COMAL TRINITY
GROUNDWATER CONSERVATION DISTRICT

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This Annual Report for 2024 provides performance and progress in achieving management goals of the Comal Trinity Groundwater Conservation District (CTGCD or District). This report was prepared by the General Manager and staff and presented to the CTGCD Board of Directors and the public at the first board meeting following the end of the year 2024. The first CTGCD Management Plan was approved by the Texas Water Development Board (TWDB) on April 25, 2018, with a revised Management Plan approved by the TWDB on May 5, 2023.

DISTRICT MISSION

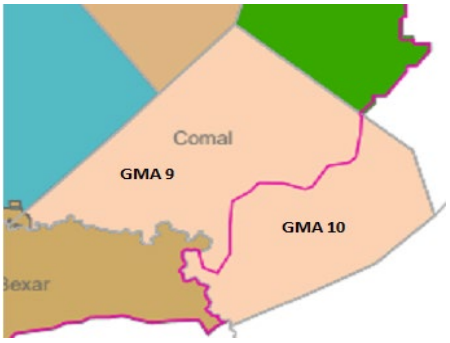
The Comal Trinity Groundwater Conservation District was created under Chapter 36 of the Texas Water Code (TWC) for the purpose of conserving, preserving, recharging, protecting, and preventing waste of groundwater from the Trinity Aquifer and its subdivisions within Comal County. The District conducts administrative and technical activities and programs to achieve these purposes. The District uses 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.

GUIDING PRINCIPLES

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

GENERAL DESCRIPTION OF THE DISTRICT

The Comal Trinity Groundwater Conservation District resides within the majority of Comal County, excluding a small portion of territory included within the boundaries of the Trinity Glen Rose Groundwater Conservation District. The District covers 559 square miles and resides in two Groundwater Management Areas (GMA-9 and GMA-10) with an estimated population of 203,107 with a growth rate of 4.73% in 2024 according to the US Census Bureau estimate (2025 estimate not available at the time of this report). US Census data also shows that Comal County has realized an 85.81% growth between 2010 and 2024.



REPORT ON 2024 GROUNDWATER MANAGEMENT PLAN GOALS AND ACHIEVEMENTS

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

MANAGEMENT PLAN GOAL 1 – STRATEGIES FOR EFFICIENT USE OF GROUNDWATER

The District continues its program of issuing well drilling permits. While the District does not issue permits for water usage allocations, it maintains a permitting and registration program for all new water wells drilled within the District's jurisdiction. These activities ensure management of water well use to include spacing requirements, Non-Exempt well registration, and water usage reporting requirements. The table below summarizes the well drilling and plugging activities in 2024.[1]

Well Applications By Type

Type of Application	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total for Year	GMA 9	GMA10
a) Domestic	18	26	20	26	**92**	77	15
a)L Livestock	0	1	1	1	**3**	3	0
a)I Domestic Landscape Irrigation	4	1	2	2	**9**	9	0
b) < 25,000 GPD	1	2	2	0	**5**	3	2
c) > 25,000 GPD	0	1	2	3	**6**	2	4
d) Plugging	3	4	1	7	**15**	11	4
e) Test Bore	0	0	0	0	**0**		
f) Completion of test < 25,000 GPD	0	0	0	0	**0**		
g) Completion of test > 25,000 GPD	0	0	0	0	**0**		
Geothermal	0	0	0	0	**0**		
Monitor well	0	0	0	0	**0**		

Water usage data collection for identified non-exempt wells began January 1, 2016. Monitoring of acre-feet of water used as compared to the two GMA's Modeled Available Groundwater (MAG) occurs throughout the year and is reported to the Board on a quarterly and annual basis.[2]

[1] CTGCD Management Plan Goal 1.A
[2] CTGCD Management Plan Goal 1.B

		GMA-9 Reported	GMA-9 MAG Availability	GMA-10 Reported	GMA-10 MAG Availability
1Q2024			9,383		33,554
	Gallons:	331,387,590		563,804,513	
	Acre-ft:	1,017	8,366	1,730	31,824
2Q2024					
	Gallons:	381,988,611		604,159,420	
	Acre-ft:	1,172	7,194	1,854	29,970
3Q2024					
	Gallons:	378,103,716		740,417,333	
	Acre-ft:	1,160	6,033	2,272	27,697
4Q2024					
	Gallons:	339,775,146		694,936,285	
	Acre-ft:	1,043	4,991	2,133	25,565
2024 Reported	Acre-ft:	4,392	53%	7,989	76%

Fees are collected per District rules and rates as defined in those rules. The complete rules are available at www.ComalTrinityGCD.com. The production income funds are administrative and operational activities of the District, and reserves are in place for potential capital improvement and District growth needs as determined by the Board of Directors.

Strategies to Control and Prevent Waste of Groundwater

Public outreach and education are a focus for CTGCD and, typically, board members or staff are active in attending and presenting materials and information at various events throughout the year. Pamphlets developed by the District (Appendix A) are distributed at each event and are always available in the CTGCD office for the public. There were 35 pamphlets picked up by members of the public. There was one public presentation by CTGCD representatives in 2024: CTGCD Assistant General Manager presented at the Canyon Lake Noon Lions Club (10/17/2024).[3] A big message in the presentation was an overview of CTGCD responsibilities with an emphasis on water conservation and protection of the Trinity Aquifer.

Strategies to Prevent and Control Subsidence

While the Management Plan includes a goal to prevent and control subsidence, this issue has not been identified by CTGCD in Comal County. Appendix B cites the latest study in support of the CTGCD assertion that this Management Plan goal is not currently relevant to the District.[4]

[3] CTGCD Management Plan Goal 2.A
[4] CTGCD Management Plan Goal 3.0

Strategies to Address conjunctive surface water management issues

Per the TWDB, "conjunctive use water management strategies combine multiple water sources, usually surface water and groundwater, to optimize the beneficial characteristics of each source, yielding additional firm water supplies." Within the District, GBRA and TWC formally SJWTX, Inc. are most involved in conjunctive water management and the District will attend any meetings called by either agency if the opportunity arises. Additionally, President Larry Hull attended the 10/22/2024 and the 11/7/ 2024 meetings of the South-Central Texas Regional Water Planning Area, Region L.[5]

In 2024, CTGCD representatives participated in multiple GMA Joint Planning meetings for both GMA-9 and GMA-10 (dates and discussion are recorded in quarterly meeting minutes). This year the meetings for both GMAs were focused primarily on Desired Future Conditions Joint Planning activities for the 2026 Explanatory Report to TWDB. This Explanatory Report considers spring flow and surface water in addition to groundwater.

An additional Management Objective set out in the Management Plan to monitor at least five District wells and report to the Board quarterly has been achieved. Reports of monitored wells and groundwater trends were presented to the Board at each quarterly meeting of the CTGCD Board (February 19th, May 20th, August 19th, and November 18th, 2024).[6] More details are provided in the section of this report titled "Addressing Desired Future Conditions".

Strategies to Address natural resource issues which impact the use and availability of groundwater, or which are impacted by using groundwater

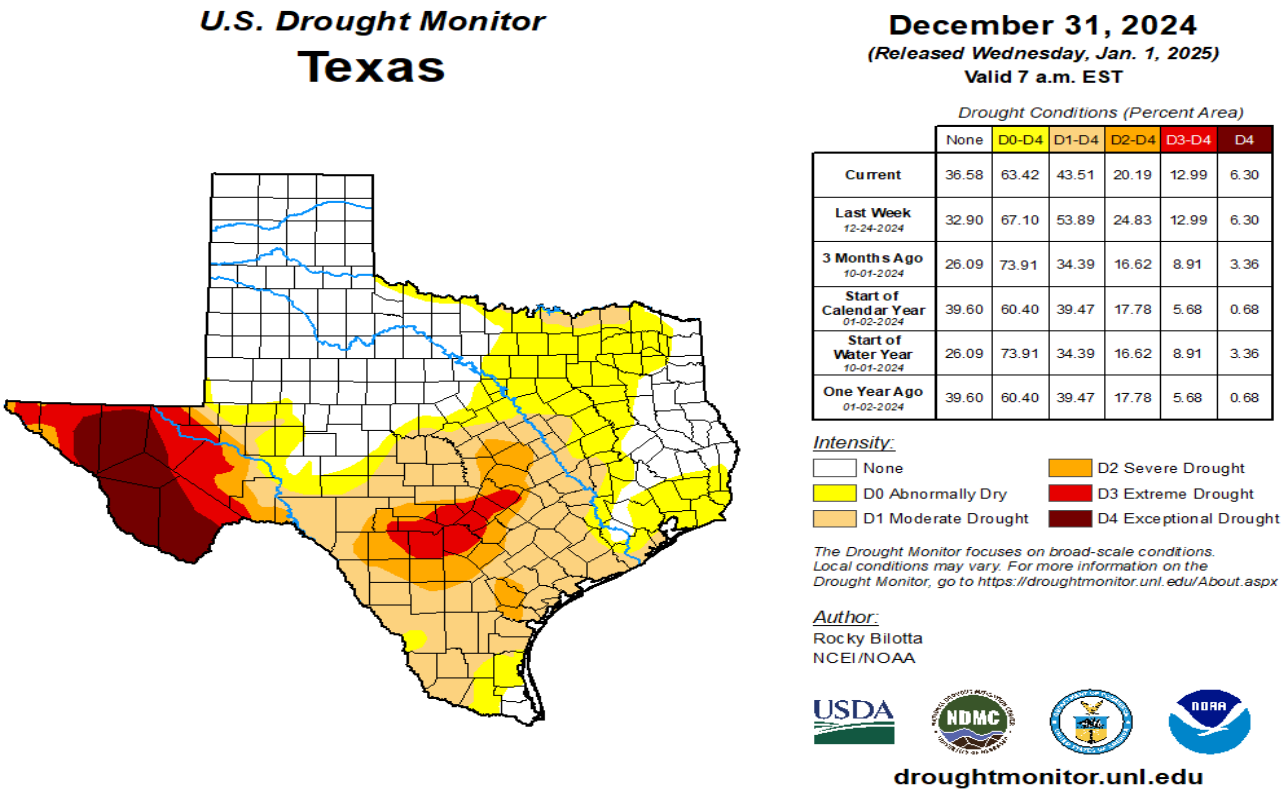
The District considers the greatest potential for natural resource issues which impact the use and availability of groundwater could arise from the use of water by Industrial/Mining operations. The District is home to several quarries (mining/industrial operations) and collects quarterly water usage information from them. This category is the second largest groundwater user type in the district, behind municipal users. In 2024, the reported groundwater usage by this group was 3,696.5 acre-feet (with 100% of reports received at the date of this report).[7]

In addition, the District maintains a strong program of identifying and gaining compliance with plugging of abandoned or compromised wells. This directly protects the quality and availability of groundwater by preventing contamination. In 2024, 13 wells were identified, and 15 were plugged.[8]

[5] CTGCD Management Plan Goal 4.A
[6] CTGCD Management Plan Goal 8.A
[7] CTGCD Management Plan Goal 5.A
[8] CTGCD Management Plan Goal 5.B

Strategies to Address Drought Conditions

The District monitored and collected data quarterly from the U.S. Drought Monitor (https://www.drought.gov/states/texas/county/Comal) and the information was reported to the Board at the quarterly board meetings.[9] Additionally, precipitation patterns as reported by the National Weather Service (https://water.weather.gov/precip/) were reported to the Board quarterly.[10] Dry conditions continued as 62% of the county began the year in Moderate Drought conditions, however by year-end nearly 100% of the county was in Extreme Drought conditions.



[9] CTGCD Management Plan Goal 6.A
[10] CTGCD Management Plan Goal 6.B

STRATEGIES TO ADDRESS GROUNDWATER CONSERVATION AND RAINWATER HARVESTING

The website maintained by CTGCD is an important source of information and includes links to groundwater conservation education on its Conservation page: https://www.comaltrinitygcd.com/conservation

Below[11] are the number of hits to the Rainwater Harvesting, Drought Information and Water Conservation on the District's website:

Page path 2024	Site sessions	Unique visitors
/	1,892	1,172
/rainwater-harvesting	262	208
/drought-information	188	158
/conservation	62	56

Rainwater harvesting is promoted strongly by the District, both in the pamphlet[12], news articles, and on the website. CTGCD representatives presented an informational workshop to the public regarding the water district and the importance of water conservation and actively continues educational efforts on behalf of CTGCD. In addition, Dr. Larry Sunn, retired Board member (7/31/2023), along with Dr. Stephen Grainger offer free consultation to county residents on rainwater catchment systems and education and were very active in performing site visits and presentations for community members and groups in 2024. Details of those visits are included in the quarterly board minutes.[13]

Additionally, in 2024, there were numerous articles written by Dr. Larry Sunn regarding rainwater harvesting and published locally in *The Front Porch News (11), Spring Branch Neighbors (11), Herald-Zeitung (1) and The Texas Gardener (1)*[14]

STRATEGIES TO ADDRESS RECHARGE ENHANCEMENT, BRUSH CONTROL, AND PRECIPITATION ENHANCEMENT

Recharge enhancement is a strategy to increase groundwater stores and the District was receptive to exploring these avenues, however, the General Manager reports that there have been no findings related to recharge enhancement in the District in 2024. Brush Control is one method of supporting recharge enhancement, and the District includes information on the pamphlets that are distributed at the events and locations previously mentioned. [15] The CTGCD Management Plan states that the precipitation enhancement goal is not applicable to the District as this objective is not cost effective at this time.[16]

ADDRESSING DESIRED FUTURE CONDITIONS (DFCS)

[11] CTGCD Management Plan Goal 2.A, 7.A
[12] CTGCD Management Plan Goal 7.C (35 distributed 2024)
[13] CTGCD Management Plan Goal 7.C
[14] CTGCD Management Plan Goal 2.A
[15] CTGCD Management Plan Goal 7.D
[16] CTGCD Management Plan Goal not applicable

The District Management Plan calls for water level monitoring in the Trinity Aquifer. The District has installed WellIntel monitoring equipment in twenty-one wells throughout the District. In 2024, twenty CTGCD wells and two TWDB wells were actively monitored the entire year. The General Manager provides a monitor well report at each quarterly board meeting and provides annual drawdown totals of the monitored wells to the Board and included, below.[17]

2024 12 Months In-Service Well Monitoring

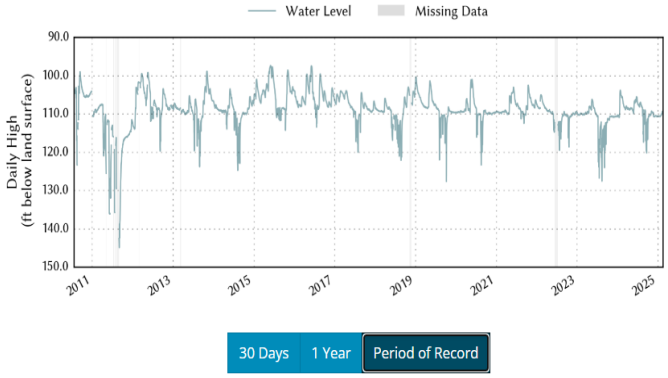
Name	Minimum Date	Maximum Date	# of Readings	Minimum Value	Maximum Value	Start Reading*	Last Reading	Difference
#1	1/1/2024	1/1/2025	13	205.80	210.32	210.15	210.32	-0.17
#2	1/1/2024	1/1/2025	13	96.93	97.38	97.38	96.93	0.45
#3	1/1/2024	1/1/2025	13	517.98	524.88	524.88	521.81	3.07
#5	1/1/2024	1/1/2025	7	340.85	344.44	344.13	340.85	3.28
#6	1/1/2024	1/1/2025	13	452.89	506.23	471.77	468.2	3.57
#8	1/1/2024	1/1/2025	13	393.76	407.65	400.57	407.65	-7.08
#9	1/1/2024	1/1/2025	12	300.59	303.70	302.13	303.7	-1.57
#10	1/1/2024	1/1/2025	13	322.65	326.64	323.28	324.4	-1.12
#11	1/1/2024	1/1/2025	13	362.18	363.01	362.87	362.18	0.69
#12	1/1/2024	1/1/2025	13	415.80	433.12	417.91	432.78	-14.87
#13	1/1/2024	1/1/2025	13	328.36	339.27	328.36	339.27	-10.91
#14	1/1/2024	1/1/2025	13	221.65	234.92	231.06	234.92	-3.86
#15	1/1/2024	1/1/2025	13	285.92	303.45	288.43	296.19	-7.76
#16	1/1/2024	1/1/2025	13	210.86	233.52	233.52	220.91	12.61
#17	1/1/2024	1/1/2025	13	154.59	155.55	155.55	154.85	0.7
#18	1/1/2024	1/1/2025	11	255.16	259.90	255.16	259.13	-3.97
#19	1/1/2024	1/1/2025	10	529.95	578.91	534.29	578.91	-44.62
#20	1/1/2024	1/1/2025	12	98.28	121.42	98.28	114.40	-16.12
#21	1/1/2024	1/1/2025	11	182.05	182.72	182.71	182.58	0.13
#22	1/1/2024	1/1/2025	10	420.42	424.91	420.42	422.48	-2.06
6807407	1/1/2024	1/1/2025	10	343.39	354.55	354.55	351.46	3.09
6815211	1/1/2024	1/1/2025	10	104.37	112.86	110.82	112.86	-2.04
							Average Change 2024	-4.03

* below ground level

[17] CTGCD Management Plan Goal 8.A

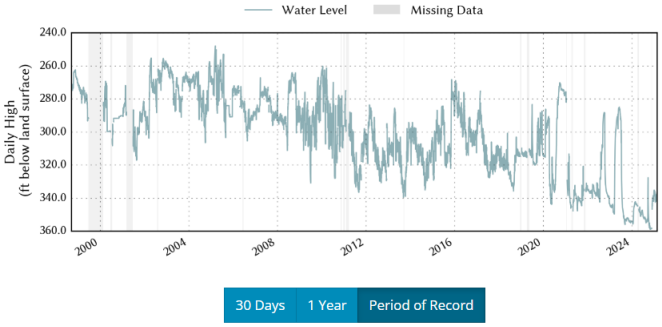
State Well Number 6815211 is *109.45* feet below land surface on 2025-02-16

Oldest record 7/20/2010 water level was 103.1 below surface. As of 1/16/2025, water was 110.7 below land surface, representing decrease of 7.6 feet.



State Well Number 6807407 is *336.92* feet below land surface on 2025-02-16

On 12/30/2008 water level was 291.8 below surface. As of 1/16/2025, water level was 338.6 below, representing a drop of 46.8 feet.



The Desired Future Condition (DFC) for the Trinity Aquifer Modeled Available Groundwater (MAG) in GMA 9 in 2023 was determined by a specific model run and scenario—*MAG for the Trinity Aquifer, GMA 9, for CTGCD (in ac-ft) GAM Run 21-014 MAG* which allows 9,383 acre-feet per year water usage to stay within the DFCs. Likewise, the DFCs for GMA 10 were set by the *GAM Run 16-033 MAG* allowing for 33,554 acre-feet water usage per year.

The DFCs call for comparisons of average and allowable drawdown to the generally agreed upon baseline 2008 water levels. However, the CTGCD monitoring capability only came online in 2019 so comparisons with average drawdown and allowable drawdown from the DFC is not yet possible as the data period is not long enough for significant comparisons. The two TWDB monitored wells in Comal County have more historical data; however, they are representative of a very small area within the county.

Addressing Desired Future Conditions: Groundwater Management Area Joint Planning Process[18]

There were four GMA-9 DFC planning meetings in 2024; March 26, June 18, September 17, and December 13, 2024, of which all were attended by a CTGCD representative. Additionally, CTGCD provided a report of Management Plan achievements and DFC monitoring results at the December 13th meeting.

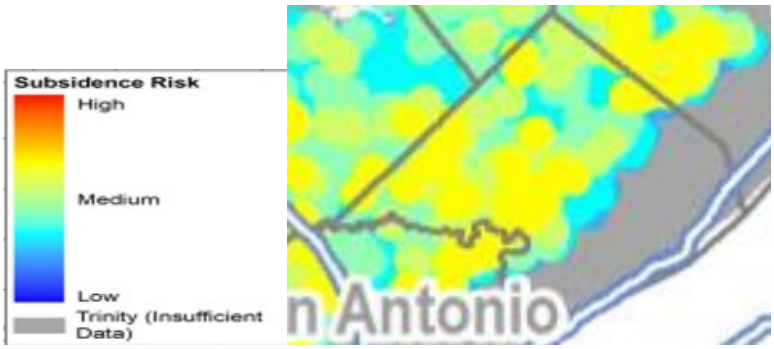
There were four GMA-10 meetings held in 2024; January 22, April 15, September 23 and December 9, 2024, all of which were attended by a CTGCD representative. Additionally, CTGCD provided a report of Management Plan achievements and DFC monitoring results at the December 9th meeting.

Appendix A – CTGCD Pamphlet

[18] CTGCD Management Plan Goal 8.B

APPENDIX B

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



APPENDIX C

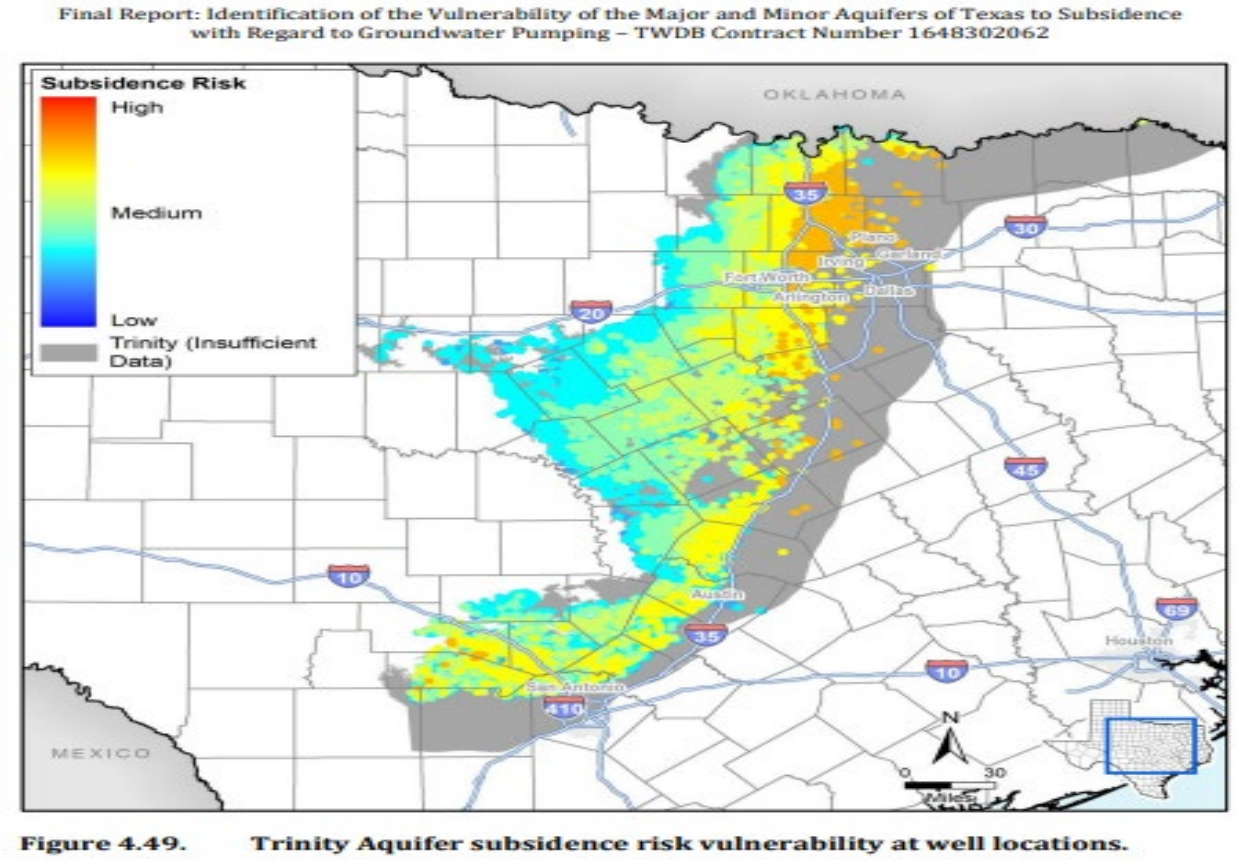


Figure 4.49. Trinity Aquifer subsidence risk vulnerability at well locations.

Comal Trinity Groundwater Conservation District Management Plan Revision Record

Date Adopted	Version
March 19, 2018	Original Adoption
March 13, 2023	Revision #1 (TWDB Approved May 5, 2023)