COMAL TRINITY
GROUNDWATER CONSERVATION DISTRICT

GROUNDWATER MANAGEMENT PLAN

Comal Trinity Groundwater Conservation District Management Plan

Adoption and Revision Record

CTGCD Adoption: March 19, 2018
TWDB Approval: April 25, 2018

First Revision
CTGCD Adoption: March 13, 2023
TWDB Approval: May 5, 2023

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DISTRICT MISSION

The Comal Trinity Groundwater Conservation District (CTGCD or district) was created under Chapter 36 of the Texas Water Code for the purpose of conserving, preserving, recharging, protecting, and preventing waste of groundwater from the Trinity Aquifer and its subdivisions within Comal County. The district will conduct administrative and technical activities and programs to achieve these purposes. The district will use the authority granted under its enabling legislation, HB2407, and TWC Chapter 36 and other state laws to conduct aquifer research, monitor water well drilling and production from non-exempt wells, collect and archive well water and aquifer data, issue authorizations for well drilling, modification, equipping, and plugging, promote the capping or plugging of abandoned wells, provide information and educational material to local property owners, interact with other governmental or organizational entities, and incorporate other groundwater-related activities that may help meet the purposes of the district.

PURPOSE OF THE MANAGEMENT PLAN

The district recognizes that groundwater resources throughout this region are of vital importance to all citizens and that these resources must be managed effectively. This plan serves as a guideline for the district to ensure greater understanding of local aquifer conditions, development of groundwater management concepts and strategies, and subsequent implementation of appropriate groundwater management policies.

DISTRICT INFORMATION

Creation

The Texas State Legislature in 1949 authorized the creation of Groundwater Conservation Districts to perform certain prescribed duties, functions, and hold specific powers as set forth in Article 7880-3c, Texas Civil Statutes. The authorization was later moved to Chapter 52 of the Texas Water Code, then to Chapter 36 of the Texas Water Code. The Comal Trinity GCD was created during the 2015 84th Texas Legislature with the enrollment of House Bill 2407 and became effective June 17, 2015. The district is funded primarily by water production fees and to a lesser extent, drilling authorizations. The district finalized and approved non-exempt well registration rules, pump reporting requirements, and a fee schedule for non-exempt water production in December 2015; in 2018 procedural rules, drilling authorization requirements, spacing and construction rules were adopted and took effect January 1, 2019.

Directors

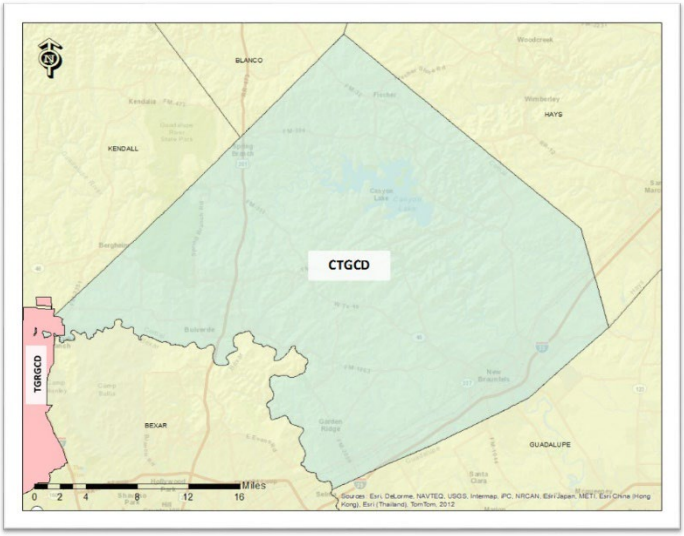
The district is overseen by a 7-member board of directors. Directors are appointed by Comal County Commissioner's Court as follows: Three directors shall be appointed from the incorporated areas of Comal County and four directors shall be appointed with one director appointed from each of the four commissioners court precincts. Directors serve staggered 4-year terms.

Authority

The District, acting under authority of the enabling legislation, HB2407, assumes all the rights and responsibilities of a groundwater conservation district as specified in Chapter 36 of the Texas Water Code.

Location and Extent

The CTGCD comprises the majority of Comal County, excluding a small portion of territory included within the boundaries of the Trinity Glen Rose Groundwater Conservation District. It is important to note that the district has regulatory and management involving the Trinity Aquifer only. Parts of the district contain areas of the Edwards Aquifer but has no regulatory or management involvement with that aquifer. This is important to note because the Texas Water Development Board (TWDB) provides data for the whole of Comal County in the Estimated Historical Groundwater Use and 2022 State Water Plan Datasets: Comal Trinity Groundwater Conservation District, which combines water data estimates with the Edwards Aquifer.



Covering 559 square miles, Comal County resides within two Groundwater Management Areas. The western portion of the county lies within GMA 9 and as such falls within the Hill Country Priority Groundwater Management Area. This designation, originally described by the Texas Water Commission – now referred to as the Texas Commission on Environmental Quality (TCEQ)-- in 1990, is defined as an area experiencing or expected to experience quality or quantity issues within the next 50 years. Western Comal County has historically been rural in make up; however, population growth out of San Antonio to the north has been exceedingly rapid and will accelerate with the current expansion of U.S. Highway 281 from Loop 1604 in San Antonio, Bexar County to Comal County. This rapid population growth in Western Comal County will urbanize this area while the rapid growth in New Braunfels is expected to continue. New Braunfels, the county seat and largest city, with a population of 90,403 (U.S. Census Bureau, 2020),

lies within GMA 10. Per the U.S. Census Bureau, the 2020 population of Comal County was 161,501 (2020).

The most recently approved regional water plan is the 2021 South Central Texas Regional Water Plan which utilizes population projections provided by TWDB to develop water plans to meet future water needs. These population projections for Comal County are summarized below.

Table 1. Population Projections South Central Texas Region, Comal County

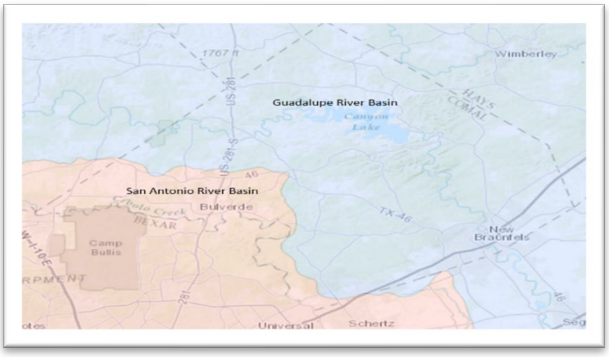
COUNTY	YEAR					
	2020	2030	2040	2050	2060	2070
Comal	152,499	193,188	234,515	276,239	317,682	357,464

Source: 2021 South Central Texas Regional Water Plan Volume I

Topography and Drainage

Comal County lies within the San Antonio River and Guadalupe River basins. The Guadalupe River Basin extends across the northern three-quarters of Comal County with the remaining quarter falling within the San Antonio River Basin. Flowing into Canyon Lake, a Guadalupe-Blanco River Authority (GBRA) managed reservoir and the primary surface water provider for Comal County, the Guadalupe River continues southeast upon exiting the reservoir to New Braunfels and into Guadalupe County. The county contains numerous watersheds including Upper and Lower Blanco River, Cibolo Creek, Comal River, and Upper San Marcos. Surface drainage within the district is generally west to southeast.

DISTRICT RIVER BASINS (Source: TWDB; Groundwater Data Viewer)



The primary geologic features contributing to the topography within the district are the Edwards Plateau and the Balcones Escarpment (Balcones Fault Zone). Below this escarpment the landscape transitions into the Upper Gulf Coastal Plain region.

The Edwards Plateau is characterized as a broad, topographically high area composed of Cretaceous age limestone, dolomite, and marl. Deep erosion and down cutting by streams and rivers in the area have resulted in the Edwards Plateau being perceptibly higher than adjacent areas. The plateau is the southernmost extension of the Great Plains, extending westward from the Colorado River to the Pecos, and covers many Central and West Texas counties. It is bordered on the northeast by the Precambrian rocks of the Llano Uplift. Comal County lies near the southeastern edge of the Edwards Plateau. Elevation within the district ranges from a high of approximately 1,527 feet above sea level at Devil's Hill, seven miles west of Smithson Valley to a low of 600 feet above sea level where the Guadalupe River enters Guadalupe County (George et al. 1952).

STATEMENT OF GUIDING PRICIPLES

The CTGCD was created in order that appropriate groundwater management techniques and strategies could be implemented at the local level to address groundwater issues or concerns within the district. The district will incorporate the best and most current site-specific data available in the development of this plan to ensure the sustainability of the Trinity Aquifer and its subdivisions and achievement of the DFCs.

CRITERIA FOR PLAN APPROVAL

Time Period for this Plan

This plan will remain in effect five years from the date of approval by the TWDB. This plan is being submitted as part of the five-year review and re-adoption process as required by §36.1072(e), Texas Water Code.

Plan Adoption after Notice and Hearing

Copies of documents that record that this plan was adopted following appropriately noticed hearings are included in Appendix A, including Notice of Meeting and Public Hearing – GMA 9 and GMA 10.

Coordination with Surface Water Management Entities

Letter copies to surface water management entities including link to Management Plan for coordination purposes within the district are included in Appendix B.

GROUNDWATER RESOURCES AND USAGE COMAL COUNTY

The aquifer managed by the CTGCD is the Trinity Aquifer and its subdivisions consisting of the Upper Glen Rose Limestone, Lower Glen Rose Limestone, Cow Creek Limestone, Sligo Limestone and Hosston Sand. The Trinity Aquifer extends across much of the central and northeastern part of the state. It is composed of several smaller aquifers contained within the Trinity Aquifer and its subdivisions. These aquifers consist of limestones, sands, clays, gravels, and conglomerates. Their combined freshwater saturated thickness is about 1,900 feet in Central Texas. In general, groundwater is fresh but very hard in the outcrop of the aquifer. Total dissolved solids increase from less than 1,000 milligrams per liter in the

east and southeast to between 1,000 and 5,000 milligrams per liter, or slightly to moderately saline, as the depth to the aquifer increases. Sulfate and chloride concentrations also tend to increase with depth. Water quality and water quantity varies greatly throughout the district

The aquifer is one of the most extensive and highly used groundwater resources in Texas (George et al. 2011). Depths are highly variable within the Trinity Aquifer and its subdivisions and depend entirely on site-specific topography and geology, especially faulting. The Trinity Aquifer discharges to many springs, with most discharging less than 10 cubic feet per second.

The Edwards Aquifer, overseen by the Edwards Aquifer Authority, overlies portions of the Trinity Aquifer and its subdivisions throughout the eastern one-third of Comal County. Wells completed into the Edwards Aquifer must obtain a permit through the Edwards Aquifer Authority. In areas where a well is to be completed into the Trinity Aquifer and its subdivisions but must pass through a portion of the Edwards Aquifer, the driller must obtain a "pass through" permit from the Edwards Aquifer Authority.

According to the 2022 Historical Water Use Survey Data provided by the Texas Water Development Board (Appendix G), groundwater has supplied most of the water needs for all water user groups, excluding livestock over the last several years, with municipal users commanding the largest share. It should be noted that the totals provided within TWDB's Historical Water Use Survey Data include groundwater drawn from both the Edwards and Trinity Aquifers.

ESTIMATES OF TECHNICAL INFORMATION REQUIRED BY §36.1071 OF THE TEXAS WATER CODE (TWC)AND RULE 356.52 OF TITLE 31 OF THE TEXAS ADMINISTRATIVE CODE (TAC)

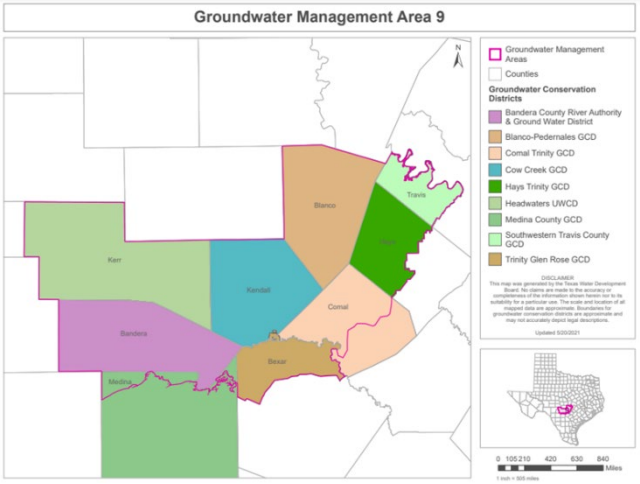
Estimate of Modeled Available Groundwater in the district based on Desired Future Conditions (DFC)

Modeled available groundwater (MAG) is defined by TWC §36.001(25) as "the amount of water that the executive administrator [of TWDB] determines may be produced on an average annual basis to achieve a desired future condition established under §36.108." The district is represented both in Groundwater Management Area 9 (GMA-9) and Groundwater Management Area 10 (GMA-10). The DFC of an aquifer must be determined through joint planning with other groundwater conservation districts within the same groundwater management area as specified und §36.108 of the TWC.

The representatives of the member districts of both GMA-9 and GMA-10 have completed the joint planning process to determine the desired future conditions of the aquifers for each GMA. The third planning cycle Explanatory Report and DFC for GMA 10 was certified by the Texas Water Development Board as administratively complete on October 20, 2022, and adopted by CTGCD Resolution 11142022 by the Board of Directors on November 14, 2022. The 2022 joint planning cycle for GMA 9 was adopted by Resolution #111521.01 by all member districts and certified as administratively complete by the TWDB on November 8, 2022, and adopted by the CTGCD Board of Directors on March 6, 2023 by CTGCD Resolution #03062023.

The modeled available groundwater values for the Trinity Aquifer in both GMA areas of the district, are based on the most recent and appropriate GAM runs as specified in the following sections.

Modeled Available Groundwater (MAG) Based On Desired Future Conditions (DFCs) For GMA 9



https://www.twdb.texas.gov/groundwater/management_areas/gma9.asp

Adopted DFCs for the Trinity Aquifer and its subdivisions located within GMA 9 and underlying CTGCD provide for a total 9,383 ac-ft per year (2010-2060) as reflected in Table 2 (GAM Run 21-014 MAG).

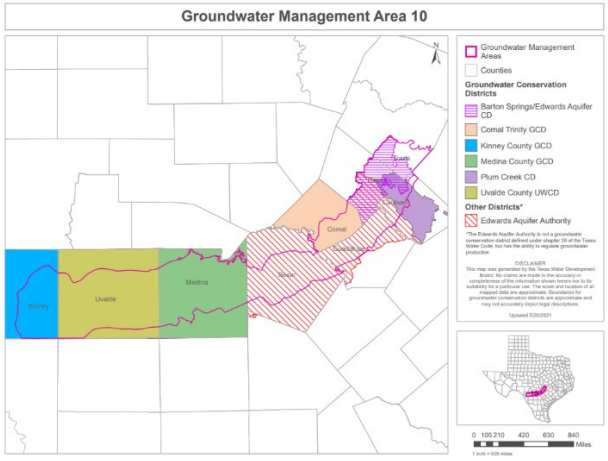
Table 2. MAG for the Trinity Aquifer, GMA 9, for CTGCD (in ac-ft), GAM Run 21-014 MAG

Groundwater Management Area (GMA) 9
Modeled Available Groundwater for Relevant Aquifers by Groundwater Conservation District (GCD)
2021 Joint Planning

Comal Trinity GCD								
GCD	Aquifer	County	Modeled Available Groundwater (acre-feet per year)					
			2020	2030	2040	2050	2060	2070	2080
Comal Trinity GCD	Trinity	Comal	9,383	9,383	9,383	9,383	9,383	n/a	n/a

Source GAM Run 21-014 MAG (December 8, 2022)

Modeled Available Groundwater Based On Desired Future Conditions For GMA 10



https://www.twdb.texas.gov/groundwater/management_areas/gma10.asp

The GCDs within GMA 10 adopted the Explanatory Report and DFCs on October 26, 2021, with reliance on AA 10-06 (Thorkildsen and Backhouse, November 29, 2011) and with MAG recalculated in GAM Run 16-033 MAG to recalculate modeled available groundwater for the Trinity Aquifer to reflect boundary changes in GMA 10 and groundwater conservation districts. The TWDB declared the report administratively complete on October 20, 2022. CTGCD total MAG amount for the Trinity Aquifer and its subdivisions located within GMA 10 boundaries is 33,554 acre-feet per year (2010-2060) as reflected in Table 3.

Table 3. MAG for the Trinity Aquifer, GMA 10, Comal County (in ac-ft)

COUNTY	YEAR					
	2010	2020	2030	2040	2050	2060
Comal	33,554	33,554	33,554	33,554	33,554	33,554

Source GAM Run 16-033 MAG (July 20, 2018)

Estimate of Amount of Groundwater Being Used Within the District on an Annual Basis

The TWDB provides estimates of the amount of groundwater used in the district in the Estimated Historical Groundwater Use and 2022 State Water Plan (Appendix G). The Municipal Water User Group (WUG) is by far the highest groundwater user group in the District. "Estimated Historical Groundwater Use and 2022 State Water Plan Datasets" includes usage estimates from 2004 through 2019. In 2019 the total groundwater usage for all WUG was estimated to be 22,515 acre-feet. The 2022 State Water Plan states that the data for municipalities, water supply corporations and utility districts are not apportioned for the areas outside the district their usage may represent. The district began collecting groundwater pump data from non-exempt wells January 1, 2016. Actual collected volume for non-exempt wells within the district are provided in Table 4 and reflect groundwater produced from the Trinity Aquifer and its subdivisions only. The 2019 actual reported non-exempt volume for all non-exempt WUGs was 10,926 acre-feet. The district considers the estimated 22,515 to be inflated due to non-apportioning for Edwards Aquifer and usage outside the district.

Table 4. 2021 Reported Non-Exempt Groundwater Usage (in ac-ft)[1]

Acre-feet per year by GMA

GMA	2017	2018	2019	2020	2021
9	3,625	4,084	4,056	4,218	4,185
10	4,588	5,503	6,870	7,793	8,189
Total Acre-ft	8,213	9,587	10,926	12,011	12,374

[1]Comal Trinity Groundwater Conservation District Pump Database. Values collected through non-exempt well owner's quarterly reports. This table includes corrections to prior year values due to misreported data in those years.

Texas Water Development Board provides estimates of exempt groundwater usage for all of Comal County, as displayed in Table 5.

Table 5.

GMA-9

Projected Exempt Groundwater Use Estimates
Acre-feet per year

Comal Trinity GCD

Total Estimated Exempt Use (by aquifer)

Aquifer	2020	2030	2040	2050	2060	2070	2080
Trinity	1,063	1,279	1,468	1,647	1,809	1,967	1,984

https://www.twdb.texas.gov/groundwater/management_areas/exempt_use/GMA_9_ExemptUse_2020.pdf

GMA-10

Projected Exempt Groundwater Use Estimates
Acre-feet per year

Comal Trinity GCD

Total Estimated Exempt Use (by aquifer)

Aquifer	2020	2030	2040	2050	2060	2070	2080
Other	34	43	52	61	70	79	80
Trinity	551	692	838	984	1,121	1,261	1,275
Total	**585**	**735**	**890**	**1,045**	**1,191**	**1,340**	**1,355**

Estimates derived using Texas State Demographic Center Data, TWDB Water Use Survey data, TWDB water demand projections, and the TWDB Groundwater Database.

Values are rounded to the nearest acre-foot.

https://www.twdb.texas.gov/groundwater/management_areas/exempt_use/GMA_10_ExemptUse_2020.pdf?d=8510.099999904633

Estimate Of Annual Amount Of Recharge From Precipitation, Discharge, and Flow Groundwater Resources Within The District

Table 6. District Groundwater Flow Budget and Recharge Variable
GAM Run 22-012: CTGCD (October 14, 2022)

SUMMARIZED INFORMATION FOR THE SOUTHERN PORTION OF THE TRINITY AQUIFER THAT IS NEEDED FOR THE COMAL TRINITY 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	Trinity Aquifer	42,457
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Trinity Aquifer	15,601
Estimated annual volume of flow into the district within each aquifer in the district	Trinity Aquifer	38,106
Estimated annual volume of flow out of the district within each aquifer in the district	Trinity Aquifer	28,422
Estimated net annual volume of flow between each aquifer in the district	From the Trinity Aquifer to the Edwards (Balcones Fault Zone) Aquifer and deep Trinity Aquifer	38,912*

* In the Comal Trinity Groundwater Conservation District, groundwater generally flows east from the Trinity Aquifer to the Edwards (Balcones Fault Zone) Aquifer and the confined parts of the Trinity Aquifer that underlie the Edwards (Balcones Fault Zone) Aquifer.

Estimate Of Projected Surface Water Supply In The District

Canyon Lake Reservoir provides the majority of surface water supply, with a small amount of water sourced directly from the Guadalupe River. Projected total surface water supply estimates range from 16,157 in the year 2030 to 16,255 acre-feet in 2070, according to the Estimated Historical Water Use and 2022 State Water Plan (Appendix G)

Estimate Of Projected Total Demand For Water In The District

Based on TWDB Estimated Historical Water Use and 2022 State Water Plan demand by decade, CTGCD will see non-exempt demand of 51,086 acre-feet in 2030 increasing to 84,624 acre-feet in the year 2070. The current projected exempt groundwater usage for the district is 1063 acre-feet per year (2020) to 1,984 in 2080, as per the TWDB Projected Exempt Groundwater Use Estimates, 2020 (Appendix G)

Estimate Of Projected Total Water Supply Needs In Comal County

The district has considered the projected water supply needs from the TWDB 2022 State Water Plan which suggests a deficit will exist in Comal County with water needs exceeding supplies, ranging from 15,421 acre-feet in 2030 to 39,952 acre-feet in 2070. (Appendix G) The projected needs are primarily from municipal, followed by industrial/mining and irrigation. The district has noted that San Antonio Water System, and the city of Fair Oaks Ranch, Schertz, and Selma are included in this data. Fair Oaks Ranch is not within the CTGCD district, and the district is not aware of any Trinity Aquifer wells in Schertz or Selma. Because this is county-wide data, and includes Edwards Aquifer water users, the estimated needs are over-represented for the district.

Projected Water Management Strategies

The TWDB 2022 State Water Plan provides projected water management strategies for each of the non-exempt WUG in Comal County that include goals for municipal conservation, drought management, local Trinity Aquifer development, re-use, expansion and pipeline development, and other projects by decade. The combined strategies provide for 48,133 acre-feet in 2030 up to 63,748 acre-feet by the year 2070 for all of Comal County. (Details by WUG, Appendix G)

ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE NECESSARY TO EFFECTUATE THE MANAGEMENT PLAN AND DETAILS OF HOW THE DISTRICT WILL MANAGE GROUNDWATER SUPPLIES

The district will manage the supply of groundwater within the district based on the district's best available data and its assessment of water availability and groundwater storage conditions. The most current GAM and MAG values developed by the TWDB for the Trinity Aquifer and its subdivisions or other groundwater models, as well as other studies performed by other entities, will also aid in the decision-making process by the district.

The district will use the management plan to guide the district in its efforts to preserve and protect the groundwater resources within Comal County. The district will ensure that rule development, regulatory activities, planning effects and daily operations are consistent with the management plan. The rules for the district will be developed in coordination with the management goals and technical information provided in the management plan. The rules shall be consistent with the provision of the management plan and Chapter 36 of the Texas Water Code.

The district has adopted rules that require the registration of non-exempt wells within the district consistent with the district's management plan, the provisions of Chapter 36.113, and other pertinent sections of Chapter 36. District rules can be found at https://www.comaltrinitygcd.com/rules-f4x40. Non-exempt well water usage is reported to the district quarterly. Other district rules govern spacing, construction, and plugging of abandoned wells and are strictly enforced to protect groundwater resources from contamination and waste. The district will encourage cooperative and voluntary rule compliance, but if rule enforcement becomes necessary, the enforcement will be legal, fair, and impartial.

The district maintains well monitoring equipment and regularly evaluates and reports conditions to the Board of Directors at regular meetings open to the public.

The district is committed to working and planning with other GCDs in GMAs 9 and 10. The district will use the management plan as part of its cooperative efforts with the neighboring GCDs. The district will manage the supply of groundwater within the district based on the DFCs and MAG resulting from the GMAs 9 and 10 cooperative planning processes, production demand from exempt and non-exempt wells, and the district's best available data.

The district will seek cooperation and coordination in the implementation of this plan with the appropriate state, regional or local water management or planning entities. The district shall review and re-adopt this plan, with or without revisions, at least once every five years in accordance with Chapter 36.1072(e). Any amendment to this plan shall be in accordance with Chapter 36.1073.

METHODOLOGY FOR TRACKING PROGRESS IN ACHIEVING MANAGEMENT GOALS

District staff will present an annual report to the members of the Board of Directors regarding performance of the district and progress in achieving management goals and objectives, presented on the following pages. The report will be presented at the first regular board meeting following the end of the plan year. The district will maintain the report for public inspection on the district website https://www.comaltrinitygcd.com/management-plan upon adoption by the CTGCD Board of Directors.

COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT MANAGEMENT GOALS

1. Implement management strategies that will provide for the most efficient use of groundwater.

1A Management Objective

The district maintains a program of issuing well drilling permits for all new and altered wells within the district with construction oversight to prevent contamination and co-mingling of groundwater.

Performance Standard

The number of well drilling permit applications received and the number of well completions will be presented and discussed in the annual report to the district board of directors.

1B Management Objective

District maintains a program of quarterly collection and record-keeping of gallons pumped from non-exempt wells to quantify Trinity groundwater withdrawal from non-exempt water wells within the district.

Performance Standard

Annual report to the board of directors will record acre-ft of Trinity groundwater pumped by non-exempt wells during the preceding fiscal year.

2. Implement strategies that will control and prevent waste of groundwater.

2A Management Objective

Each year the District will provide information to groundwater users on the importance of controlling and preventing waste of groundwater.

Performance Standard

Each year provide information for the public about controlling and preventing waste of groundwater on at least one occasion by one of the following methods:

- article published in local print media
- distribution of conservation literature handouts
- public presentation by District Staff or Directors
- information on District website

The number and occurrences will be reported in the annual report to the directors.

3. Implement strategies that will control and prevent subsidence.

A review of the 2017 TWDB Report: *Identification of the Vulnerability of the Major and Minor Aquifers of Texas to Subsidence with Regard to Groundwater Pumping - TWDB Contract Number 1648302062, by LRE Water* http://www.twdb.texas.gov/groundwater/models/research/subsidence/subsidence.asp "suggest that the Edwards BFZ has a very low risk for future subsidence due to pumping. However, there is a minor risk of local subsidence due to dissolution of the aquifer material and subsequent collapse." CTGCD is not aware of any local subsidence concerns and has determined

that subsidence issues are not applicable to the district. The district will investigate all reports of potential subsidence within the district.

4. Implement management strategies that will address conjunctive surface water management issues.

4A Management Objective

The district will participate in the water planning process by attending at least one meeting annually of the South-Central Texas Regional Water Planning Area (Region L) to encourage the development of surface water supplies to meet the needs of water user groups in the district.

Performance Standard

The district representative that attends the Region L meetings will report to the board of directors at the next following regular board meeting. The date of the meeting, attendee, and any relevant information will be recorded in the meeting minutes.

5. Implement strategies that will address natural resource issues which impact the use and availability of groundwater, or which are impacted by using groundwater.

5A Management Objective

The district will address potential natural resource issues that may arise from the use of groundwater for mining (quarries) and industrial use in the district.

Performance Standard

The annual report to the Board will include record of annual use of groundwater for mining/industrial purposes.

5B Management Objective

The district maintains a program of inspecting abandoned or compromised wells to protect from water quality degradation by ensuring proper closing of wells in accordance with rules set forth by CTGCD.

Performance Standard

The annual report to the Board will include report of number of wells plugged.

6. Implement strategies that will address drought conditions.

6A Management Objective

The district will collect drought condition information on a quarterly basis related to Comal County and the surrounding region utilizing Drought.gov.

Performance Standard

Drought condition information will be summarized and discussed at least quarterly during district board meetings.

6B Management Objective

Collect and provide information on precipitation patterns across Comal County as recorded by the National Weather Service on a quarterly basis.

Performance Standard

Report precipitation conditions to the district board of directors during regular board meetings on a quarterly basis.

7. Implement strategies that will address:

Conservation

7A Management Objective

The district will maintain information regarding the importance of groundwater conservation and water conservation methods on its website.

Performance Standard

Maintain a record of "hits" to conservation information on the website; include in annual report to the district board of directors.

Recharge Enhancement

7B Management Objective

The district will investigate potential recharge enhancement sites, either natural or artificial.

Performance Standard

Annually, the General Manager will include a report to the board of directors on the district's findings related to recharge enhancement.

Rainwater Harvesting

7C Management Objective

The district will promote rainwater harvesting by providing news articles to local publications, advice or presentations on rainwater harvesting (in-person or on the website), or information and links to resources on the district website.

Performance Standard

The number of articles, presentations, personal site visits, or "hits" to rainwater harvesting information on the website will be included in an annual report to the district board of directors.

Precipitation Enhancement

The precipitation enhancement goal is not applicable to the district as this objective is not cost effective at this time.

Brush Control

7D Management Objective

The district will provide written information containing brush control information to promote recharge at public information events, board meetings, or other locations.

Performance Standard

The number of handouts and a list of events or other locations where they were provided will be presented in an annual report to the district board of directors.

8.0 Addressing Desired Future Conditions

8A Management Objective

The district will monitor the water level in at least five Trinity Aquifer wells on a quarterly basis and the TWDB Monitor Well at Fischer in Comal County, Well #6807407.

Performance Standard

The district will monitor the water level and compare the average drawdown and allowable drawdown resulting from the DFC process. The data will be presented to the district board of directors quarterly and in an annual report and presented to GMA 9 and GMA 10 as required under TWC 36.108.

8B Management Objective

The General Manager or one designated board member of the CTGCD will attend and participate in the majority of GMA 9 and GMA 10 Joint Planning Meetings.

Performance Standard

General Manager or board member will report on GMA meetings attended at each following board meeting. The meeting dates and attendees will be recorded in the board meeting minutes.

REFERENCES

Texas Water Development Board, 2020 South Central Texas Regional Water Plan, Volume I — Executive Summary and Regional Water Plan

Texas Water Development Board, 2023,, Estimated Historical Groundwater Use and 2022 State Water Plan Datasets: Comal Trinity Groundwater Conservation District. Texas Water Development Board, March 3, 2023.

Comal Trinity Groundwater Conservation District, Non-Exempt Pumpage Database.

George, P.G., Mace, R E., and Petrossian, R., 2011, Aquifers of Texas, Report 380, Texas Water Development Board, Austin, TX.

George, W.O., S. D. Breeding, and W. W. Hastings, 1952, Geology and ground-water resources of Comal County, Texas. USGS Water Supply Paper 1138.

Lamkey, N., and Jones I, 2022, GAM Run 22-012: Comal Trinity Groundwater Conservation District Management Plan.

Bradley, R., Boghici, R., 2018, GAM Run 16-033 MAG: Modeled Available Groundwater for the Aquifers in Groundwater Management Area 10: Texas Water Development Board.

U.S. Census Bureau, United States Census (2020)

Guadalupe-Blanco River Authority Comprehensive Annual Financial Report, FY ended August 31, 2020, and 2019, pg. 58.

APPENDIX A

Notices of Meetings and Public Hearings – GMA 9 and GMA 10

NOTICE OF PUBLIC HEARING

Notice is given that a **Public Hearing** by the Board of Directors of the Comal Trinity Groundwater Conservation District will be held, via telephone and video conference (Zoom registration link provided below), on **Monday May 17, 2021, at 6 p.m.** for the following purpose:

Groundwater Management Area 10
Proposed Desired Future Conditions and Relevant Aquifer Designations

At an open meeting of the **Groundwater Management Area 10 Joint Planning Committee** (GMA-10) held on April 20, 2021 via zoom, and attended by representatives from the following groundwater conservation districts located wholly or partially within Groundwater Management Area 10: Edwards Aquifer Authority, Medina County Groundwater Conservation District, Uvalde County Underground Water Conservation District, Plum Creek Conservation District, Barton Springs/Edwards Aquifer Conservation District, Comal Trinity Groundwater Conservation District, and Kinney County Groundwater Conservation District; GMA-10 considered and adopted the following Proposed Desired Future Conditions (DFCs) for GMA-10 regional groundwater planning purposes:

Groundwater Management Area 10 Proposed Desired Future Conditions and Relevant Aquifer Designations

Austin Chalk (Uvalde County)

No drawdown (including exempt and non-exempt use).

Buda Limestone (Uvalde County)

No drawdown (including exempt and non-exempt use) through 2080.

Edwards (BFZ) Northern Subdivision

Spring flow at Barton Springs during average recharge conditions shall be no less than 49.7 cubic feet per second averaged over an 84 month (7-year) period; and during extreme drought conditions, including those as severe as a recurrence of the 1950s drought of record, spring flow of Barton Springs shall be no less than 6.5 cubic feet per second averaged on a monthly basis through 2080.

Edwards (BFZ) Northern Subdivision Saline Zone

No more than 75 feet of regional average potentiometric surface drawdown due to pumping when compared to pre-development conditions through 2080.

Edwards (BFZ) San Antonio Segment within Edwards Aquifer Authority

Desired future conditions and modeled available groundwater for the Edwards Aquifer within jurisdiction of the Edwards Aquifer Authority are set by the Texas Legislature (Act of May 28, 2007, 80th Leg., R.S., ch. 1351, § § 2.02 and 2.06, 2007 Tex. Gen. Laws, 4612, 4627, and 4627; Act of May 28, 2007, 80th Leg., R.S. ch. 1430, § § 12.02 and 12.06, 2007 Tex. Gen. Laws 5848, 5901, and 5903). The DFCs are specified in Sections 1.14(a), (f), (h), and 1.26 of the Edwards Aquifer Authority Act. The DFCs are specified in Sections 1.14(a), (f), (h), and 1.26 of the Edwards

Aquifer Authority Act, and relate to levels in index wells (J-17 in the San Antonio pool and J-27 in the Uvalde pool) or flows in the Comal Springs and San Marcos Springs. Refer to the Edwards Aquifer Authority Groundwater Management Plan for details.

Edwards (Kinney County)

Water level in well number 70-38-902 shall not fall below 1184 feet mean sea level through 2080.

Leona Gravel (Uvalde County)

No drawdown (including exempt and non-exempt use) through 2080.

Trinity

Average regional well drawdown not exceeding 25 feet during average recharge conditions (including exempt and non-exempt use); within Uvalde County: 20 feet through 2080.

Trinity (Plum Creek GCD only)

Declared Non-relevant

Members of the public are invited to attend and provide oral comment, testimony, and/or submit other documentation and information relevant to the Proposed DFCs and Relevant Aquifer Designations to the Board of Directors at this Public Hearing.

If unable to attend the Public Hearing, members of the public are invited to submit written comments, testimony, and/or other documentation and information relevant to the Proposed DFCs and Relevant Aquifer Designations via the U.S. Postal Service, hand delivery or via email to the Board of Directors at the District Office. Physical address, mailing address and email address described below.

GMA-10 has prepared standardized Public Comment Forms to help you organize and substantiate your submission. This form is available at the physical address or on our website at www.ComalTrinityGCD.com

The Public Comment period runs from April 23, 2021 through July 22, 2021.

The District will prepare a report of any relevant comments received at the Public Hearing and attach any written comments, testimony, and/or other documentation and information relevant to the Proposed DFCs and Relevant Aquifer Designations received through July 22, 2021. This report and attachments will be provided to the GMA-10 Committee for their review, consideration, and incorporation into the DFC decision-making process.

Register to join the Meeting using Zoom –

https://zoom.us/meeting/register/tJUlcOqhqDIvGt33t36AH3dfGNwNT5ix5aX0

Questions or requests for additional information may be submitted to:
H.L. Saur telephone 210-990-2130, email Admin@ComalTrinityGCD.com or at the District Office:

Comal Trinity Groundwater Conservation District, Physical Address:9850 FM 311, Spring Branch, TX 78070
Mailing Address: PO Box 664, Spring Branch, TX 78070

The District will make available in the District Office at the address above a copy of the documentation of factors considered under Texas Water Code section 36.108(d) and groundwater availability model results.

PUBLIC HEARING
Groundwater Management Area 9
Proposed Desired Future Conditions and Proposed Non-Relevant Aquifer Classifications

May 17, 2021 at 6:00 p.m. (virtual: https://zoom.us/meeting/register/tJUlcOqhqDIvGt33t36AH3dfGNwNT5ix5aX0

At an open meeting of the **Groundwater Management Area 9 Joint Planning Committee** (GMA 9) held virtually on March 22, 2021 via a Zoom Meeting and attended by representatives from the following groundwater conservation districts located wholly or partially within Groundwater Management Area 9: Bandera County River Authority and Groundwater District, Barton Springs/Edwards Aquifer Conservation District, Blanco-Pedernales Groundwater Conservation District, Comal Trinity Groundwater Conservation District, Cow Creek Groundwater Conservation District, Headwaters Groundwater Conservation District, Hays Trinity Groundwater Conservation District, , Southwestern Travis County Groundwater Conservation District, and Trinity-Glen Rose Groundwater Conservation District; GMA 9 considered and adopted the following Proposed Desired Future Conditions (DFCs) and Proposed Non-Relevant Aquifer Classifications for GMA 9:

*Proposed Desired Future Conditions**

Trinity Aquifer

Allow for An Increase in Average Drawdown of Approximately 30 Feet Through 2060 (throughout GMA 9) Consistent with "Scenario 6" in TWDB GAM Task 10-005.

Edwards-Trinity (Plateau) Aquifer

Allow for No Net Increase in Average Drawdown in Bandera and Kendall Counties through 2080.

Ellenburger-San Saba Aquifer

Allow for An Increase in Average Drawdown of No More Than 7 Feet in Kendall County through 2080.

Hickory Aquifer

Allow for An Increase in Average Drawdown of No More Than 7 Feet in Kendall County through 2080.

*Allow for DFC variance of up to five percent when comparing DFCs to average drawdown calculations from model files.

FILED
2021 APR 20 PM 2:11
BOBBIE KOEPP
KENDALL COUNTY CLERK

Proposed Non-Relevant Aquifer Classifications

Edwards Aquifer (Balcones Fault Zone)	**Bexar, Comal, Hays, and Travis Counties**
Edwards-Trinity (Plateau)	**Blanco and Kerr Counties**
Ellenburger-San Saba	**Blanco and Kerr Counties**
Hickory	**Blanco, Hays, Kerr, and Travis Counties**
Marble Falls	**Blanco County**

Members of the public are invited to attend and provide oral comment, testimony, and/or submit other documentation and information relevant to the Proposed DFCs and Non-Relevant Aquifer Classifications to the Board of Directors at this Public Hearing.

If unable to attend the Public Hearing, members of the public are invited to submit written comments, testimony, and/or other documentation and information relevant to the Proposed DFCs and Non-Relevant Aquifer Classifications to the Board of Directors at the District Office located at:

Comal Trinity Groundwater Conservation District, P.O Box 664, Spring Branch, TX 78070 or in-person at 9850 FM 311, Spring Branch, TX 78070

GMA 9 has prepared standardized Public Comment Forms to help you organize and substantiate your submission. This form is available at the address above and at www.ComalTrinityGCD.com/

The Public Comment period runs from April 1, 2021 through June 30, 2021.

The District will prepare a report of any relevant comments received at the Public Hearing and attach any written comments, testimony, and/or other documentation and information relevant to the Proposed DFCs and Non-Relevant Aquifer Classifications received through June 30, 2021. This report and attachments will be provided to the GMA 9 Committee for their review, consideration, and incorporation into the DFC decision-making process.

Questions or requests for additional information may be submitted to:
H.L. Saur, 830-885-2130 or at the address above.

APPENDIX B

Coordination with Surface Water Management Entities

Comal Trinity Groundwater Conservation District
P.O. Box 664
Spring Branch, Texas 78070
(830) 885-2130

GBRA
Surface Water Manager
933 East Court Street
Seguin, TX 78155

March 20, 2023

COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT GROUNDWATER MANAGEMENT PLAN

The board of directors for Comal Trinity Groundwater Conservation District (CTGCD) adopted a revised Groundwater Management Plan on March 13, 2022, after proper posting and public hearing. This notification of our revised Plan is provided to all surface water entities within our District for coordination of conjunctive water use purposes. The Plan may be viewed at https://www.comaltrinitygcd.com/management-plan.

CTGCD staff and board members welcome any comments or questions and may be reached by email at Admin@ComalTrinityGCD.com or by phone at 830-885-2130.

Regards,

H.L. Saur
General Manager

Comal Trinity Groundwater Conservation District
P.O. Box 664
Spring Branch, Texas 78070
(830) 885-2130

City of New Braunfels
Surface Water Manager
263 Main Plaza
New Braunfels, TX 78130

March 20, 2023

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CTGCD staff and board members welcome any comments or questions and may be reached by email at Admin@ComalTrinityGCD.com or by phone at 830-885-2130.

Regards,

H.L. Saur
General Manager

Comal Trinity Groundwater Conservation District
P.O. Box 664
Spring Branch, Texas 78070
(830) 885-2130

Texas Water Company
P.O. Box 1742
Canyon Lake, TX 78133

March 20, 2023

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CTGCD staff and board members welcome any comments or questions and may be reached by email at Admin@ComalTrinityGCD.com or by phone at 830-885-2130.

Regards,

H.L. Saur
General Manager

Comal Trinity Groundwater Conservation District
P.O. Box 664
Spring Branch, Texas 78070
(830) 885-2130

Canyon Regional Water Authority
850 Lakeside Pass
New Braunfels, Texas 78130

March 20, 2023

COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT GROUNDWATER MANAGEMENT PLAN

The board of directors for Comal Trinity Groundwater Conservation District (CTGCD) adopted a revised Groundwater Management Plan on March 13, 2022, after proper posting and public hearing. This notification of our revised Plan is provided to all surface water entities within our District for coordination of conjunctive water use purposes. The Plan may be viewed at https://www.comaltrinitygcd.com/management-plan.

CTGCD staff and board members welcome any comments or questions and may be reached by email at Admin@ComalTrinityGCD.com or by phone at 830-885-2130.

Regards,

H.L. Saur
General Manager

APPENDIX C

CTGCD - Resolution #20230306-01 Adoption of Desired Future Conditions And Non-Relevant Aquifers For Comal Trinity Groundwater Conservation District In Accordance With Groundwater Management Area 9 Joint Planning (March 13, 2023)

STATE OF TEXAS §
§ **RESOLUTION #20230306-01**
COUNTY OF COMAL §

COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT

ADOPTION OF DESIRED FUTURE CONDITIONS AND NON-RELEVANT AQUIFERS FOR COMAL TRINITY GROUNDWATEER CONSERVATION DISTRICT IN ACCORDANCE WITH GROUNDWATER MANAGEMENT AREA#9 JOINT PLANNING

WHEREAS, the Comal Trinity Groundwater Conservation District (CTGCD) is a groundwater conservation district created in accordance with and subject to Chapter 36, Texas Water Code and;

WHEREAS, the CTGCD is required under Chapter 36.108, Texas Water Code; to participate in Groundwater Management Area Joint Planning and;

WHEREAS, the CTGCD is located in Groundwater Management Area# 9 and;

WHEREAS, Groundwater Management Area # 9 has completed the joint planning required under Chapter 36.108 and by resolution #111521-01, has adopted Desired Future Conditions (DFCs) for relevant aquifers and declared portions of certain aquifers as non-relevant for regional planning purposes, and submitted the resolution and an Explanatory Report to the Texas Water Development Board (TWDB) and;

WHEREAS Chapter 36.108 (d-4) and TWDB Rule 356.34 require districts within GMA 9 to adopt the DFCs as soon as possible after being notified that the GMA 9 resolution and Explanatory Report are administratively complete and;

WHEREAS, the TWDB has notified GMA 9 Coordinator on November 8, 2022 that the DFCs and the Explanatory Report are administratively complete;

NOW THEREFORE BE IT RESOLVED, that the Board of Directors of the Comal Trinity Groundwater Conservation District does hereby adopt the following DFCs and non-relevant aquifers for Comal County as described in the GMA 9 resolution and Explanatory Report:

Trinity Aquifer (Upper, Middle, and Lower undifferentiated) - Allow for An Increase in Average Drawdown of Approximately 30 Feet Through 2060 (Throughout GMA 9) Consistent With "Scenario 6" in TWDB GAM Task I0-005.

Note: The above DFC is for GMA 9 as a whole. In Appendix A of GAM Task 10-005, the DFC calculation for the overall Trinity Aquifer located in Comal County under Scenario 6 would allow for an average drawdown of approximately 23.9 feet in Comal County.

The following aquifers or portions of aquifers are classified as Non-Relevant for regional planning purposes:

- Edwards Aquifer (Balcones Fault Zone) located in Comal County.

PASSED AND APPROVED THIS 6TH DAY OF MARCH, 2023

with 5 ayes 0 nays, _____ 0 abstentions.

X _____

Larry Hull
President

X _____

Dr. Larry Sunn
Secretary

APPENDIX D

CTGCD - Resolution #11142022 Adoption of Desired Future Conditions For Groundwater Management Area 10 (November 14, 2022)

STATE OF TEXAS	§	
	§	**RESOLUTION 11142022**
COUNTY OF COMAL	§	

COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT

ADOPTION OF DESIRED FUTURE CONDITIONS FOR RELEVANT AQUIFERS FOR COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT IN ACCORDANCE WITH GROUNDWATER MANAGEMENT AREA #10 JOINT PLANNING

WHEREAS, the District Representatives of Groundwater Management Area (GMA) 10 comprises representatives designated by each of the Groundwater Conservation Districts (GCDs) located wholly or partially within the boundaries of GMA 10, as defined by the Texas Water Development Board: Barton Springs/Edwards Aquifer Conservation District, Comal Trinity GCD, Edwards Aquifer Authority, Kinney County GCD, Medina County GCD, Plum Creek Conservation District, and Uvalde County Underground Water Conservation District; and

WHEREAS, On October 20,2022, the Texas Water Development Board issued a letter to Groundwater Management Area 10 stating the Desired Future Conditions (DFC) Explanatory Report and other materials required by the Texas Water Code §36.108 (d-3) as administratively complete in accordance with 31 Texas Administrative Code §356.33;

WHEREAS, Texas Water Code §36.108 (d-4) states, after a district receives notification from the Texas Water Development Board that the desired future conditions resolution and explanatory report under Subsection (d-3) are administratively complete, the district shall adopt the applicable desired future conditions in the resolution and report;

WHEREAS, the Texas Legislature has determined that no DFC for the Edwards Aquifer within the Edwards Aquifer Authority (EAA)'s jurisdiction is required to be established by the joint planning in GMA 10, and that the EAA is statutorily excluded from the requirement to participate as a voting member of the GMA for joint planning of other aquifers; and

WHEREAS, the District Representatives has further subdivided the Edwards Aquifer in GMA 10 based on considerations prescribed in 36.108(d) and other relevant scientific and hydrogeological data to establish different DFCs, as authorized by Chapter 36.108(d-1), into the Western GMA Subdivision and the Northern GMA Subdivision and

WHEREAS, the District representatives of GMA 10 have identified the following as relevant aquifers for joint planning purposes:

1. Freshwater Edwards, Northern Subdivision
2. Saline Edwards, Northern Subdivision
3. Freshwater Edwards, Western Subdivision (relevant only in Kinney County)
4. Trinity (relevant downdip of its recharge zone)
5. Austin-Buda (relevant only in Uvalde County)
6. Leona Gravel (relevant only in Uvalde County)

WHEREAS, the members of the District Representatives for GMA 10 have:

- evaluated available scientific information concerning the hydrogeologic characteristics of the relevant aquifers,
- considered previous DFCs and the ability of the member GCDs to achieve their performance standards;
- conducted additional studies as needed to further assess the aquifer performance and impacts of

groundwater production on other resources,
• evaluated the results of groundwater availability modeling by the TWDB of alternate groundwater management scenarios, and
• considered the nine factors for establishing DFCs that are stipulated in Chapter 36.108(d); and

WHEREAS, GMA 10 timely proposed DFCs for the relevant aquifers before the statutorily required date of May 1, 2021, and held public meetings in accordance with posting and notice requirements of State law to discuss the proposed DFCs and to receive input from stakeholders and the public on the proposed DFCs; and

WHEREAS, the District Representatives have determined that the proposed DFCs for each relevant aquifer: 1) provide a balance between achieving the highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater and control of subsidence in the management area; and 2) provide for the reasonable long-term management of groundwater resources consistent with the management goals under Section 36.1071(a).

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Comal Trinity Groundwater Conservation District does hereby adopt the following Desired Future Conditions for the relevant aquifers in GMA 10:

1. Freshwater Edwards Aquifer in the Northern GMA Subdivision:
   a. Spring flow at Barton Springs during average recharge conditions shall be no less than 49.7 cubic feet per second (cfs) averaged over an 84-month (7-year) period; and

   b. Spring flow of Barton Springs during extreme drought conditions, including those as severe as a recurrence of the 1950s drought of record, shall be no less than 6.5 cfs average on a monthly basis;

2. Saline Edwards Aquifer in the Northern GMA Subdivision:
   No more than 75 feet of regional average potentiometric surface drawdown due to pumping when compared to pre-development conditions;

3. Freshwater Edwards Aquifer in the Western GMA Subdivision:
   The water level in well 70-38-902 shall not fall below 1,184 ft. mean sea level;

4. Trinity Aquifer, in the hydrologically confined zone downdip of the Trinity outcrop:
   a. Outside of Uvalde and Bexar Counties: Average regional well drawdown not exceeding 25 feet during average recharge conditions (including exempt and non-exempt use)
   b. In Uvalde County: No (zero) regional well drawdown (including exempt and non-exempt use)
   c. In Bexar County: Non-relevant for joint planning purposes
   d. In Plum Creek GCD: Non-relevant for joint planning purposes
5. Austin-Buda Limestone Aquifer(s), relevant in Uvalde County only:
   a. Buda Limestone: No drawdown (including exempt and non-exempt use)
   b. Austin Chalk: No drawdown (including exempt and non-exempt use)
6. Leona Gravel Aquifer, relevant in Uvalde County only:
   No drawdown (including exempt and non-exempt use)

EXECUTED this 14th day of November 2022.

By: _____
Larry Hull, President
Board of Directors

ATTEST: _____
Dr. Larry Sunn, Secretary
Board of Directors

APPENDIX E

GROUNDWATER MANAGEMENT AREAS

9 AND 10

Resolutions Adopting Non-Relevant Aquifers and DFCs

STATE OF TEXAS	§	
	§	**RESOLUTION # 111521-01**
GROUNDWATER	§	
MANAGEMENT AREA 9	§	

Adopting the Groundwater Management Area 9 Joint Planning Committee's Proposed Classification of Locally Managed Aquifers as Non-Relevant for Joint Planning Purposes and the Desired Future Conditions for Relevant Major and Minor Aquifers in GMA 9, and authorizing the GMA 9 Chairman to formally submit them and all other required information to the TWDB.

WHEREAS, the Groundwater Conservation Districts (GCDs) located within or partially within Groundwater Management Area 9 (GMA 9) are required under Chapter 36.108, Texas Water Code to conduct joint planning and designate the Desired Future Conditions (DFCs) for aquifers within GMA 9; and

WHEREAS, the Board Presidents or their Designated Representatives of the GCD Members of the Groundwater Management Area 9 Joint Planning Committee (GMA 9) have met as a Committee in various meetings and conducted joint planning in accordance with Section 36.108, Texas Water Code since September 2005; and

WHEREAS, GMA 9, having given proper and timely notice, held an open meeting of the GMA 9 Committee on March 22, 2021 in a ZOOM Virtual Meeting format allowed under a variance to the Open Meetings Act issued by the Governor of Texas due to the Covid pandemic; and

WHEREAS, following GMA 9's March 22, 2021 adoption of GMA 9 Proposed DFCs and the Proposed Classification of Non-Relevant Aquifers, and in accordance with Section 36.108, GMA 9 has solicited and considered public comment during a Public Hearing at each GCD located within or partially within GMA 9, through written public comments, and through public comment in person at various GMA 9 Committee meetings; and

WHEREAS, the GMA 9 Committee received and considered technical advice regarding the requirements contained in Chapter 36.108(subsections c-d3), including but not limited to local aquifers, hydrology, geology, recharge characteristics, local groundwater demands and usage, population projections, ground and surface water inter-relationships, and other considerations that affect groundwater conditions from the Texas Water Development Board (TWDB), Regional Water Planning Groups J, K, and L, consultants, hydrologists, geologists, and other groundwater professionals; and

WHEREAS, following public discussion and due consideration of the current and future needs and conditions of the aquifers in question, the current and projected groundwater demand estimates from local GCDs, the TWDB, and Regional Water Planning Groups J, K, and L, the potential effects on springs, surface water, habitat, and water-dependent species for DFCs set through the year 2060 for the Trinity Aquifer or 2080 for the Edwards Group of the Edwards-Trinity (Plateau), the Ellenburger-San Saba, and Hickory aquifers, the following motions were made and acted upon:

Motion #1:

Moved by George Wissmann and seconded by Micah Voulgaris to adopt the following Desired Future Condition through the year 2060 for the Trinity Aquifer located in GMA 9:

- Allow for An Increase in Average Drawdown of Approximately 30 Feet Through 2060 (Throughout GMA 9) Consistent With "Scenario 6" in TWDB GAM Task 10-005.

The vote on the motion was 9 ayes, 0 nays, and 0 abstentions, and the Motion Passed.

Motion #2

Moved by Micah Voulgaris and seconded by Dave Mauk to adopt the following Desired Future Condition through the year 2080 for the Edwards Group of the Edwards-Trinity (Plateau) Aquifer for those portions located in Kendall and Bandera counties:

- Allow For No Net Increase in Average Drawdown in Kendall and Bandera Counties Through 2080.

The vote on the motion was 9 ayes, 0 nays, and 0 abstentions, and the Motion Passed.

Motion #3

Moved by Micah Voulgaris and seconded by Dave Mauk to adopt the following Desired Future Condition through the year 2080 for the portions of the Ellenburger-San Saba Aquifer located in Kendall County:

- Allow for An Increase in Average Drawdown of No More Than 7 Feet in Kendall County Through 2080.

The vote on the motion was 9 ayes, 0 nays, and 0 abstentions, and the Motion Passed.

Motion #4

Moved by Micah Voulgaris and seconded by Dave Mauk to adopt the following Desired Future Condition through the year 2080 for the portions of the Hickory Aquifer located in Kendall County:

- Allow for An Increase in Average Drawdown of No More Than 7 Feet in Kendall County Through 2080.

The vote on the motion was 9 ayes, 0 nays, and 0 abstentions, and the Motion Passed.

Motion #5

Moved by Jimmy Klepac and seconded by Gene Williams to propose the classification of the Edwards Group of the Edwards-Trinity (Plateau) Aquifer located in Blanco County and Kerr County as non-relevant for the purposes of joint planning.

The vote on the motion was 9 ayes, 0 nays, and 0 abstentions, and the Motion Passed

Motion #6

Moved by Jimmy Klepac and seconded by George Wissmann to propose the classification of the Ellenburger-San Saba Aquifer located in Blanco County and Kerr County as non-relevant for the purposes of joint planning.

The vote on the motion was 9 ayes, 0 nays, and 0 abstentions, and the Motion Passed.

Motion #7

Moved by Charlie Flatten and seconded by Jimmy Klepac to propose the classification of the Hickory Aquifer located in Blanco, Hays, Kerr, and Travis counties as non-relevant for the purposes of joint planning.

The vote on the motion was 9 ayes, 0 nays, and 0 abstentions, and the Motion Passed.

Motion #8

Moved by Jimmy Klepac and seconded by George Wissmann to propose the classification of the Marble Falls Aquifer located in Blanco County as non-relevant aquifer for the purposes of joint planning.

The vote on the motion was 9 ayes, 0 nays, and 0 abstentions, and the Motion Passed.

Motion #9

Moved by David Caldwell and seconded by Lane Cockrell to propose the classification of the Edwards Aquifer (Balcones Fault Zone) located in Bexar, Comal, Hays, and Travis counties as non-relevant for the purposes of joint planning.

The vote on the motion was 9 ayes, 0 nays, and 0 abstentions, and the Motion Passed.

Whereas, the above Motions and Votes of each Committee Member have been recorded in the Minutes of the November 15, 2021 GMA 9 Committee Meeting,

NOW THEREFORE BE IT RESOLVED, Groundwater Management Area 9 Joint Planning Committee Members present and voting on November 15, 2021 do hereby document, record, and confirm the above-described Motions and Votes.

Approved by consensus and signed on November 15, 2021 by the following Voting Groundwater Management Area 9 Joint Planning Committee Members:

Jimmy Klepac – Board President of the Blanco-Pedernales GCD

Dave Mauk – General Manager and Designated Representative for the Bandera County River Authority and Groundwater Conservation District

David Caldwell - General Manager and Designated Representative for the Medina County GCD

Charlie Flatten - General Manager and Designated Representative for the Hays Trinity GCD

Micah Voulgaris – General Manager and Designated Representative for the Cow Creek GCD

George Wissmann – General Manager and Designated Representative for the Trinity Glen Rose GCD

Gene Williams - General Manager and Designated Representative for the Headwaters GCD

H.L. Saur - General Manager and Designated Representative of the Comal Trinity GCD

Lane Cockrell - General Manager and Designated Representative for the Southwestern Travis County GCD

STATE OF TEXAS	§	
	§	
COUNTIES OF BEXAR,	§	
CALDWELL, COMAL,	§	**RESOLUTION #**
GUADALUPE, HAYS, KINNEY,	§	**GMA 10 2021-10-26**
MEDINA, TRAVIS, AND	§	
UVALDE	§	

THE DISTRICT REPRESENTATIVES OF GROUNDWATER MANAGEMENT AREA 10

CONSIDERING A RESOLUTION TO ADOPT DESIRED FUTURE CONDITIONS FOR EACH OF THE AQUIFERS IN GMA 10 RELEVANT FOR JOINT PLANNING PURPOSES

WIIEREAS, the District Representatives of Groundwater Management Area (GMA) 10 comprises representatives designated by each of the Groundwater Conservation Districts (GCDs) located wholly or partially within the boundaries of GMA 10, as defined by the Texas Water Development Board: Barton Springs/Edwards Aquifer Conservation District, Comal Trinity GCD, Edwards Aquifer Authority, Kinney County GCD, Medina County GCD, Plum Creek Conservation District, and Uvalde County Underground Water Conservation District; and

WHEREAS, Chapter 36.108 of the Texas Water Code requires that the representatives of the GCDs in GMA 10 jointly conduct prescribed groundwater planning to establish relevant and non-relevant aquifers for joint planning purposes and to propose and adopt Desired Future Conditions (DFCs) for all relevant aquifers in the GMA for a fifty-year planning period; and

WHEREAS, the Texas Legislature has determined that no DFC for the Edwards Aquifer within the Edwards Aquifer Authority (EAA)'s jurisdiction is required to be established by the joint planning in GMA 10, and that the EAA is statutorily excluded from the requirement to participate as a voting member of the GMA for joint planning of other aquifers; and

WHEREAS, the District Representatives has further subdivided the Edwards Aquifer in GMA 10 on the basis of considerations prescribed in 36.108(d) and other relevant scientific and hydrogeological data to establish different DFCs, as authorized by Chapter 36.108(d-1), into the Western GMA Subdivision and the Northern GMA Subdivision and

WHEREAS, the District representative s of GMA 10 have identified the following as relevant aquifers for joint planning purposes:

1. Freshwater Edwards, Northern Subdivision
2. Saline Edwards, Northern Subdivision

3. Freshwater Edwards, Western Subdivision (relevant only in Kinney County)
4. Trinity (relevant downdip of its recharge zone)
5. Austin-Buda (relevant only in Uvalde County)
6. Leona Gravel (relevant only in Uvalde County)

WHEREAS, the members of the District Representatives for GMA 10 have:

- evaluated available scientific information concerning the hydrogeologic characteristics of the relevant aquifers,
- considered previous DFCs and the ability of the member GCDs to achieve their performance standards;
- conducted additional studies as needed to further assess the aquifer performance and impacts of groundwater production on other resources,
- evaluated the results of groundwater availability modeling by the TWDB of alternate groundwater management scenarios, and
- considered the nine factors for establishing DFCs that are stipulated in Chapter 36.108(d); and

WHEREAS, GMA 10 timely proposed DFCs for the relevant aquifers before the statutorily required date of May 1, 2021, and held public meetings in accordance with posting and notice requirements of State law to discuss the proposed DFCs and to receive input from stakeholders and the public on the proposed DFCs; and

WHEREAS, the District representatives intend to adopt DFCs for each of the six relevant aquifers, and one or more GCDs in GMA 10, as applicable, and intend to manage groundwater within each of the six relevant aquifers to achieve the DFCs; and

WHEREAS, the District Representatives have determined that the proposed DFCs for each relevant aquifer: 1) provide a balance between achieving the highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater and control of subsidence in the management area; and 2) provide for the reasonable long-term management of groundwater resources consistent with the management goals under Section 36.1071(a). :

NOW, THEREFORE, BE IT RESOLVED that the District Representatives of Groundwater Management Area 10 adopts the following Desired Future Conditions for the relevant aquifers in GMA 10:

1. Freshwater Edwards Aquifer in the Northern GMA Subdivision:
    a. Springflow at Barton Springs during average recharge conditions shall be no less than 49.7 cfs averaged over an 84 month (7-year) period; and

b. springflow of Barton Springs during extreme drought conditions, including those as severe as a recurrence of the 1950s drought of record, shall be no less than 6.5 cfs average on a monthly basis;

2. Saline Edwards Aquifer in the Northern GMA Subdivision:
   No more than 75 feet of regional average potentiometric surface drawdown due to pumping when compared to pre-development conditions;

3. Freshwater Edwards Aquifer in the Western GMA Subdivision:
   The water level in well 70-38-902 shall not fall below 1,184 ft mean sea level;

4. Trinity Aquifer, in the hydrologically confined zone downdip of the Trinity outcrop:
   a. Outside of Uvalde and Bexar Counties: Average regional well drawdown not exceeding 25 feet during average recharge conditions (including exempt and non-exempt use)
   b. In Uvalde County: No (zero) regional well drawdown (including exempt and non-exempt use)
   c. In Bexar County: Non-relevant for joint planning purposes
   d. In Plum Creek GCD: Non-relevant for joint planning purposes

5. Austin-Buda Limestone Aquifer(s), relevant in Uvalde County only:
   a. Buda Limestone: No drawdown (including exempt and non-exempt use)
   b. Austin Chalk: No drawdown (including exempt and non-exempt use)

6. Leona Gravel Aquifer, relevant in Uvalde County only:
   No drawdown (including exempt and non-exempt use)

The motion to approve the resolution passed, with 6 ayes, and 0 nays.

PASSED AND APPROVED THIS THE 26th DAY OF October, 2021:

Michael Redman, Chair
GMA 10 Joint Planning Committee

ATTEST:

Voting Member,
GMA 10 Joint Planning Committee

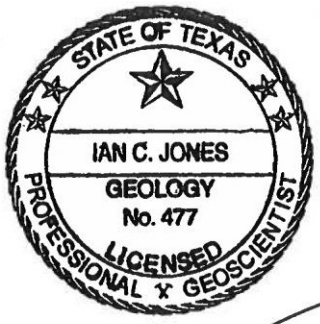
APPENDIX F

GAM Run 22-012:

Comal Trinity Groundwater Conservation District Management Plan

GAM ·RUN 22-012: COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN

Nick Lamkey, GIT and Ian Jones, Ph.D., P.G. Texas Water Development Board
Groundwater Division Groundwater Modeling Department 512-475-1788 / 512-463-6641
October 14, 2022



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GAM RUN 22-012: COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN

Nick Lamkey, GIT and Ian Jones, Ph.D., P.G. Texas Water Development Board
Groundwater Division Groundwater Modeling Department 512-475-1788 / 512-463-6641
October 14, 2022

EXECUTIVE SUMMARY:

Texas State Water Code, Section 36.1071, Subsection (h) (Texas Water Code, 2011), 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 Comal Trinity 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 which 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 Comal Trinity Groundwater Conservation District should be adopted by the district on or before January 25, 2023, and submitted to the executive administrator of the TWDB on or before February 24, 2023. The current management plan for the Comal Trinity Groundwater Conservation District expires on April 25, 2023.

We used the groundwater availability model for the Hill Country portion of the Trinity Aquifer (Jones and others, 2011), hereafter called the Southern portion of the Trinity Aquifer, to estimate the management plan information for the aquifers within the Comal Trinity Groundwater Conservation District. The Edwards (Balcones Fault Zone) Aquifer occurs within the boundaries of Comal Trinity Groundwater Conservation District but was excluded from this report because this district does not have jurisdiction over that aquifer. Additionally, the portion of the Trinity Aquifer System that underlies the Edwards (Balcones Fault Zone) Aquifer was not included in the groundwater availability model on the basis that it is likely that very little flow occurs between the modeled Southern portion of the Trinity Aquifer and the Southern portion of the Trinity Aquifer underlying the Edwards (Balcones Fault Zone) Aquifer (Jones and others, 2011).

This report replaces the results of GAM Run 16-022 (Wade, 2016). We performed routine updates to the spatial grid file used to define county, groundwater conservation district, and aquifer boundaries, which can impact the calculated water budget values. Additionally, the approach used for analyzing model results is reviewed during each update and may have been refined to better delineate groundwater flows. Table 1 summarizes the groundwater availability model data required by statute. Figure 1 shows the area of the model from which the values in Table 1 were extracted. Figure 2 provides a generalized diagram of the groundwater flow components provided in Table 1. If, after review of the figures, the Comal Trinity 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 groundwater availability model mentioned above was used to estimate information for the Comal Trinity Groundwater Conservation District management plan.
Water budgets were extracted for the historical model period for the Southern portion of the Trinity Aquifer (1981-1997) 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 the flow between aquifers within the district are summarized in this report.

PARAMETERS AND ASSUMPTIONS:

Trinity Aquifer

- We used version 2.01 of the groundwater availability model for the Southern portion of the Trinity Aquifer. See Jones and others (2011) for assumptions and limitations of the groundwater availability model.
- The groundwater availability model includes four layers, representing (from top to bottom):
    1. The Edwards Group of the Edwards-Trinity (Plateau) Aquifer,
    2. the Upper Trinity hydrostratigraphic unit,
    3. the Middle Trinity hydrostratigraphic unit, and
    4. the Lower Trinity hydrostratigraphic unit.
- We determined the overall water budget for the outcrop area of the Southern portion of the Trinity Aquifer (Layers 2 through 4 collectively) within Comal County Groundwater Conservation District. Layer one is not present in the district.
- The General-Head (GHB) package of MODFLOW was used to represent flow across the Balcones Fault Zone to capture interaction between the outcrop area of the Trinity Aquifer with the Edwards (Balcones Fault Zone) Aquifer and the deep Trinity Aquifer units located below the Edwards (Balcones Fault Zone) Aquifer. This flow is summarized in Table 1 as the estimated average net flow "From the Trinity Aquifer to the Edwards (Balcones Fault Zone) Aquifer and the deep Trinity Aquifer."
- Water budgets were estimated by averaging over the period 1981 to 1997 (stress periods 2 through 18).
- Only the outcrop area of the Southern portion of the Trinity Aquifer was modeled. The down-dip extent that underlies the Edwards (Balcones Fault Zone) Aquifer is not modeled.
- The model was run using MODFLOW-96 (Harbaugh and McDonald, 1996).

RESULTS:

A groundwater budget summarizes the amount of water entering and leaving the aquifer according to the groundwater availability model. Selected groundwater budget components listed below were extracted from the groundwater availability model results for the Southern portion of the Trinity Aquifer located within the Comal Trinity Groundwater Conservation District and averaged over the historical calibration period, as shown in Table 1.

1. Precipitation recharge—the 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 Table 1. 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 SOUTHERN PORTION OF THE TRINITY AQUIFER THAT IS NEEDED FOR THE COMAL TRINITY 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	Trinity Aquifer	42,457
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Trinity Aquifer	15,601
Estimated annual volume of flow into the district within each aquifer in the district	Trinity Aquifer	38,106
Estimated annual volume of flow out of the district within each aquifer in the district	Trinity Aquifer	28,422
Estimated net annual volume of flow between each aquifer in the district	From the Trinity Aquifer to the Edwards (Balcones Fault Zone) Aquifer and deep Trinity Aquifer	38,912*

* In the Comal Trinity Groundwater Conservation District, groundwater generally flows east from the Trinity Aquifer to the Edwards (Balcones Fault Zone) Aquifer and the confined parts of the Trinity Aquifer that underlie the Edwards (Balcones Fault Zone) Aquifer.

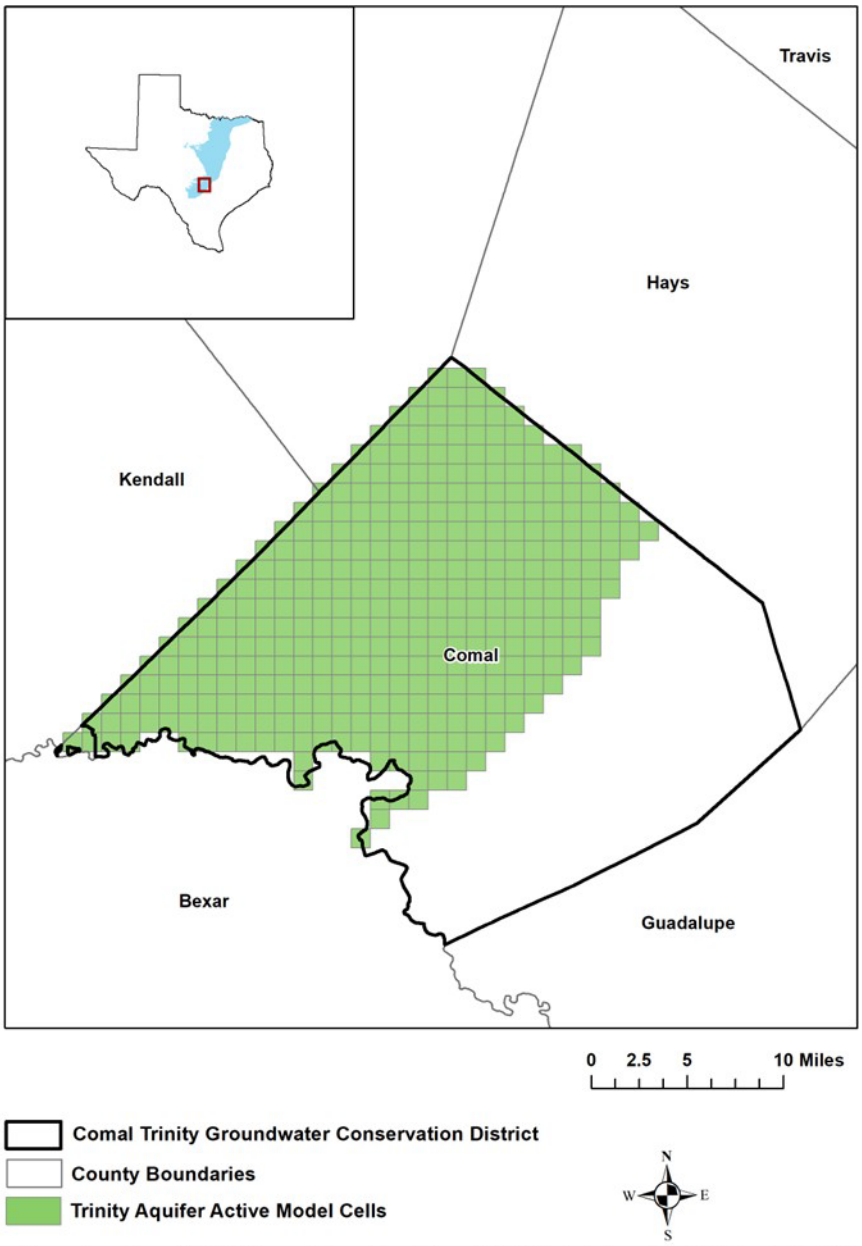
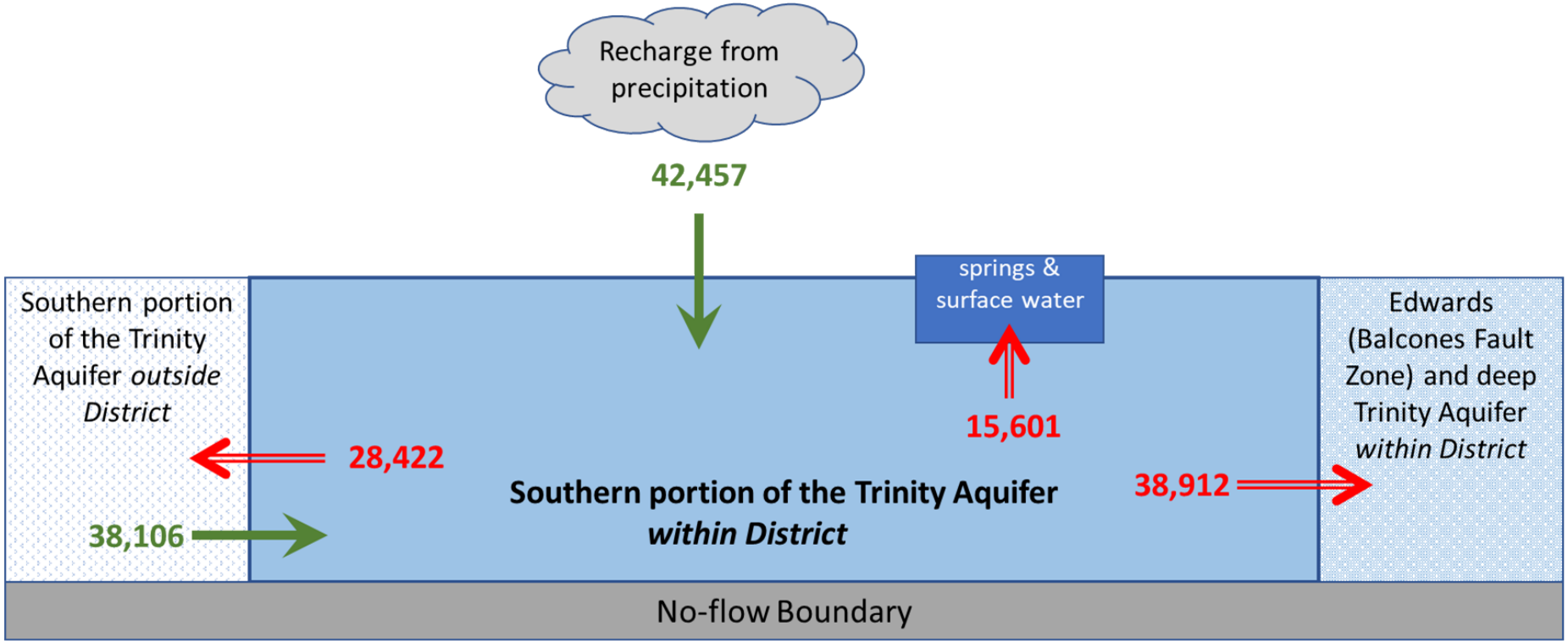


FIGURE 1: AREA OF THE GROUNDWATER AVAILABILITY MODEL FOR THE SOUTHERN PORTION OF THE TRINITY AQUIFER FROM WHICH THE INFORMATION IN TABLE 1 WAS EXTRACTED (THE SOUTHERN PORTION OF THE TRINITY AQUIFER EXTENT WITHIN THE DISTRICT BOUNDARY).



Caveat: This diagram only includes the water budget items provided in Table 1. A complete water budget would include additional inflows and outflows. If the District requires values for additional water budget items, please contact TWDB.

FIGURE 2: GENERALIZED DIAGRAM OF THE SUMMARIZED BUDGET INFORMATION FROM TABLE 1, REPRESENTING DIRECTIONS OF FLOW FOR THE SOUTHERN PORTION OF THE TRINITY AQUIFER WITHIN COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT. FLOW VALUES EXPRESSED IN ACRE-FEET PER YEAR.

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 historic groundwater flow conditions includes the assumptions about the location in the aquifer where historic 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 historic 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. 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:

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.

Jones, I. C., Anaya, R., and Wade, S. C., 2011, Groundwater availability model: Hill Country portion of the Trinity Aquifer of Texas: Texas Water Development Board Report 377, 165 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., 2016, GAM Run 16-022: Texas Water Development Board, GAM Run 16-022 Report, 10 p., https://www.twdb.texas.gov/groundwater/docs/GAMruns/GR16- 022.pdf.

APPENDIX G

Estimated Historical Groundwater Use and 2022 State Water Plan Datasets: Comal Trinity Groundwater Conservation District

Estimated Historical Groundwater Use And 2022 State Water Plan Datasets:

Comal Trinity Groundwater Conservation District

Texas Water Development Board
Groundwater Division
Groundwater Technical Assistance Section
stephen.allen@twdb.texas.gov
(512) 463-7317
March 3, 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 3/3/2023. 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 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: (data value * (land area of district in county / 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. Each district needs only "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.

COMAL COUNTY

99.4% (multiplier)

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2019	GW	15,587	483	5,985	0	359	100	22,514
	SW	12,864	4	0	0	480	236	13,584
2018	GW	13,651	539	5,226	0	394	100	19,910
	SW	9,145	3	0	0	324	235	9,707
2017	GW	12,183	523	6,003	0	330	97	19,136
	SW	9,525	3	0	0	491	225	10,244
2016	GW	11,863	379	6,947	0	351	78	19,618
	SW	8,930	28	0	0	497	183	9,638
2015	GW	12,141	2,863	3,263	0	231	78	18,576
	SW	9,077	29	0	0	294	181	9,581
2014	GW	11,401	4,812	5,553	0	158	73	21,997
	SW	9,481	37	0	0	30	168	9,716
2013	GW	10,695	2,572	4,548	0	224	69	18,108
	SW	8,384	34	0	0	26	162	8,606
2012	GW	12,252	3,419	3,095	0	283	64	19,113
	SW	8,630	60	0	0	199	148	9,037
2011	GW	14,669	4,506	2,625	0	422	77	22,299
	SW	8,831	59	0	0	177	180	9,247
2010	GW	10,366	3,297	6,092	0	220	72	20,047
	SW	12,315	61	3,626	0	236	166	16,404
2009	GW	12,022	362	9,515	0	521	85	22,505
	SW	8,090	729	3,496	0	0	197	12,512
2008	GW	12,599	435	10,273	0	0	80	23,387
	SW	8,890	745	3,907	0	170	184	13,896
2007	GW	7,776	470	6,601	0	250	83	15,180
	SW	7,600	736	539	0	164	192	9,231
2006	GW	8,885	528	6,611	0	730	68	16,822
	SW	8,047	734	539	0	0	157	9,477
2005	GW	8,594	491	6,590	0	60	73	15,808
	SW	7,647	727	539	0	448	169	9,530
2004	GW	6,434	417	7,646	0	152	151	14,800
	SW	7,675	723	539	0	427	101	9,465

Projected Surface Water Supplies
TWDB 2022 State Water Plan Data

COMAL COUNTY *99.4% (multiplier)* All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
L	Canyon Lake Water Service	Guadalupe	Canyon Lake/Reservoir	5,571	5,571	5,571	5,571	5,571	5,570
L	Canyon Lake Water Service	San Antonio	Canyon Lake/Reservoir	1,173	1,172	1,173	1,173	1,173	1,173
L	County-Other, Comal	Guadalupe	Canyon Lake/Reservoir	461	461	461	461	461	461
L	Crystal Clear WSC	Guadalupe	Canyon Lake/Reservoir	153	149	144	140	136	133
L	Fair Oaks Ranch	San Antonio	Canyon Lake/Reservoir	95	96	96	98	98	99
L	Green Valley SUD	Guadalupe	Canyon Lake/Reservoir	44	47	48	51	51	53
L	Guadalupe-Blanco River Authority	San Antonio	Canyon Lake/Reservoir	12	12	13	14	15	16
L	Guadalupe-Blanco River Authority	San Antonio	Guadalupe Run-of-River	33	35	37	39	42	45
L	Irrigation, Comal	Guadalupe	Canyon Lake/Reservoir	161	161	161	161	161	161
L	Irrigation, Comal	Guadalupe	Guadalupe Run-of-River	5	5	5	5	5	5
L	Livestock, Comal	Guadalupe	Guadalupe Livestock Local Supply	119	119	119	119	119	119
L	Livestock, Comal	San Antonio	San Antonio Livestock Local Supply	9	9	9	9	9	9
L	Manufacturing, Comal	Guadalupe	Canyon Lake/Reservoir	5	5	5	5	5	5
L	Manufacturing, Comal	Guadalupe	Guadalupe Run-of-River	99	99	99	99	99	99
L	New Braunfels	Guadalupe	Canyon Lake/Reservoir	8,072	8,124	8,158	8,188	8,207	8,218
L	New Braunfels	Guadalupe	Guadalupe Run-of-River	87	88	88	89	89	89
L	San Antonio Water System	Guadalupe	Canyon Lake/Reservoir	4	2	0	0	0	0
L	San Antonio Water System	Guadalupe	San Antonio Run-of-River	0	0	0	0	0	0
L	San Antonio Water System	San Antonio	Canyon Lake/Reservoir	4	2	0	0	0	0
L	San Antonio Water System	San Antonio	San Antonio Run-of-River	0	0	0	0	0	0
	Sum of Projected Surface Water Supplies (acre-feet)			**16,107**	**16,157**	**16,187**	**16,222**	**16,241**	**16,255**

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.

COMAL COUNTY

99.4% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
L	Canyon Lake Water Service	Guadalupe	5,059	6,536	8,166	9,827	11,433	12,951
L	Canyon Lake Water Service	San Antonio	1,036	1,290	1,594	1,920	2,249	2,545
L	Clear Water Estates Water System	Guadalupe	677	856	1,037	1,221	1,402	1,578
L	County-Other, Comal	Guadalupe	831	809	791	782	780	780
L	County-Other, Comal	San Antonio	353	343	336	332	331	331
L	Crystal Clear WSC	Guadalupe	279	313	348	386	426	465
L	Fair Oaks Ranch	San Antonio	107	126	142	152	170	188
L	Garden Ridge	Guadalupe	1,140	1,347	1,601	1,696	1,949	2,193
L	Garden Ridge	San Antonio	645	761	904	959	1,102	1,239
L	Green Valley SUD	Guadalupe	51	61	73	84	97	109
L	Guadalupe-Blanco River Authority	San Antonio	45	47	50	53	57	61
L	Irrigation, Comal	Guadalupe	383	383	383	383	383	383
L	Irrigation, Comal	San Antonio	43	43	43	43	43	43
L	KT Water Development	Guadalupe	432	542	655	770	885	995
L	Livestock, Comal	Guadalupe	219	219	219	219	219	219
L	Livestock, Comal	San Antonio	17	17	17	17	17	17
L	Manufacturing, Comal	Guadalupe	4,777	5,753	5,753	5,753	5,753	5,753
L	Mining, Comal	Guadalupe	8,206	9,538	10,821	11,940	13,342	14,913
L	Mining, Comal	San Antonio	342	398	451	498	556	621
L	New Braunfels	Guadalupe	16,019	20,103	24,012	28,179	32,251	36,240
L	San Antonio Water System	Guadalupe	128	141	152	165	177	189
L	San Antonio Water System	San Antonio	150	164	178	192	207	220
L	Schertz	Guadalupe	251	400	596	825	1,111	1,402
L	Schertz	San Antonio	6	10	15	21	28	35
L	Selma	San Antonio	3	4	5	6	6	7
L	Water Services	San Antonio	479	523	567	616	665	711
L	Wingert Water Systems	Guadalupe	283	359	436	436	436	436
	Sum of Projected Water Demands (acre-feet)		**41,961**	**51,086**	**59,345**	**67,475**	**76,075**	**84,624**

Projected Water Supply Needs
TWDB 2022 State Water Plan Data

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

COMAL COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
L	Canyon Lake Water Service	Guadalupe	7,019	5,575	3,955	2,291	675	-844
L	Canyon Lake Water Service	San Antonio	1,469	1,173	857	532	210	-87
L	Clear Water Estates Water System	Guadalupe	-627	-806	-987	-1,171	-1,352	-1,528
L	County-Other, Comal	Guadalupe	1,418	1,440	1,458	1,467	1,469	1,469
L	County-Other, Comal	San Antonio	1	-43	-52	-80	-119	-164
L	Crystal Clear WSC	Guadalupe	-5	37	-9	-57	-107	-154
L	Fair Oaks Ranch	San Antonio	19	1	-15	-22	-40	-57
L	Garden Ridge	Guadalupe	-586	-793	-1,047	-1,142	-1,395	-1,639
L	Garden Ridge	San Antonio	-332	-448	-591	-646	-789	-926
L	Green Valley SUD	Guadalupe	107	105	98	97	86	79
L	Guadalupe-Blanco River Authority	San Antonio	0	0	0	0	0	0
L	Irrigation, Comal	Guadalupe	244	244	244	244	244	244
L	Irrigation, Comal	San Antonio	-33	-33	-33	-33	-33	-33
L	KT Water Development	Guadalupe	-26	-136	-249	-364	-479	-589
L	Livestock, Comal	Guadalupe	0	0	0	0	0	0
L	Livestock, Comal	San Antonio	0	0	0	0	0	0
L	Manufacturing, Comal	Guadalupe	-2,786	-3,768	-3,768	-3,768	-3,768	-3,768
L	Mining, Comal	Guadalupe	-3,861	-5,201	-6,491	-7,617	-8,849	-8,849
L	Mining, Comal	San Antonio	0	0	0	0	0	0
L	New Braunfels	Guadalupe	144	-3,812	-7,678	-11,786	-15,821	-19,787
L	San Antonio Water System	Guadalupe	-9	-23	-36	-47	-58	-70
L	San Antonio Water System	San Antonio	-10	-26	-43	-55	-69	-82
L	Schertz	Guadalupe	8	8	-48	-213	-445	-714
L	Schertz	San Antonio	0	0	-1	-6	-12	-18
L	Selma	San Antonio	2	0	0	-1	-1	-1
L	Water Services	San Antonio	0	-224	-226	-241	-352	-457
L	Wingert Water Systems	Guadalupe	-32	-108	-185	-185	-185	-185
	Sum of Projected Water Supply Needs (acre-feet)		**-8,307**	**-15,421**	**-21,459**	**-27,434**	**-33,874**	**-39,952**

Projected Water Management Strategies
TWDB 2022 State Water Plan Data

COMAL COUNTY

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
Canyon Lake Water Service, Guadalupe (L)							
GBRA - MBWSP - Surface Water w/ASR	Carrizo-Wilcox Aquifer ASR [Gonzales]	0	0	0	0	0	145
Municipal Water Conservation	DEMAND REDUCTION [Comal]	0	0	0	75	318	699
		0	**0**	**0**	**75**	**318**	**844**
Canyon Lake Water Service, San Antonio (L)							
GBRA - MBWSP - Surface Water w/ASR	Carrizo-Wilcox Aquifer ASR [Gonzales]	0	0	0	0	0	29
Municipal Water Conservation	DEMAND REDUCTION [Comal]	0	0	0	14	62	60
		0	**0**	**0**	**14**	**62**	**89**
Clear Water Estates Water System, Guadalupe (L)							
Drought Management - Clear Water Estates Water System	DEMAND REDUCTION [Comal]	4	0	0	0	0	0
Local Trinity Aquifer Development	Trinity Aquifer [Comal]	627	806	987	1,171	1,352	1,528
Municipal Water Conservation	DEMAND REDUCTION [Comal]	54	142	253	386	534	695
		685	**948**	**1,240**	**1,557**	**1,886**	**2,223**
County-Other, Comal, Guadalupe (L)							
Municipal Water Conservation	DEMAND REDUCTION [Comal]	82	185	208	272	365	471
		82	**185**	**208**	**272**	**365**	**471**
County-Other, Comal, San Antonio (L)							
Municipal Water Conservation	DEMAND REDUCTION [Comal]	35	79	88	116	155	200
		35	**79**	**88**	**116**	**155**	**200**
Crystal Clear WSC, Guadalupe (L)							
ARWA - Phase 2	Carrizo-Wilcox Aquifer [Caldwell]	0	0	391	380	369	358
ARWA - Phase 3	Direct Reuse [Hays]	0	0	0	0	98	95
ARWA Shared Project (Phase 1)	Carrizo-Wilcox Aquifer [Caldwell]	296	288	279	271	263	255
Drought Management - Crystal Clear WSC	DEMAND REDUCTION [Comal]	11	0	0	0	0	0

Municipal Water Conservation	DEMAND REDUCTION [Comal]	0	0	0	0	0	8
		307	**288**	**670**	**651**	**730**	**716**
Fair Oaks Ranch, San Antonio (L)							
Municipal Water Conservation	DEMAND REDUCTION [Comal]	6	17	31	44	61	76
Reuse - Fair Oaks Ranch Non-Potable Reuse	Direct Reuse [Bexar]	0	35	35	36	36	36
		6	**52**	**66**	**80**	**97**	**112**
Garden Ridge, Guadalupe (L)							
Drought Management - Garden Ridge	DEMAND REDUCTION [Comal]	30	0	0	0	0	0
Local Trinity Aquifer Development	Trinity Aquifer [Comal]	586	793	1,047	1,142	1,395	1,639
Municipal Water Conservation	DEMAND REDUCTION [Comal]	69	192	353	499	704	926
		685	**985**	**1,400**	**1,641**	**2,099**	**2,565**
Garden Ridge, San Antonio (L)							
Drought Management - Garden Ridge	DEMAND REDUCTION [Comal]	17	0	0	0	0	0
Local Trinity Aquifer Development	Trinity Aquifer [Comal]	332	448	591	646	789	926
Municipal Water Conservation	DEMAND REDUCTION [Comal]	39	108	200	282	398	523
		388	**556**	**791**	**928**	**1,187**	**1,449**
Green Valley SUD, Guadalupe (L)							
ARWA - Phase 2	Carrizo-Wilcox Aquifer [Caldwell]	0	0	25	25	24	24
ARWA - Phase 3	Direct Reuse [Hays]	0	0	0	0	7	6
ARWA Shared Project (Phase 1)	Carrizo-Wilcox Aquifer [Caldwell]	18	17	18	18	17	17
		18	**17**	**43**	**43**	**48**	**47**
Guadalupe-Blanco River Authority, San Antonio (L)							
FE - GBRA Western Canyon Expansion	Canyon Lake/Reservoir [Reservoir]	0	0	0	0	236	214
FE - Hays County Pipeline Project	Canyon Lake/Reservoir [Reservoir]	0	299	704	595	0	0
GBRA - MBWSP - Surface Water w/ASR	Carrizo-Wilcox Aquifer ASR [Gonzales]	0	2,542	2,488	2,390	2,013	1,169
GBRA Lower Basin Storage Project	GBRA Lower Basin Off-Channel Lake/Reservoir [Reservoir]	8,160	8,067	8,103	8,048	8,022	7,999
		8,160	**10,908**	**11,295**	**11,033**	**10,271**	**9,382**
KT Water Development, Guadalupe (L)							
Drought Management - KT Water Development	DEMAND REDUCTION [Comal]	7	0	0	0	0	0
Local Trinity Aquifer Development	Trinity Aquifer [Comal]	161	161	322	483	483	644

Municipal Water Conservation	DEMAND REDUCTION [Comal]	28	78	146	228	321	421
		196	**239**	**468**	**711**	**804**	**1,065**
Manufacturing, Comal, Guadalupe (L)							
ARWA Shared Project (Phase 1)	Carrizo-Wilcox Aquifer [Caldwell]	2,786	0	0	0	0	0
GBRA - MBWSP - Surface Water w/ASR	Carrizo-Wilcox Aquifer ASR [Gonzales]	0	3,783	3,783	3,783	3,783	3,783
		2,786	**3,783**	**3,783**	**3,783**	**3,783**	**3,783**
Mining, Comal, Guadalupe (L)							
Local Trinity Aquifer Development	Trinity Aquifer [Comal]	3,866	5,210	6,496	7,623	8,849	8,849
		3,866	**5,210**	**6,496**	**7,623**	**8,849**	**8,849**
Mining, Comal, San Antonio (L)							
Local Trinity Aquifer Development	Trinity Aquifer [Comal]	250	356	522	605	357	336
		250	**356**	**522**	**605**	**357**	**336**
New Braunfels, Guadalupe (L)							
FE - NBU Seguin Interconnect	Carrizo-Wilcox Aquifer [Gonzales]	2,154	2,178	2,180	2,188	2,193	2,196
FE - NBU South WTP Expansion	Guadalupe Run-of-River [Comal]	0	1	1	1	1	1
GBRA Shared Project (Phase 1)	Carrizo-Wilcox Aquifer [Caldwell]	3,420	3,457	3,461	3,475	3,481	3,486
GBRA Shared Project (Phase 1)	Carrizo-Wilcox Aquifer [Gonzales]	3,474	3,511	3,515	3,528	3,535	3,540
Municipal Water Conservation	DEMAND REDUCTION [Comal]	571	1,951	3,820	5,089	6,287	7,581
NBU - ASR	Trinity and/or Brackish Edwards Aquifer ASR [Comal]	9,323	9,423	9,433	9,469	9,488	9,501
NBU - Trinity Development	Trinity Aquifer [Comal]	0	2,927	2,930	2,941	2,947	2,951
		18,942	**23,448**	**25,340**	**26,691**	**27,932**	**29,256**
San Antonio Water System, Guadalupe (L)							
Drought Management - SAWS	DEMAND REDUCTION [Comal]	6	17	24	26	28	30
FE - SAWS ASR Treatment Plant Expansion	Carrizo-Aquifer ASR [Bexar]	0	18	18	18	18	18
FE - SAWS Western Integration Pipeline	Canyon Lake/Reservoir [Reservoir]	0	2	2	2	2	2
Municipal Water Conservation	DEMAND REDUCTION [Comal]	13	28	40	49	55	62
Reuse - SAWS - Reuse Water Programs	Direct Reuse [Bexar]	0	3	3	8	13	21
SAWS - Expanded Brackish Wilcox Project	Carrizo-Wilcox Aquifer [Wilson]	0	0	11	11	33	33
SAWS - Expanded Brackish Wilcox Project (GW Conversion)	Carrizo-Wilcox Aquifer [Wilson]	0	0	0	0	5	5
SAWS - Expanded Local Carrizo	Carrizo-Wilcox Aquifer [Bexar]	0	0	11	11	11	11

SAWS Advanced Meter Infrastructure	DEMAND REDUCTION [Comal]	0	0	0	0	0	0
		19	**68**	**109**	**125**	**165**	**182**
San Antonio Water System, San Antonio (L)							
Drought Management - SAWS	DEMAND REDUCTION [Comal]	7	20	28	31	33	35
FE - SAWS ASR Treatment Plant Expansion	Carrizo-Aquifer ASR [Bexar]	0	21	21	21	21	21
FE - SAWS Western Integration Pipeline	Canyon Lake/Reservoir [Reservoir]	0	2	2	2	2	2
Municipal Water Conservation	DEMAND REDUCTION [Comal]	15	32	46	56	64	72
Reuse - SAWS - Reuse Water Programs	Direct Reuse [Bexar]	0	3	3	9	16	25
SAWS - Expanded Brackish Wilcox Project	Carrizo-Wilcox Aquifer [Wilson]	0	0	13	13	39	39
SAWS - Expanded Brackish Wilcox Project (GW Conversion)	Carrizo-Wilcox Aquifer [Wilson]	0	0	0	0	5	5
SAWS - Expanded Local Carrizo	Carrizo-Wilcox Aquifer [Bexar]	0	0	13	13	13	13
SAWS Advanced Meter Infrastructure	DEMAND REDUCTION [Comal]	0	0	0	0	0	0
		22	**78**	**126**	**145**	**193**	**212**
Schertz, Guadalupe (L)							
CVLGC Carrizo Project	Carrizo-Wilcox Aquifer [Gonzales]	0	86	108	129	152	170
CVLGC Carrizo Project	Carrizo-Wilcox Aquifer [Wilson]	0	129	162	194	207	232
CVLGC Carrizo Project (GW Conversion)	Carrizo-Wilcox Aquifer [Wilson]	0	0	0	0	21	23
Municipal Water Conservation	DEMAND REDUCTION [Comal]	9	16	34	63	108	168
SSLGC Expanded Brackish Wilcox Groundwater	Carrizo-Wilcox Aquifer [Gonzales]	0	0	135	162	190	213
SSLGC Expanded Carrizo Project	Carrizo-Wilcox Aquifer [Guadalupe]	107	129	162	194	228	255
		116	**360**	**601**	**742**	**906**	**1,061**
Schertz, San Antonio (L)							
CVLGC Carrizo Project	Carrizo-Wilcox Aquifer [Gonzales]	0	2	3	3	4	4
CVLGC Carrizo Project	Carrizo-Wilcox Aquifer [Wilson]	0	3	4	5	5	6
CVLGC Carrizo Project (GW Conversion)	Carrizo-Wilcox Aquifer [Wilson]	0	0	0	0	1	1
Municipal Water Conservation	DEMAND REDUCTION [Comal]	0	0	1	2	3	4
SSLGC Expanded Brackish Wilcox Groundwater	Carrizo-Wilcox Aquifer [Gonzales]	0	0	3	4	5	5
SSLGC Expanded Carrizo Project	Carrizo-Wilcox Aquifer [Guadalupe]	3	3	4	5	6	6
		3	**8**	**15**	**19**	**24**	**26**

Selma, San Antonio (L)							
Municipal Water Conservation	DEMAND REDUCTION [Comal]	0	0	0	1	1	1
		0	**0**	**0**	**1**	**1**	**1**
Water Services, San Antonio (L)							
Local Trinity Aquifer Development	Trinity Aquifer [Bexar]	0	218	217	218	320	403
Municipal Water Conservation	DEMAND REDUCTION [Comal]	10	11	13	25	42	61
		10	**229**	**230**	**243**	**362**	**464**
Wingert Water Systems, Guadalupe (L)							
Drought Management - Wingert Water Systems	DEMAND REDUCTION [Comal]	10	0	0	0	0	0
Local Trinity Aquifer Development	Trinity Aquifer [Comal]	296	296	296	296	296	296
Municipal Water Conservation	DEMAND REDUCTION [Comal]	5	40	86	102	111	119
		311	**336**	**382**	**398**	**407**	**415**
Sum of Projected Water Management Strategies (acre-feet)		**36,887**	**48,133**	**53,873**	**57,496**	**61,001**	**63,748**

APPENDIX H

CTGCD - Resolution #20230313-01 Adoption of Groundwater Management Plan for Comal Trinity Groundwater Conservation District In Accordance With Texas Water Code Section 36.1071 (March 13, 2023)

AND

Posted Public Hearing Agenda For The Purpose of Considering Adopting The Comal Trinity Groundwater Conservation District Groundwater Management Plan

STATE OF TEXAS §
§
COUNTY OF COMAL §

RESOLUTION #20230313-01

COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT

ADOPTION OF GROUNDWATER MANAGEMENT PLAN FOR COMAL TRINITY GROUNDWATEER CONSERVATION DISTRICT IN ACCORDANCE WITH TEXAS WATER CODE SECTION 36.1071

WHEREAS, the Comal Trinity Groundwater Conservation District ("the District") is a groundwater conservation district created in accordance with and subject to Chapter 36, Texas Water Code and;

WHEREAS, the District is required under Chapter 36.1071, Texas Water Code to develop and implement a Groundwater Management Plan that addresses the management goals as set forth under Chapter 36.1071;

WHEREAS, the District has a Groundwater Management Plan ("the Plan") approved by the Texas Water Development Board ("TWDB") on April 25, 2018, and has completed a review and revisions to the Plan as required under Chapter 36.1072(e);

WHEREAS, the District has duly posted notice of public hearing of adoption of the Plan both at the administrative office and on the District web page as required under Section 551.054;

WHEREAS, Chapter 36.1072(e) requires the District to provide the readopted plan to the executive administrator of the TWDB not later than the 60th day after the date on which the plan was readopted;

NOW THEREFORE BE IT RESOLVED that the Board of Directors of the District does hereby re-adopt, with revisions, the Comal Trinity Groundwater Conservation District Groundwater Management Plan.

PASSED AND APPROVED THIS 13TH DAY OF MARCH 2023

5 AYES ⊖ NAYES — ABSTENTIONS

X _____
Larry Hull
President

X _____
Dr. Larry Sunn
Secretary

This notice was properly posted outside the District office and on the District website on March 8, 2023 at 3:00 p.m. in accordance with TWC Section 551.054.

AGENDA
COMAL TRINITY GROUNDWATER CONSERVATION DISTRICT
Monday March 13, 2023, 6:00 p.m.
9850 FM 311 Spring Branch, Texas 78070
(Curtis W. Bremer Emergency Services #4 Building 6)

NOTICE is hereby given that the Comal Trinity Groundwater Conservation District (CTGCD) Board of Directors will hold a Special Meeting to conduct a public hearing for the purpose of considering and adopting the Comal Trinity Groundwater Conservations District Groundwater Management Plan on Monday, March 13, 2023, 6:00 p.m. This meeting is open to the public, subject to the Open Meetings Law of the State of Texas, and as required by law, notice and the final plan is hereby posted, providing time, place, date, and agenda thereof.

Action Agenda:

1. Call to order;
2. Declare a quorum;
3. Pledge of Allegiance;
4. Introductions;

Workshop Agenda:

1. Public comments: Each persons' comments will be limited to three (3) minutes. In accordance with the Texas Attorney General's opinion, any public comment that is made on an item not on the published agenda will only be heard by the Board of Directors and, no formal action, discussion, deliberation nor comment will be made by the Board of Directors;
2. Discussion by CTGCD Staff and Board members on items of community interest;

Action Agenda Continued:

5. Public Hearing on the Comal Trinity Groundwater Conservation District's Groundwater Management Plan (Draft Plan may be reviewed at https://www.comaltrinitygcd.com/management-plan);
6. Discuss and Consider the adoption of the Comal Trinity Groundwater Conservation District Groundwater Management Plan and submission of the adopted plan to the Texas Water Development Board for approval;
7. Discuss and Consider adoption of the Comal Trinity Groundwater Conservation District Resolution 20230313-01, "Adoption of Comal Trinity Groundwater Conservation District Groundwater Management Plan".
8. Adjourn.

The Comal Trinity Groundwater Conservation District is committed to compliance with the Americans with Disabilities Act (ADA). Reasonable accommodations and equal opportunity for effective communications will be provided upon request. Please contact the District Representative at 830.885.2130 at least 24 hours in advance if accommodation is needed.

The Board may close the Meeting and hold an Executive Session pursuant to the Texas Open Meetings Act, Government Code, which permits closed meetings pursuant to Section 551.071 for purposes of consulting with its attorneys, Section 551.072 - deliberating about real property, Section 551.073 - deliberating about gifts and donations, Section 551.074 -deliberating about personnel matters and Section 551.076 – deliberating about security devices to discuss matters as Executive Session matters in this agenda.

This Agenda is posted as required under Tex. Gov. Code Section 551.041. I, H.L. Saur , hereby certify that I posted this Agenda and Public Notice of this meeting on the Comal Trinity Groundwater Conservation District's website at 3:00 p.m. on March 8, 2023 which is at least 72 hours before the scheduled time of the meeting.

H.L. Saur, General Manager H. L. Saur

APPENDIX I

TEXAS WATER DEVELOPMENT BOARD Letter of Administratively Complete Groundwater Management Plan, May 5, 2023

Texas Water Development Board

P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

May 5, 2023

Mr. H. L. Saur
General Manager
Comal Trinity Groundwater Conservation District
P.O. Box 664
Spring Branch, Texas 78070

Dear Mr. Saur,

The purpose of this letter is to notify you that the groundwater management plan for the Comal Trinity Conservation District required by Texas Water Code § 36.1072 is administratively complete in accordance with Texas Water Code § 36.1071(a) and (e). The policies, plans, and opinions in the groundwater management plan represent those of the District and not those of the Texas Water Development Board.

We received the groundwater management plan for the administrative completeness review on March 14, 2023, and it was approved on May 5, 2023. Included with this letter is your District Groundwater Management Plan Certificate of Administrative Completeness.

Thank you for participating in this effort and contributing to the future of groundwater conservation and management in the state of Texas. Your next five-year management plan is due on May 5, 2028.

If you have any questions or concerns, please contact Stephen Allen of our Groundwater Technical Assistance Department at 512-463-7317 or stephen.allen@twdb.texas.gov.

Sincerely,

Jeff Walker Digitally signed by Jeff Walker Date: 2023.06.01 09:19:07 -05'00'

Jeff Walker
Executive Administrator

Enclosure

c w/o enc: Stephen Allen, P.G., Groundwater
Robert Bradley, P.G., Groundwater
Abiy Berehe, P.G., Texas Commission on Environmental Quality
Peggy Hunka, P.G., Texas Commission on Environmental Quality