020	2030	2040	2050	2060	2070	2080
ND Aransas	Aransas	Total	1,547	1,547	1,547	1,547	1,547	1,547	1,547
ND Bee	Bee	Total	9	9	9	9	9	9	9
ND Lavaca	Lavaca	Total	20,384	20,384	20,379	20,379	20,372	20,368	20,350
ND Refugio	Refugio	Total	8	8	8	8	8	8	8
No District-County Total		Total	21,948	21,948	21,943	21,943	21,936	21,932	21,914
GMA 15 Total		Total	528,805	529,006	522,307	522,704	523,058	523,212	523,095

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TABLE 3. MODELED AVAILABLE GROUNDWATER FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15. RESULTS ARE SUMMARIZED BY COUNTY, REGIONAL WATER PLANNING AREA (RWPA), AND RIVER BASIN FOR EACH DECADE FROM 2030 TO 2080. VALUES ARE IN ACRE-FEET PER YEAR.

County	RWPA	River Basin	Portion of Gulf Coast Aquifer System	2030	2040	2050	2060	2070	2080
Aransas	N	San Antonio-Nueces	Total	1,547	1,547	1,547	1,547	1,547	1,547
Bee	N	Nueces	Total	26	26	26	26	26	26
	N	San Antonio-Nueces	Total	8,001	8,003	7,983	7,985	7,986	7,972
Calhoun	L	Colorado-Lavaca	Total	5,221	5,221	5,221	5,221	5,221	5,221
	L	Guadalupe	Total	18	18	18	18	18	18
	L	Lavaca-Guadalupe	Total	2,365	2,365	2,365	2,365	2,365	2,365
	L	San Antonio-Nueces	Total	7	7	7	7	7	7
Colorado	K	Brazos-Colorado	Chicot and Evangeline	15,352	15,352	15,352	15,352	15,352	15,352
	K	Colorado	Chicot and Evangeline	20,079	20,079	20,079	20,079	20,079	20,079
	K	Lavaca	Chicot and Evangeline	36,234	36,234	36,234	36,234	36,234	36,234
	K	Brazos-Colorado	Jasper	49	49	49	49	49	49
	K	Colorado	Jasper	273	273	273	273	273	273
	K	Lavaca	Jasper	596	596	596	596	596	596
DeWitt	L	Guadalupe	Total	14,055	14,042	13,966	13,946	13,927	13,917
	L	Lavaca	Total	2,638	2,626	2,620	2,620	2,620	2,620
	L	Lavaca-Guadalupe	Total	298	298	298	298	298	298
	L	San Antonio	Total	967	946	943	942	939	937
Fayette	K	Brazos	Total	19	21	22	24	26	26
	K	Colorado	Total	4,894	5,041	5,196	5,370	5,406	5,392
	K	Lavaca	Total	2,481	2,621	2,793	2,993	3,228	3,172

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TABLE 3. CONTINUED: MODELED AVAILABLE GROUNDWATER FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15. RESULTS ARE SUMMARIZED BY COUNTY, REGIONAL WATER PLANNING AREA (RWPA), AND RIVER BASIN FOR EACH DECADE FROM 2030 TO 2080. VALUES ARE IN ACRE-FEET PER YEAR.

County	RWPA	River Basin	Portion of Gulf Coast Aquifer System	2030	2040	2050	2060	2070	2080
Goliad	L	Guadalupe	Chicot	10	11	11	11	11	11
	L	San Antonio	Chicot	136	137	139	140	141	141
	L	San Antonio-Nueces	Chicot	275	278	280	281	284	284
	L	Guadalupe	Evangeline	2,056	2,081	2,105	2,129	2,155	2,155
	L	San Antonio	Evangeline	2,660	2,692	2,724	2,755	2,788	2,788
	L	San Antonio-Nueces	Evangeline	328	332	336	341	344	344
	L	Guadalupe	Burkeville	0	0	0	0	0	0
	L	San Antonio	Burkeville	451	478	505	532	559	559
	L	San Antonio-Nueces	Burkeville	0	0	0	0	0	0
	L	Guadalupe	Jasper	0	1	1	1	1	1
	L	San Antonio	Jasper	338	426	514	601	689	689
	L	San Antonio-Nueces	Jasper	0	0	0	0	0	0
Jackson	P	Colorado-Lavaca	Total	28,157	28,157	28,157	28,157	28,157	28,157
	P	Lavaca	Total	49,484	49,484	49,484	49,484	49,484	49,484
	P	Lavaca-Guadalupe	Total	12,930	12,930	12,930	12,930	12,930	12,930
Karnes	L	Guadalupe	Total	18	18	18	18	18	18
	L	Nueces	Total	1,059	79	79	79	79	79
	L	San Antonio	Total	9,362	3,221	3,217	3,050	2,781	2,780
	L	San Antonio-Nueces	Total	86	86	85	80	74	72
Lavaca	P	Guadalupe	Total	41	41	41	41	41	41
	P	Lavaca	Total	19,942	19,937	19,937	19,930	19,926	19,908
	P	Lavaca-Guadalupe	Total	401	401	401	401	401	401

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TABLE 3. CONTINUED: MODELED AVAILABLE GROUNDWATER FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15. RESULTS ARE SUMMARIZED BY COUNTY, REGIONAL WATER PLANNING AREA (RWPA), AND RIVER BASIN FOR EACH DECADE FROM 2030 TO 2080. VALUES ARE IN ACRE-FEET PER YEAR.

County	RWPA	River Basin	Portion of Gulf Coast Aquifer System	2030	2040	2050	2060	2070	2080
Matagorda	K	Brazos-Colorado	Chicot and Evangeline	15,321	15,321	15,321	15,321	15,321	15,321
	K	Colorado	Chicot and Evangeline	3,219	3,219	3,219	3,219	3,219	3,219
	K	Colorado-Lavaca	Chicot and Evangeline	20,352	20,352	20,352	20,352	20,352	20,352
Refugio	L	San Antonio	Total	329	329	329	329	329	329
	L	San Antonio-Nueces	Total	5,537	5,537	5,537	5,537	5,537	5,537
Victoria	L	Guadalupe	Total	27,611	27,611	27,611	27,611	27,611	27,611
	L	Lavaca	Total	234	234	234	234	234	234
	L	Lavaca-Guadalupe	Total	30,421	30,421	30,421	30,421	30,421	30,421
	L	San Antonio	Total	1,682	1,682	1,682	1,682	1,682	1,682
Wharton	K	Brazos-Colorado	Chicot and Evangeline	50,560	50,560	50,560	50,560	50,560	50,560
	K	Colorado	Chicot and Evangeline	35,934	35,934	35,934	35,934	35,934	35,934
	K	Colorado-Lavaca	Chicot and Evangeline	16,207	16,207	16,207	16,207	16,207	16,207
	K	Lavaca	Chicot and Evangeline	579	579	579	579	579	579
	P	Colorado	Chicot and Evangeline	874	874	874	874	874	874
	P	Colorado-Lavaca	Chicot and Evangeline	14,100	14,100	14,100	14,100	14,100	14,100
	P	Lavaca	Chicot and Evangeline	63,193	63,193	63,193	63,193	63,193	63,193
GMA 15 Total				529,007	522,308	522,705	523,059	523,213	523,096

LIMITATIONS:

The groundwater model used in completing this analysis is the best available scientific tool that can be used to meet the stated objectives. To the extent that this analysis will be used for planning purposes and/or regulatory purposes related to pumping in the past and into the future, it is important to recognize the assumptions and limitations associated with the use of the results. In reviewing the use of models in environmental regulatory decision making, the National Research Council (2007) noted:

“Models will always be constrained by computational limitations, assumptions, and knowledge gaps. They can best be viewed as tools to help inform decisions rather than as machines to generate truth or make decisions. Scientific advances will never make it possible to build a perfect model that accounts for every aspect of reality or to prove that a given model is correct in all respects for a particular regulatory application. These characteristics make evaluation of a regulatory model more complex than solely a comparison of measurement data with model results.”

A key aspect of using the groundwater model to evaluate historic groundwater flow conditions includes the assumptions about the location in the aquifer where historic pumping was placed. Understanding the amount and location of historic pumping is as important as evaluating the volume of groundwater flow into and out of the district, between aquifers within the district (as applicable), interactions with surface water (as applicable), recharge to the aquifer system (as applicable), and other metrics that describe the impacts of that pumping. In addition, assumptions regarding precipitation, recharge, and streamflow are specific to a particular historic time period.

Because the application of the groundwater model was designed to address regional scale questions, the results are most effective on a regional scale. The TWDB makes no warranties or representations relating to the actual conditions of any aquifer at a particular location or at a particular time.

It is important for groundwater conservation districts to monitor groundwater pumping and groundwater levels in the aquifer. Because of the limitations of the groundwater model and the assumptions in this analysis, it is important that the groundwater conservation districts work with the TWDB to refine this analysis in the future given the reality of how the aquifer responds to the actual amount and location of pumping now and in the future. Historic precipitation patterns also need to be placed in context as future climatic conditions, such as dry and wet year precipitation patterns, may differ and affect groundwater flow conditions.

REFERENCES:

- Chowdhury, Ali. H., Wade, S., Mace, R.E., and Ridgeway, C., 2004, Groundwater Availability Model of the Central Gulf Coast Aquifer System: Numerical Simulations through 1999- Model Report, 114 p., <http://www.twdb.texas.gov/groundwater/models/gam/glfc c/TWDB Recalibration Report.pdf>.
- Harbaugh, A. W., 2009, Zonebudget Version 3.01, A computer program for computing sub-regional water budgets for MODFLOW ground-water flow models, U.S. Geological Survey Groundwater Software.
- Harbaugh, A. W., and McDonald, M. G., 1996, User's documentation for MODFLOW-96, an update to the U.S. Geological Survey modular finite-difference groundwater-water flow model: U.S. Geological Survey Open-File Report 96-485, 56 p.
- Keester, M., Danielson, V., Donnelly, A., 2021, GMA 15 2021 Joint Planning Desired Future Conditions Explanatory Report, 1047 p.
- National Research Council, 2007, Models in Environmental Regulatory Decision Making Committee on Models in the Regulatory Decision Process, National Academies Press, Washington D.C., 287 p., http://www.nap.edu/catalog.php?record_id=11972.
- Texas Water Code, 2011, <http://www.statutes.legis.state.tx.us/docs/WA/pdf/WA.36.pdf>.
- Wade, S., 2010, GAM Run 10-008 Addendum: Texas Water Development Board, 8 p., <https://www.twdb.texas.gov/groundwater/docs/GAMruns/GR10-08addendum.pdf>

Appendix D. Public Notices Regarding Hearing Related to Plan Adoption

PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT
NOTICE OF HEARING ON DISTRICT MANAGEMENT PLAN
DECEMBER 14, 2023

NOTICE IS HEREBY GIVEN to all interested persons in DeWitt County, Texas:

That the Board of Directors of the Pecan Valley Groundwater Conservation District ("District") will hold a public hearing to discuss, consider, receive public comments, and act upon adoption of amendments to the District's Management Plan.

The hearing will be held on Thursday, December 14, 2023, at 10:00 a.m. at the District's office located at 1009 N. Esplanade St., Cuero, Texas 77954. Comments on the Management Plan may be presented in written or verbal form at the hearing, and persons interested in submitting written comments in advance may do so by sending comments to the District at 1009 N. Esplanade St., Cuero, Texas 77954. Any person who desires to appear at the hearing and present comments may do so in person, by legal representative, or both. The hearing posted in this notice may be recessed from day to day or continued where appropriate. At the conclusion of this hearing or any time or date thereafter, the Management Plan may be adopted in the form presented or as amended based upon comments received from the public, Texas Water Development Board, District staff, consultants, or the Board of Directors without any additional notice or hearing.

A copy of the Management Plan is available by requesting a copy by email to director@pvgcd.org, by accessing the District's website at www.pvgcd.org, or by reviewing or obtaining a copy of the Management Plan in person at 1009 N. Esplanade St., Cuero, Texas 77954. The District is committed to compliance with the Americans with Disabilities Act (ADA). Any person who needs special accommodations should contact District staff at (361) 275-8188 at least 24 hours in advance if accommodation is needed. Any person who wishes to receive more detailed information on this notice should contact District staff at (361) 275-8188.

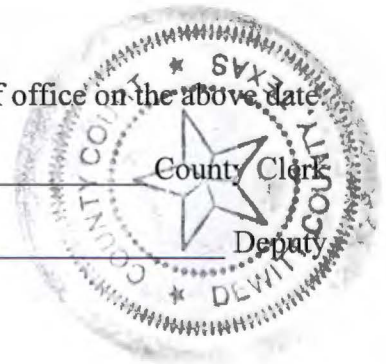
Certificate of Posting

The above Notice of Hearing was posted at 10:30 A.M. on Thursday, November 16, 2023 at a place convenient to the public on a bulletin board in the DeWitt County Courthouse at Cuero, Texas.

WITNESS MY HAND AND SEAL of office on the above date

Natalie Carson

By Blanca Reyes



AFFIDAVIT OF PUBLICATION

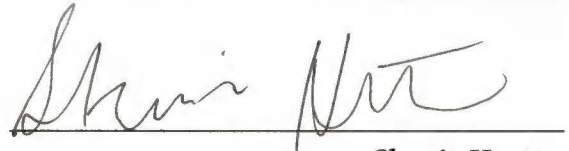
THE STATE OF TEXAS
COUNTY OF DE WITT

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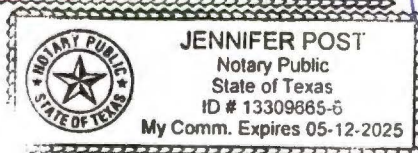
BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared **Shania Horton**, who after being by me duly sworn, upon oath says that he/she is a representative of **The Cuero Record**, a newspaper in general circulation in DeWitt County, Texas which newspaper satisfies each of the requirements of Subchapter C, Chapter 2051, as amended, Texas Government Code, so as to constitute an official publication in which legal notices may be published as set forth in said newspaper.

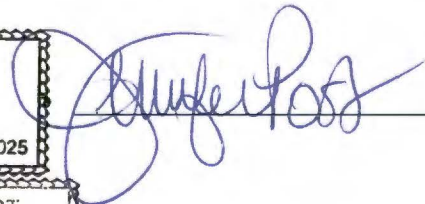
Publisher further deposes and says that the attached notice was published in said newspaper on the following date(s) to wit: Nov 22

Pecan Valley Groundwater Conservation District Notice
of Hearing on District Management Plan


Shania Horton
Advertising Director

SUBSCRIBED AND SWORN TO before me, the undersigned authority, on the 21 day of November, 2023, to verify which witness my hand and seal of office.





Notary Public
State of Texas

DeWitt County Marketplace

The Classified Pages that serve all of DeWitt County, including Cuero, Yorktown, Meyersville, Nordheim & Westhoff.

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5:00 P.M.

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ANNOUNCEMENTS

Public Notices

To satisfy a contractual Landlords Lien on delinquent rental units, contents of the units listed below will be sold to the highest bidder on the 25th day of November 2023 at 10:00 AM at Jewel Box Storage, located at 104 E. Park and McLeod Streets, Cuero, TX. Unit 8 Kaycee Perez, Unit 61 Amber Garza, Unit 44 Kristin Morris. General Contents: Household items, furniture and appliances. Contents may be reclaimed by paying entire amount due prior

to the time of sale. Each unit bid on will have a reserve (minimum bid). Seller reserves the right to withdraw property at anytime from the sale.

Services

Garden of Eden Exotic Nursery and Landscaping 40 years experience appointment only - Smiley, Flower bed design, weed trim, etc. No mowing. 979-299-4331.



REAL ESTATE

Homes For Rent

310 W. Broadway-3/1 home, \$1200.00 per month plus deposit. No smoking. Call RBC Property Management (361) 275-4766.

House For Rent

505 West Thomas, 4 bed 3 bath. Call or Text Dustin at (361) 243-6863.



ITEMS FOR SALE

Pets & Supplies

Young Jumbo Guinea \$10. SR resell/appl geese for sale \$50. (979)-299-4331.



CUERO POLICE DEPARTMENT NOTICE TO OWNERS AND LIENHOLDERS

The following vehicle are considered abandoned under section 683.002 Texas Transportation Code and being stored at the Cuero Police Department Impound Facility located at 514 W. Sarah St., Cuero, Texas. Persons having interests in said vehicles must claim the vehicle no later than the 30th day after the date of this notice upon proper payment of towing, preservation and storage fees. Failure to claim the vehicle during the period specified is a waiver by the owner of all rights, title and interest in said vehicle and constitutes a consent to sale the vehicle at a public auction in accordance with section 643.014, Texas Transportation Code.

VIN: JT1FF22P61C425767
2001 TOYOTA

NOTICE TO CREDITORS

Notice is hereby given that original Letters Testamentary for the Estate of RAY LUCILLE PAVLENKA, Deceased, were issued on October 10, 2023, in Cause No. PR2023-12410, pending in the County Court of DeWitt County, Texas, to: RAY LUCILLE PAVLENKA.

All persons having claims against this Estate which is currently being administered are required to present them to the undersigned within the time and in the manner prescribed by law.

RAY LUCILLE PAVLENKA
c/o Patricia L. Burns
Attorney at Law
1408 N. Sarah DeWitt Drive
Cuero, Texas 77954

DATED the 15 day of November, 2023.

Patricia L. Burns
PATRICIA L. BURNS
Attorney for RAY LUCILLE PAVLENKA
State Bar No.: 63445900
P.O. Box #77
Cuero, TX 77954
Telephone: (361) 275-8311
Facsimile: (361) 275-7638
E-mail: pburns@burnslaw.com

NOTICE TO CREDITORS

Notice is hereby given that original Letters of Testamentary for the Estate of Douglas Lemke, Deceased, were issued on October 9, 2023, in Cause No. PR2023-12349 pending in the County Court of DeWitt County, Texas, to:

Doris Lemke, Independent Executor.
Estate of Douglas Lemke
C/O The Law Office of Brian Michael Cronmeyer
119 N. Epitaph Street
Cuero, Texas 77954

All persons having claims against this Estate which is currently being administered are required to present them to the undersigned within the time and in the manner prescribed by law.

DATED the 2 day of November, 2023.

Brian Michael Cronmeyer
BRIAN MICHAEL CRONMEYER
Attorney for Doris Lemke
State Bar No.: 24080684
119 N. Epitaph Street
Cuero, TX 77954
Telephone: (361) 275-8502
Facsimile: (361) 275-8525
E-mail: bcronmeyerlaw@gmail.com



The City of Yorktown is currently seeking a Streets/Parks Maintenance Worker

The ideal candidate will be required to perform duties under the supervision of the Public Works Director. The job requires manual labor tasks in and around the city, including but not limited to digging trenches and sweeping debris from the streets. The worker is exposed to and must be able to work in adverse environmental conditions such as dirt, dust, rain, strong odors, exposure to dust or pollen, and heat, cold, or extreme weather conditions. Weekend work and occasional reassignment to other departments or crews are occasionally required.

Qualification requirements include, but are not limited to documentation of High School Diploma or GED and a valid driver's license with acceptable driving record.

Successfully complete various background checks, pre-employment medical/physical test(s) and driver's license check.

The salary for the Streets/Parks Maintenance Worker will be based upon experience and qualifications. This is a part-time position. If you have an interest in the opportunity, please contact:

Email: Michele Warrens City Administrator at mwarrens@yorktowntx.gov

PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT NOTICE OF HEARING ON DISTRICT MANAGEMENT PLAN DECEMBER 14, 2023

NOTICE IS HEREBY GIVEN to all interested persons in DeWitt County, Texas:

That the Board of Directors of the Pecan Valley Groundwater Conservation District ("District") will hold a public hearing to discuss, consider, receive public comments, and act upon adoption of amendments to the District's Management Plan.

The hearing will be held on Thursday, December 14, 2023, at 10:00 a.m. at the District's office located at 1009 N. Epitaph St., Cuero, Texas 77954. Comments on the Management Plan may be presented in written or verbal form at the hearing, and persons interested in submitting written comments in advance may do so by sending comments to the District at 1009 N. Epitaph St., Cuero, Texas 77954. Any person who desires to appear at the hearing and present comments may do so in person, by legal representative, or both. The hearing posted in this notice may be rescheduled from day to day or continued where appropriate. At the conclusion of this hearing or any time or date thereafter, the Management Plan may be adopted in the form presented or as amended based upon comments received from the public. Texas Water Development Board, District staff, consultants, or the Board of Directors will not give any additional notice or hearing.

A copy of the Management Plan is available by requesting a copy by email to director@pvgsd.org, by accessing the District's website at www.pvgsd.org or by reviewing or obtaining a copy of the Management Plan in person at 1009 N. Epitaph St., Cuero, Texas 77954. The District is committed to compliance with the Americans with Disabilities Act (ADA). Any person who needs special accommodations should contact District staff at (361) 275-8188 at least 24 hours in advance if accommodation is needed. Any person who wishes to receive more detailed information on this notice should contact District staff at (361) 275-8188.

NOTICE OF REQUESTS FOR PROPOSALS FROM SUBCONTRACTORS AND SUPPLIERS

Weaver & Jacobs Constructors, Inc., the Construction Manager-At-Risk, will accept proposals from subcontractors and suppliers for the Yorktown ISD CTE Pre-Engineered Metal Building Package located in Yorktown, Texas, until 2:00 pm on Tuesday, December 5, 2023. This will be phase 1 of 2 bid phases for this project.

Bids should be submitted to:

Brenden Morris
Weaver & Jacobs Constructors, Inc.
301 Cooperative Way
Cuero, Texas 77954
Ph. 361-277-9300
Fax 361-277-9274
Email bmorris@weaverandjacobs.com

Interested bidders may obtain bidding documents by contacting the Construction Manager for instructions. No paper plans are being issued. In accordance with the Government Code Chapter 2267, in determining to whom to award a contract, the Construction Manager may consider any relevant factor a private business entity would consider in selecting a vendor. The Construction Manager reserves the right to reject any or all proposals, to waive any informalities in the proposal process, and to accept the proposal which it considers to offer the best value to the Owner.

We Appreciate You!

of sale.
bid on
reserve
(n bid).
erves the
thdraw
anytime
sale.

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of Eden
sery and
ing 40
erience
nt only -
ower bed
ed trim,
nning.
-4331.



REAL ESTATE

Homes For Rent

310 W. Broad-
way- 3/1 home,
\$1200.00 per
month plus deposit.
No smoking. Call
RBC Property
Management (361)
275-4766.

House For Rent.

505 West Thomas,
4 bed 3 bath. Call
or Text Dustin at
(361) 243-6583.



ITEMS FOR SALE

Pets & Supplies

Young Jumbo
Guineas \$10. SR
sebastapol geese
for sale \$50. (979)-
299-4331.



The City of Yorktown is currently seeking a Streets/Parks Maintenance Worker

The ideal candidate will be required to perform duties under the supervision of the Public Works Director. The job requires manual labor tasks in and around the city, including but not limited to digging trenches and sweeping debris from the streets. The Worker is exposed to and must be able to work in adverse environmental conditions such as dirt, dust, rain, strong odors, exposure to dust or pollen, and heat, cold, or extreme weather conditions. Weekend work and occasional reassignment to other departments or crews are occasionally required.

Qualification requirements include, but are not limited to documentation of High School Diploma or GED and a valid driver's license with acceptable driving record.

Successfully complete various background checks, pre-employment medical/physical test(s) and driver's license check.

The salary for the Streets/Parks Maintenance Worker will be based upon experience and qualifications. This is a part-time position. If you have an interest in the opportunity, please contact:

Email: Michele Warwas City Administrator at mwarwas@yorktowntx.gov

CUERO POLICE DEPARTMENT

OWNERS AND LIENHOLDERS

red abandoned under section 683.002 Texas
tored at the Cuero Police Department Impound Facility
ro, Texas. Persons having interests in said vehicles
an the 30th day after the date of this notice upon
vation and storage fees. Failure to claim the vehicle
aiver by the owner of all rights, title and interest in said
t to sale the vehicle at a public auction in accordance
sportation Code.

PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT

NOTICE OF HEARING ON DISTRICT MANAGEMENT PLAN

DECEMBER 14, 2023

NOTICE IS HEREBY GIVEN to all interested persons in DeWitt County, Texas:

That the Board of Directors of the Pecan Valley Groundwater Conservation District ("District") will hold a public hearing to discuss, consider, receive public comments, and act upon adoption of amendments to the District's Management Plan.

The hearing will be held on Thursday, December 14, 2023, at 10:00 a.m. at the District's office located at 1009 N. Esplanade St., Cuero, Texas 77954. Comments on the Management Plan may be presented in written or verbal form at the hearing, and persons interested in submitting written comments in advance may do so by sending comments to the District at 1009 N. Esplanade St., Cuero, Texas 77954. Any person who desires to appear at the hearing and present comments may do so in person, by legal representative, or both. The hearing posted in this notice may be recessed from day to day or continued where appropriate. At the conclusion of this hearing or any time or date thereafter, the Management Plan may be adopted in the form presented or as amended based upon comments received from the public, Texas Water Development Board, District staff, consultants, or the Board of Directors without any additional notice or hearing.

A copy of the Management Plan is available by requesting a copy by email to director@pvgcd.org, by accessing the District's website at www.pvgcd.org, or by reviewing or obtaining a copy of the Management Plan in person at 1009 N. Esplanade St., Cuero, Texas 77954. The District is committed to compliance with the Americans with Disabilities Act (ADA). Any person who needs special accommodations should contact District staff at (361) 275-8188 at least 24 hours in advance if accommodation is needed. Any person who wishes to receive more detailed information on this notice should contact District staff at (361) 275-8188.

NOTICE TO CREDITORS

original Letters Testamentary for the Estate of AGNES LUCILLE CURL,
2023, in Cause No. PR2023-12410, pending in the County Court of DeWitt
VLISKA.
not this Estate which is currently being administered are required to present
und in the manner prescribed by law.

WEDNESDAY, NOVEMBER 22, 2023

YOAKUM HERALD-TIMES

YOAKUM HERALD-TIMES CLASSIFIEDS

value to the Owner.

**SIGN
UP FOR A
SUBSCRIPTION
TODAY!**

**DEWITT
& LAVACA
COUNTY: \$50**

**STATE OF
TEXAS: \$56**

**OUT OF
STATE: \$62**

**ONLINE
EDITION:
\$40**

**PRINT EDITION:
\$50**

NOTICES

NOTICES

NOTICES

PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT NOTICE OF HEARING ON DISTRICT RULES MANAGEMENT PLAN DECEMBER 14, 2023

NOTICE IS HEREBY GIVEN to all interested persons in DeWitt County, Texas:

That the Board of Directors of the Pecan Valley Groundwater Conservation District ("District") will hold a public hearing to discuss, consider, receive public comments, and act upon adoption of amendments to the District's Management Plan.

The hearing will be held on Thursday, December 14, 2023, at 10:00 a.m. at the District's office located at 1009 N. Esplanade St., Cuero, Texas 77954. Comments on the Management Plan may be presented in written or verbal form at the hearing, and persons interested in submitting written comments in advance may do so by sending comments to the District at 1009 N. Esplanade St., Cuero, Texas 77954. Any person who desires to appear at the hearing and present comments may do so in person, by legal representative, or both. The hearing posted in this notice may be recessed from day to day or continued where appropriate. At the conclusion of this hearing or any time or date thereafter, the Management Plan may be adopted in the form presented or as amended based upon comments received from the public, Texas Water Development Board, District staff, consultants, or the Board of Directors without any additional notice or hearing.

A copy of the Management Plan is available by requesting a copy by email to director@pvgcd.org, by accessing the District's website at www.pvgcd.org, or by reviewing or obtaining a copy of the Management Plan in person at 1009 N. Esplanade St., Cuero, Texas 77954. The District is committed to compliance with the Americans with Disabilities Act (ADA). Any person who needs special accommodations should contact District staff at 361-275-8188 at least 24 hours in advance if accommodation is needed. Any person who wishes to receive more detailed information on this notice should contact District staff at 361-275-8188.

sales St.

j) 2000 Silver Ford EPT,
15L9YLB36721, Exp. D

k) 2001 Silver Nissan M
JN1CA31D71T812007,
Ave.

l) 1993 Silver GMC Van,
25K3PF507100, Exp. D

m) 2000 Red/Tan Saturn
F5285YZ125759, Exp.

n) 2008 Yellow Chevy C
1G1AL18F587237993,

o) 1970 Green Chevy 4
164390S245799, Exp.

p) 1996 Green Nissan 2
24D7TX600115, Exp. D

q) 2006 Black Nissan L
5N1AA08A66N717802,

St.

The property owners are
relevant documentation
sentation. The violations
tural, fire hazard, health
related. For additional in
Enforcement Office.

**E-MA
ADVERT**

YOAKUM@LAVA

**YOAKUM H
DEADLINE M**

LAVACACOUNTYTODAY.COM



NOTICE OF PUBLIC MEETING PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT BOARD OF DIRECTORS

Notice is hereby given in accordance with Texas Open Meetings Act, Chapter 551, Government Code and Section 36.064 of the Texas Water Code that the Pecan Valley Groundwater Conservation District Board of Directors will hold a Meeting on **Thursday, December 14, 2023 at 10:00 a.m.** at the District Office, located at 1009 N. Esplanade Street, Cuero, TX.

Members of the public who wish to attend virtually and listen, observe, or actively participate during this meeting may join this meeting from their computer, tablet or smartphone via this Video Conference Link:

<https://meet.goto.com/504739949>

OR

You may dial in for audio only using your phone:

United States: +1 (872) 240-3412

Access Code: 504-739-949

Public comments will be taken at the beginning of the meeting and only during the public comment section on the agenda as per the recent Attorney General Opinion (KP-0300). The Board of Directors may discuss, consider, and take action, including expenditure of funds, on any item or subject matter posted in this agenda.

Public Hearing to Adopt Management Plan Amendments

Notice is hereby given that the Board of Directors of the Pecan Valley Groundwater Conservation District ("District") will hold a public hearing, accept public comment, and may discuss and consider adoption of the District's Management Plan.

Agenda

1. Call to Order; Roll call to establish quorum, declare hearing open to the public.
2. Pledge of Allegiance.
3. Introduction of Guests and Virtual Visitors/Hearing Participants.
4. Review of Management Plan Amendments.
5. Public Comment on District's Management Plan Amendments.
6. Consider and act upon resolution to adopt the District's Management Plan.
7. Adjourn Public Hearing.

Board Meeting

The Board Meeting will begin upon adjournment of the above-noticed public hearing.

Agenda

1. Public Comment.
2. Approval of Minutes of November 21, 2023 (provided prior to meeting).
3. Financial Report: Board Treasurer has reviewed November 2023 bank statement reconciliations and finds all in order.
4. November 2023 Investment Report (provided prior to meeting).

5. Report on Uncontested Permits.
6. Discussion and possible action on Personnel Policy.
7. General Manager Report. The General Manager will brief the Board on operational and management matters of the District since the last Board meeting, including updates on registration and permitting, Groundwater Management Area matters, work of consultants, the District's database and website, monitoring wells and water levels, conferences, and upcoming events.
8. Adjourn

The Pecan Valley Groundwater Conservation District Board may close the meeting, if necessary, pursuant to Government Code, to conduct private consultation with PVGCD attorney regarding matters protected by the attorney-client privilege (§ 551.071); real property matters (§551.072); deliberation regarding prospective gift (§551.073); personnel matters (§551.074); and/or deliberation regarding security devices or security audits (§551.076). The Pecan Valley Groundwater Conservation District will return to open meeting, if necessary, to take any action deemed necessary based on discussion in closed meeting pursuant to Section 551.102 of the Government Code.

In accordance with Title III of the Americans with Disabilities Act, we invite all attendees to advise us of any special accommodations due to disability. Please submit your request as far as possible in advance of the programs you wish to attend.

Certificate of Posting

The above Notice of Public Hearing and Board Meeting was posted at 10:05 AM on December 8, 2023 at a place convenient to the public on a bulletin board in the DeWitt County Courthouse at Cuero, Texas.

WITNESS MY HAND AND SEAL of office on the above date.

Natalie Carson

By

Brandi Riepes



Posting Sites:
DeWitt County Courthouse
Pecan Valley GCD Office
Website: www.pvgcd.org

Appendix E. Letters Coordinating with Regional Surface Water Management Entities



PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT
1009 N. Esplanade, Cuero, Texas 77954
(361) 275-8188

E-Mail: director@pvgcd.org

Website: www.pvgcd.org

Darnell Knippa
President

Clem Waskow
Vice President

Velinda Geffert
Secretary/Treasurer

Marvin Sager
Director

Tim Pennell
Director

December 20, 2023

Via Certified Mail 7019 0140 0000 1511 7728

Guadalupe Blanco River Authority
933 East Court Street
Seguin, TX 78155

RE: Pecan Valley Groundwater Conservation District Revised Management Plan

On December 14, 2023, the Board of Directors of the Pecan Valley Groundwater Conservation District held the required public hearing at a public meeting to adopt a revised management plan for the district. A copy of the adopted management plan is attached to this letter for your review.

If you have any questions or comments regarding the plan, please contact the District.

Sincerely,

Cindy Parma
General Manager



PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT
1009 N. Esplanade, Cuero, Texas 77954
(361) 275-8188

E-Mail: director@pvgcd.org

Website: www.pvgcd.org

Darnell Knippa
President

Clem Waskow
Vice President

Velinda Geffert
Secretary/Treasurer

Marvin Sager
Director

Tim Pennell
Director

December 20, 2023

Via Certified Mail 7019 0140 0000 1511 7735

South Central Texas Regional Water Planning Group
c/o San Antonio River Authority
100 East Guenther St.
San Antonio, TX 78204

RE: Pecan Valley Groundwater Conservation District Revised Management Plan

On December 14, 2023, the Board of Directors of the Pecan Valley Groundwater Conservation District held the required public hearing at a public meeting to adopt a revised management plan for the district. A copy of the adopted management plan is attached to this letter for your review.

If you have any questions or comments regarding the plan, please contact the District.

Sincerely,

Cindy Parma
General Manager



PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT
1009 N. Esplanade, Cuero, Texas 77954
(361) 275-8188

E-Mail: director@pvgcd.org

Website: www.pvgcd.org

Darnell Knippa
President

Clem Waskow
Vice President

Velinda Geffert
Secretary/Treasurer

Marvin Sager
Director

Tim Pennell
Director

December 20, 2023

Via Certified Mail 7019 0140 0000 1511 7742

Ecletto Creek Watershed District
491 N. Sunset Strip, Suite 103
Kenedy, TX 78119

RE: Pecan Valley Groundwater Conservation District Revised Management Plan

On December 14, 2023, the Board of Directors of the Pecan Valley Groundwater Conservation District held the required public hearing at a public meeting to adopt a revised management plan for the district. A copy of the adopted management plan is attached to this letter for your review.

If you have any questions or comments regarding the plan, please contact the District.

Sincerely,

A handwritten signature in blue ink that reads "Cindy Parma".

Cindy Parma
General Manager



PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT
1009 N. Esplanade, Cuero, Texas 77954
(361) 275-8188

E-Mail: director@pvgcd.org

Website: www.pvgcd.org

Darnell Knippa
President

Clem Waskow
Vice President

Velinda Geffert
Secretary/Treasurer

Marvin Sager
Director

Tim Pennell
Director

December 20, 2023

Via Certified Mail 7019 0140 0000 1511 7759

Green DeWitt Drainage District
P O Box 542
Cuero, TX 77954

RE: Pecan Valley Groundwater Conservation District Revised Management Plan

On December 14, 2023, the Board of Directors of the Pecan Valley Groundwater Conservation District held the required public hearing at a public meeting to adopt a revised management plan for the district. A copy of the adopted management plan is attached to this letter for your review.

If you have any questions or comments regarding the plan, please contact the District.

Sincerely,

A handwritten signature in blue ink that reads "Cindy Parma".

Cindy Parma
General Manager



PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT
1009 N. Esplanade, Cuero, Texas 77954
(361) 275-8188

E-Mail: director@pvgcd.org

Website: www.pvgcd.org

Darnell Knippa
President

Clem Waskow
Vice President

Velinda Geffert
Secretary/Treasurer

Marvin Sager
Director

Tim Pennell
Director

December 20, 2023

Texas Water Development Board
P O Box 13231
Austin, TX 78711-3231

RE: Pecan Valley Groundwater Conservation District Revised Management Plan

On December 14, 2023, the Board of Directors of the Pecan Valley Groundwater Conservation District held the required public hearing at a public meeting to adopt a revised management plan for the district. A copy of the adopted management plan is attached to this letter for your review.

If you have any questions or comments regarding the plan, please contact the District.

Sincerely,

Cindy Parma
General Manager

Appendix F. Pecan Valley Groundwater Conservation District Board of Director
Resolution Adopting Management Plan

RESOLUTION NO. 2023-12-14

A RESOLUTION AND ORDER OF THE BOARD OF DIRECTORS OF THE PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT ADOPTING DISTRICT MANAGEMENT PLAN

WHEREAS, the Pecan Valley Groundwater Conservation District (the “District”) is a political subdivision of the State of Texas organized and existing under and by virtue of Article XVI, Section 59, of the Texas Constitution as a groundwater conservation district, acting pursuant to and in conformity with Chapter 36, Texas Water Code and Act of May 21, 2001, 77th Leg., R.S., ch. 1343 (H.B. No. 3231), 2001 Tex. Gen. Laws 3326 (the “District Act”);

WHEREAS, under the direction of the Board of Directors of the District (the “Board”), and in accordance with Sections 36.1071, 36.1072, and 36.108 of the Texas Water Code, and 31 Texas Administrative Code Chapter 356, the District has undertaken the readoption of its Management Plan;

WHEREAS, Section 36.1085 of the Texas Water Code requires the District to ensure that its Management Plan contains the goals and objectives consistent with achieving the Desired Future Conditions (“DFCs”) adopted through the joint planning process set forth in Chapter 36 of the Texas Water Code;

WHEREAS, Section 36.1072(e) of the Texas Water Code requires the District, after notice and hearing, to readopt its Management Plan at least once every five years;

WHEREAS, the District readopted its Management Plan on January 15, 2019;

WHEREAS, the Board, District staff, and the District consultants have reviewed and analyzed the District’s best available data, groundwater availability modeling information, and other information and data required by the TWDB to readopt the Management Plan with revisions;

WHEREAS, the District issued notice in the manner required by state law and held a public hearing on December 14, 2023, at 10:00 a.m. at the District’s office located at 1009 N. Esplanade St., Cuero, Texas 77954, to receive public and written comments on the revised Management Plan;

WHEREAS, the District coordinated its planning efforts on a regional basis with the appropriate surface water management entities during the preparation of the Management Plan;

WHEREAS, the Board finds that the Management Plan meets all of the requirements of Chapter 36, Texas Water Code, and 31 Texas Administrative Code Chapter 356; and

WHEREAS, after the public hearing, the Board of Directors met in a regular board meeting on December 14, 2023, properly noticed in accordance with state law, and considered adoption of the attached Management Plan and approval of this resolution after due consideration of all comments received.

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE
PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT AS FOLLOWS:**

1. The above recitals are true and correct;
2. The Board of Directors of the District hereby adopts the attached Management Plan as the Management Plan for the District, subject to those amendments necessary based on comments received from the public at the public hearing or Board meeting, recommendations from the District Board, staff, or legal counsel, geoscientist, and/or to incorporate technical information received from the TWDB during TWDB's formal review;
3. The Board President and the General Manager of the District are further authorized to take all steps necessary to implement this resolution and submit the Management Plan to the TWDB for its review and approval; and
4. The Board President and General Manager of the District are further authorized to take any and all action necessary to coordinate with the TWDB as may be required in furtherance of TWDB's approval pursuant to the provisions of Section 36.1072 of the Texas Water Code, and to make any changes to the District's Management Plan pursuant to TWDB's review and resubmit the Management Plan to TWDB for final approval.

AND IT IS SO ORDERED.

PASSED AND ADOPTED by a vote of 5 ayes and 0 nays on this the 14th day of December, 2023.

PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT



Darnell Knippa, President

ATTEST: I, the undersigned, do hereby certify that the above Resolution was adopted by the Board of Directors of the Pecan Valley Groundwater Conservation District on the 14th day of December, 2023.



Velinda Geffert, Secretary

Appendix G. Minutes of Pecan Valley Groundwater Conservation District Board of Director Meeting related to the public hearing for and adoption of the Management Plan

PECAN VALLEY GROUNDWATER CONSERVATION DISTRICT
1009 N. ESPLANADE STREET CUERO, TX 77954
BOARD MEETING MINUTES
DECEMBER 14, 2023 – 10:00 A.M.

Board Members Present: Darnell Knippa, Chairman (Pct. 2), Velinda Geffert, Secretary/Treasurer (Pct. 3), Tim Pennell, Director (Pct. 1), and Marvin Sager, Director (Pct. 4)

Board Member Present Virtually: Clem Waskow, Vice-Chairman (At Large)

Also in attendance: Cindy Parma, General Manager, Carole Moore, Administrative Assistant, Johnny Dietze, Attorney

Public Hearing to Adopt Management Plan Amendments

Public Hearing Opened at 10:00 A.M.

1. Call to Order; Roll call to establish quorum, declare hearing open to the public.: The Public Hearing was called to order with a quorum established by the Chairman.
2. Pledge of Allegiance
3. Introduction of Guests and Virtual Visitors/Hearing Participants.: None
4. Review of Management Plan Amendments: GM Parma reviewed Management Plan Amendments with the Board.
5. Public Comment on District's Management Plan Amendments.: None
6. Consider and act upon resolution to adopt the District's Management Plan Amendments.: A motion to adopt the District's Management Plan as presented was made by Velinda Geffert, seconded by Marvin Sager, which carried unanimously.
7. Adjourn Public Hearing: A motion to adjourn the Public Hearing was made by Tim Pennell, and seconded by Marvin Sager, which carried unanimously.

Public Hearing Closed at 10:12 A.M.

Board Meeting

The Board Meeting will begin upon adjournment of the above-noticed public hearing.

1. Public Comment: None
2. Approval of Minutes of November 21, 2023 (provided prior to meeting).: A motion to approve the minutes of November 21, 2023 as presented was made by Marvin Sager, seconded by Tim Pennell, which carried unanimously.

3. Financial Report: Board Treasurer has reviewed November 2023 Bank Statement reconciliations and finds all in order.: A motion to approve the November Financial Statement was made by Velinda Geffert, seconded by Tim Pennell, which carried unanimously.
4. November 2023 Investment Report (provided prior to meeting).: A motion to accept the November Investment Report was made by Tim Pennell, seconded by Velinda Geffert, which carried unanimously.
5. Report on Uncontested Permits.: General Manager Cindy Parma presented the report. (See attached report.)
6. Discussion and possible action on Personnel Policy.: A motion to accept changes to the Personnel Policy was made by Tim Pennell, seconded by Marvin Sager, which carried unanimously.
7. General Manager Report. The General Manager will brief the Board on operational and management matters of the District since the last Board meeting, including updates on registration and permitting, Groundwater Management Area matters, work of consultants, the District's database and website, monitoring wells and water levels, conferences, and upcoming events.

Closed Meeting: Executive Session was called at 10:46 A.M. by Tim Pennell to discuss matters protected by the personnel matters (§551.074).

Return to Open Meeting: Open Meeting was resumed at 10:50 A.M and a motion to give Cindy Parma and Carole Moore a \$400.00 Christmas bonus was made by Tim Pennell, seconded by Marvin Sager, which carried unanimously.

8. Adjourn.: The meeting adjourned at 10:51 A.M. with a motion by Tim Pennell, seconded by Marvin Sager, which carried unanimously.

Velinda Geffert, Secretary/Treasurer

Recorded: Carole Moore, Administrative Assistant

Appendix H. Pecan Valley Groundwater Conservation District Contact
Information

District Contact Information

Mailing and Physical Address:

1009 N. Esplanade St.
Cuero, TX 77954

Email Address:

director@pvgcd.org

Phone Number:

(361) 275-8188

Board of Directors:

Mr. Darnell Knippa, President
Mr. Clem Waskow, Vice President
Mrs. Velinda Geffert, Secretary/Treasurer
Mr. Marvin Sager, Director
Mr. Tim Pennell, Director

Staff:

Ms. Cindy Parma, General Manager
Ms. Carole Moore, Administrative Assistant