2017 Annual Report

Red River Groundwater Conservation District

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ATTACHMENTS

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Mark Newhouse, Member

Billy Stephens, Member

Grayson County

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David Gattis, Member

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Wayne Parkman, Field Technician

Paul Sigle, Technical Lead

Theda Anderson, Clerk

Debi Atkins, Finance Officer

Tamera Flores, Accountant

Tasha Hamilton, Accountant

Carolyn Bennett, Administrative Manager/Project Coordinator

Velma Starks, Administrative Assistant

I. Introduction

In 1997 Senate Bill 1, enacted by the Texas Legislature, confirmed a state policy that "groundwater conservation districts... are the state's preferred method of groundwater management through rules developed, adopted and promulgated by a district..." Subsequently, the Texas Commission on Environmental Quality issued a report in 2007 advising that one or more groundwater conservation districts would need to be created in the 13-county area of North Central Texas, including the Counties of Fannin and Grayson. Red River Groundwater Conservation District ("District") was created by Senate Bill 2529 May 25, 2009 for Fannin and Grayson Counties. Three directors are appointed to Fannin County and four directors are appointed to Grayson County. The District's boundaries are coterminous with the boundaries of Fannin and Grayson Counties.

As required by Chapter 36 of the Texas Water Code, the District provides for conserving, preserving, protecting, recharging and preventing the waste of groundwater. The Board of Directors of the District adopted its initial Temporary Rules August 29, 2011. The adopted Temporary Rules provide protection to existing wells, prevent waste, promote conservation, provide a framework that will allow availability and accessibility of groundwater for future generations, protect the quality of the groundwater in the recharge zone of the aquifer, insure that the residents of Fannin and Grayson Counties maintain local control over their groundwater, and operate the District is a fair and equitable manner for all residents of the District.

The District's Temporary Rules were last amended effective January 1, 2017. These amendments addressed revising the definition of "new well," "substantially alter," and "TCEQ." In addition, the Rules were revised to more accurately reflect the requirements for installation of a meter, and the Rule regarding exemption from production fees for groundwater used for maintenance purposes was removed. Rules were added to address registration of non-exempt wells prior to modifying/altering and/or operating, prevention of contaminants getting into wells, completion standards, and failure to submit production reports. The rule regarding transfer fees was refined, and other minor revisions were made to the District's Temporary Rules.

The District adopted its initial Management Plan in May of 2012. As required, the District's Management Plan was updated and readopted March 16, 2017. The Texas Water Development Board subsequently approved the updated and readopted Plan. One requirement of this Plan is an Annual Report be provided to the Board of Directors. This report is presented to the Board of Directors of the Red River Groundwater Conservation District pursuant to this requirement.

The District is committed to manage and protect the groundwater resources within its jurisdiction and to work with others to ensure a sustainable, adequate, high quality and cost effective supply of water, now and in the future. The District will strive to develop, promote, and implement water conservation, augmentation, and management strategies to protect water resources for the benefit of the citizens, economy and environment of the District. The preservation of this most valuable resource can be managed in a prudent and cost effective

manner through conservation, education, and management. Any action taken by the District shall only be after full considerations and respect has been afforded to the individual property rights of all citizens of the District.

II. General Manager's Report

This annual report has been prepared by District staff for presentation to the Board to keep them informed of the status of goals adopted by this Plan.

Mandatory well registration began April 1, 2012. This applies to all existing non-exempt wells, and all new wells drilled after April 1, 2012. All new wells must be approved and registered before construction begins.

During 2017, the Red River GCD Board of Directors and staff accomplished the following tasks:

- Adopted Desired Future Conditions ("DFC")
- Addressed the need for updating the District's geodatabase and entered into a contract to update the geodatabase including development of a Water Well Management System
- Began development of Permanent Rules and held workshops with consultants
    - March 16, 2017
    - July 13, 2017
    - November 2, 2017
    - December 19, 2017
- Revised District By Laws
    - Revisions included streamlining the appointment process for Directors and various other minor revisions
- Developed brochure regarding transfer of ownership due to sale of property for local realtor associations
- Updated Investment Policy
- Continued meter inspection program, including the meter sealing policy to assure meters stay with the well for which it is assigned
- Well inspection program sustained
- Review of Joint Groundwater Monitoring and Contamination Report prepared by Texas Commission on Environmental Quality, Texas Railroad Commission and other agencies addressing potential impacts from historic and ongoing oil and gas exploration
- Well monitoring activities began
- Continued public information program in each county by publishing an article in newspaper of general circulation for each county regarding registration of wells. The General Manager also gave presentations in order to educate the public on the activities and purpose of the District.
- Provided Major Rivers curriculum for water conservation to 4th grade classes within the District

III. Management Goals

The District Management Plan provides that an Annual Report be prepared by the General Manager and staff of the District, covering the activities of the District, including information concerning the District's performance in regards to achieving the District's management goals and objectives.

Goal 1 – Providing the most efficient use of water

Management Objective 1.1 – The District will require that all wells be registered in accordance with its current rules. All new wells drilled after April 1, 2012 and all existing non-exempt wells are required to be registered with the District in accordance with its current rules.

Performance Standard 1.1 – Subsequent to adoption of the Plan, briefings are being provided by the General Manager to the Board of Directors regarding well registration program at the monthly board meetings. Quarterly Reports regarding well registration are provided to the Board as well. In addition, a handout was developed by District staff to be provided annually to local realtor associations detailing the requirement of new property owners to register their existing wells within ninety (90) days of transfer of ownership.

Current number of wells registered in the District: 784
Aquifers in which the wells have been completed: Trinity and Woodbine

Management Objective 1.2 – It is the goal of the District that all non-exempt wells and exempt wells be registered. Beginning in April 2011 District launched an on-line registration program in order to register and collect important information regarding all non-exempt wells drilled on or after April 1, 2011. The District's Field Technicians manage a Field Inspections Program, with the objective of conducting field inspections of at least five (5) wells per month. These inspections confirm that a well has been registered, accuracy of well location, and accuracy of certain other required well registration information.

Performance Standard 1.2 – Quarterly briefings are provided by the General Manager to the Board of Directors regarding the number of well sites inspected each month to confirm well registration requirements have been met. Requirement to inspect/audit well sites each month to confirm well registration requirements has been met. This information is reported in Table 1.2.

Table 1.2
2017
Well Inspections

Month	Fannin	Grayson	Total
January	1	4	5
February	5	13	18
March	4	2	6
April	7	11	18
May	5	19	24
June	5	14	19
July	11	12	23
August	2	11	13
September	11	3	14
October	0	7	7
November	10	13	23
December	3	9	12
Total	64	118	182

This information is updated and presented monthly to the Board of Directors.

Management Objective 1.3(a) – A groundwater monitoring program was launched in 2017, to collect information on the quantity and quality of groundwater resources throughout the District. For the first two years, beginning in 2017, District staff began to work with Texas Water Development Board ("TWDB") staff to monitor water levels in wells the TWDB staff currently monitors on an annual basis. After the initial two-year period, District staff will assume the responsibility of monitoring these wells at least annually. District staff is working on agreements with well owners for additional monitoring wells to add wells to the District's groundwater monitoring program.

For the purpose of water quality sampling, the samples collected for water quality taken by the Texas Commission on Environmental Quality staff every five years will be used for monitoring purposes initially, and may be supplemented as determined by the Board in the future. All information collected will be entered into the District's geodatabase.

Performance Standard 1.3(a)(1) – Number of wells in Fannin and Grayson Counties for which water levels were measured per year:

Wells Measured
Table 1.3A

Year	Wells Measured
2017	16

Performance Standard 1.3(a)(2) – Number of wells per year in Fannin and Grayson Counties for which water samples were collected for testing of water quality: The Texas Commission on Environmental Quality provides a Consumer Confidence Report that provides consumers with information about the quality of drinking water. This data may be reviewed at www.tceq.texas.gov/drinkingwater/ccr/ for water systems.

Management Objective 1.3(b) – In order to ensure the efficient use of groundwater, adequate data must be collected to facilitate groundwater availability modeling activities necessary to understand current groundwater resources and the projected availability of those resources in the future. Monitoring wells will be established by the District for continuous time information on water levels in targeted locations on a schedule as determined by the District's Board of Directors, as funds become available.

Performance Standard 1.3(b) – Number of wells for which water level data is available will be accessible online after the current geodatabase improvements project is complete.

Management Objective 1.4 – A critical component of the District's goal of ensuring the efficient use of groundwater is the collection of accurate water use information. The District has established by temporary rule a requirement that all non-exempt wells are to be equipped with meters to measure use of groundwater. The well owner/operator is responsible for maintaining a meter log with at least monthly records of water use. Cumulative water use to be reported by well owner/operator on a quarterly basis. All water use information is entered and maintained in the District's geodatabase. It is the objective of the District that 95 percent of all registered non-exempt wells will report water use by the reporting deadlines established in the District's rules.

Performance Standard 1.4 – Percentage of registered non-exempt wells meeting reporting requirements of water use:

Percentage of Registered Non-Exempt Wells Meeting Reporting Requirements of Water Use

Table 1.4

Year	Percentage Meeting Reporting Requirements
2017	88

Management Objective 1.5 – In order to ensure that registered non-exempt wells have been equipped with District-approved meters and that water use is being accurately reported, a meter inspection program has been implemented by District staff. The District Field Technicians facilitate a meter inspection program to ensure that meters for all registered non-exempt wells will be inspected on at least a five-year cycle by District personnel. These inspections at a minimum verify proper installation and operational status of meters and record the meter reading at the time of inspection. This meter reading is compared to the most recent water use

report for the inspected well. Any potential violation of District Rules regarding meter installation and reporting requirements will be reported to the Board of Directors at their next practicable meeting for consideration of possible enforcement actions. Information containing annual water use, by registered well, by county, and by aquifer, will be included in the Annual Report presented by the General Manager. The report will include a comparison of reported water use versus the estimate of modeled available groundwater (the sum of exempt and permitted groundwater) established as a result of the Desired Future Conditions for aquifers in the District. This will be available to be included in future Annual Reports to the Board of Directors, since the Desired Future Conditions for the District were approved at the December 2017 Board meeting.

Performance Standard 1.5(a) - Percentage of registered non-exempt wells inspected by District personnel annually to verify meters meet District requirements:

Percentage of Registered Non-Exempt Wells

Inspected Annually

Table 1.5

Year	Percentage of Wells Inspected
2017	44%

Performance Standard 1.5(b) - Comparison of annual water use versus estimates of modeled available groundwater established as a result of the adopted Desired Future Conditions to be included in Annual Report provided by the General Manager at the first regularly scheduled meeting after which the current geodatabase improvements project is completed.

Management Objective 1.6 – A critical component to accomplishing the District's mission is to ensure that proper data is being collected and that the data is being utilized to the fullest extent and efficiently. Shortly after the District was created, the District hired a consultant to build an online geodatabase that would make workflows, data entry and data utilization easier and more efficient for well owners, well drillers, general public, District staff and Board of Directors. After several years of utilizing the geodatabase the District had built, the District staff has identified areas in which the existing system can be upgraded.

Performance Standard 1.6 – The District has hired a consultant to upgrade the District's geodatabase. The consultant is in the process of building an upgraded database to make workflows, data entry and data utilization easier and more efficient.

Management Objective 1.7 – The District will develop methodology to quantify current and projected annual groundwater production from exempt wells.

Performance Standard 1.7 – The District will provide the Texas Water Development Board with its methodology and estimates of current and projected annual groundwater production from exempt wells. The District will also utilize the information in the future in developing and achieving desired future conditions and in developing and implementing its production

allocation and permitting system and rules. Information pertaining to the implementation of this objective will be included in the Annual Report to the Board of Directors by 2019.

Goal 2 – Controlling and preventing waste of groundwater

Management Objective 2.1 – The District will annually provide information to the public on eliminating and reducing wasteful practices in the use of groundwater by publishing information on groundwater waste reduction on the District's website at least once a year.

Performance Standard 2.1 – A link has been provided on the District website to Best Management Practices and helpful hints to control and prevent waste of groundwater.

The following is an excerpt of information available on the District website:

Conservation Tips:

Home Water Conservation Guide
Home Water Works home water usage water calculator
25 things you can do to save water
The Texas Manual on Rainwater Harvesting
How to Conserve Water in the Bathroom
Home Intelligence At-Home Water Conservation Guide

Brochures in Spanish

Cuarenta Y Nueve Consejos Practicos Para Conservar Agua (Forty-Nine Water Saving Tips)
Xeriscape (Xeriscape - Principles and Benefits)
The Dillos Demonstrate Wordless Water Conservation

Management Objective 2.2 – The District will encourage the elimination and reduction of groundwater waste through a collection of water-use fees for non-exemption production wells within the District.

Performance Standard 2.2 – See Table 2.2

Annual Report
Fees Paid and Groundwater Usage
Table 2.2

Year	Total Fees Paid	Total Groundwater Used
2013	$297,037.92	4,243,398,860
2014	$284,250.06	4,060,715,143
2015	$322,861.01	4,612,300,150
2016	$303,474.94	4,331,070,580
2017	$302,897.59	4,327,108,428

Management Objective 2.3 – The District will identify well owners that are not in compliance with District well registration, reporting, and fee payment requirements, and request they comply.

Performance Standard 2.3 – District staff compares existing state records and field staff observations with well registration database to identify noncompliant well owners.

Management Objective 2.4 – The District **will** investigate instance of potential waste of groundwater.

Performance Standard 2.4 – District staff **will** report to the Board of Directors as needed regarding potential waste of groundwater and include number of investigations in Annual Report.

Goal 3 – Controlling and preventing subsidence – not applicable to Red River GCD

Goal 4 – Addressing conjunctive surface water management issues

Management Objective 4.1 – Coordinating with surface water management agencies. Designated Board Member or General Manager shall attend a minimum of 75 percent of meetings and events of Region C Water Planning Group. Participation in the regional water planning process will ensure coordination with surface water management agencies that are participating in the regional water planning process.

Performance Standard 4.1 – Report on actions of Region C Water Planning Group shall be provided to the Board as appropriate. General Manager to document meetings attended and significant actions of the planning group in Annual Report.

Region C Water Planning Group held two (2) meetings in 2017, on May 22, 2017 and December 18, 2017. General Manager Drew Satterwhite, P.E. attended the meeting held May 22, 2017. Harold Latham, Board Vice President, attended both the May 22, 2017 meeting and the December 18, 2017 meeting.

Minutes of the May 22, 2017 **(final)** meeting and December 18, 2017 meeting **(draft)** are attached in Attachment E.

Management Objective 4.2 – Designated technical representative of the District will monitor and participate in all stakeholder meetings that concern water resources relevant to the District.

Performance Standard 4.2 – The General Manager of the District will monitor and participate in relevant stakeholder meetings that concern water resources relevant to the District. A report on meetings attended will be included in the Annual Report to the Board of Directors.

General Manager attended the GMA 8 Meeting, 1 of 2 Region C Water Planning Meetings, both of the Trinity Aquifer Brackish Stakeholder meetings. Attachment F contains reports on the Stakeholder meetings attended.

Goal 5 – Addressing natural resource issues

Management Objective 5.1

The District has engaged a firm to monitor all injection well applications within the District and notify the General Manager of any potential impacts.

Performance Standard 5.1 – General Manager will report to the Board of Directors on any information provided by the consultant engaged to monitor injection well applications within the District to the Board of Directors and document that information in the Annual Report to the Board of Directors.

The District's legal counsel has reported to the Board of Directors under the General Manger's report in the Board Meetings. In 2017, there were two protests filed by the District that were both resolved by the applicants providing more information the District.

Management Objective 5.2 – The District will monitor compliance by oil and gas companies of well registration, metering, production reporting, and fee payment requirements of the District's rules.

Performance Standard 5.2 – As with other types of wells, instances of non-compliance by owners and operators of water wells for oil and gas activities will be reported to the Board of Directors as appropriate and for enforcement action. A summary of such enforcement activities will be included in the Annual Report to the Board of Directors.

Goal 6 – Addressing drought conditions

Management Objective 6.1 – The District **will** make available through the District's website easily accessible drought information with an emphasis on developing droughts and any current drought conditions.

Performance Standard 6.1- The District has made available through the District website easily accessible drought information with an emphasis on developing droughts and on any current drought conditions. Monthly U.S. Drought Monitor maps for Texas are available on the District website. Copies of each month's report for 2017 are attached to this report.

Goal 7 – Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, and brush control

Texas Water Code §36.1071(a)(7) requires that a management plan include a goal that addressed conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective. The District has determined that a goal addressing recharge enhancement and precipitation enhancement would not be appropriate or cost effective, and therefore is not applicable to the District.

Management Objective 7.1 – Provide for and facilitate the conservation of groundwater resources within the District. The District will include a link on the District's website to the electronic library of water conservation resources supported by the Water Conservation Advisory Council.

Performance Standard 7.1 – Link to electronic library of water conservation resources supported by the Water Conservation Advisory Council is available on the District website.

The following are links to the electronic library of water conservation resources supported by the Water Conservation Advisory Council that is available on the District's website:

Best Management Practice links:

Conservation Tips:
Home Water Conservation Guide
Home Water Works home water usage water calculator
25 things you can do to save water
The Texas Manual on Rainwater Harvesting
How to Conserve Water in the Bathroom
Home Intelligence At-Home Water Conservation Guide

Brochures in Spanish
Cuarenta Y Nueve Consejos Practicos Para Conservar Agua (Forty-Nine Water Saving Tips)
Xeriscape (Xeriscape - Principles and Benefits)
The Dillos Demonstrate Wordless Water Conservation

Management Objective 7.2 – The District will submit at least one article regarding water conservation for publication each year to at least one newspaper of general circulation in the District's Counties.

Performance Standard 7.2- Attachment ____ contains the article published during 2017 regarding water conservation.

Management Objective 7.3 – The District will provide educational curriculum regarding water conservation offered by the Texas Water Development Board (Major Rivers) to at least one elementary school in each county of the District.

Performance Standard 7.3 – During 2017 Major Rivers curriculum purchased from the Texas Water Development Board was provided to three (3) schools within the District.

Management Objective 7.4 – Rainwater harvesting is assuming a viable role either as a supplemental water supply or as the primary water supply in both urban and rural areas of Texas. As a result, Texas has become internationally recognized for the widespread use and innovative technologies that have been developed, primarily through efforts at the Texas Water Development Board. To ensure these educational materials are readily available to citizens in the District, a link to rainwater harvesting materials including system design specifications and water quality requirements will be maintained on the District's website.

Performance Standard 7.4 – The following links are maintained on the District's website:

Rainwater Harvesting Links
The following rainwater harvesting links have been added to the Red River Groundwater Conservation District website:

Rainwater Harvesting Links

TWDB Rainwater Harvesting Information
Texas Water by Texas A&M
TWDB Manual on Rainwater Harvesting
Harvesting Rainwater with Rain Barrels

Management Objective 7.5 – Educate public on importance of brush controls as it related to water table consumption.

Performance Standard 7.5 – The following links are maintained on the District's website:

Brush Control Links

State Water supply Enhancement Plan (July 2014)
Texas State Soil and Water Conservation Board
AgriLife Extension Texas A&M System Brush Control Program

Goal 8 – Achieving Desired Future Conditions of Groundwater Resources

The Desired Future Conditions of the aquifers of Groundwater Management Area 8 represent average water levels in the various aquifers at the end of 50-years based on meeting current and projected groundwater supply needs. The Board of Directors has adopted a strategic approach that includes adoption of this management plan and rules necessary to achieve the Desired Future Conditions. This management plan and companion rules have been designed as an integrated program that will systematically collect and review water data on water quantity, water quality, and water use, while at the same time, implementing public awareness and public education activities that will result in a better formed constituency.

Management Objective 8.1 – Statute requires GCDs to review, amend as necessary, and readopt management plans at least every five years. The General Manager will annually present a summary report on the status of achieving the adopted desired future conditions.

Performance Standard 8.1(a) – The General Manager will present a summary report on the status of achieving the adopted desired future conditions in the Annual Report beginning 2019. The summary report will primarily be based on data collected from the District's groundwater monitoring program. The Desired Future Conditions for the Red River GCD were adopted in December 2017.

Performance Standard 8.1(b) – Beginning four years after adoption of the Plan, General Manager will work with Board of Directors to conduct a focused review to determine if any elements of this Plan or the District Rules need to be amended to achieve the adopted Desired Future Conditions, or if the Desired Future Conditions need to be reviewed/revised to better reflect the needs of the District. Possible results of the five-year review: (1) determination that current Plan and Rules are working effectively to achieve Desired Future Conditions, (2) specific amendments need to be made to the Plan and/or Rules to achieve the adopted Desired Future Conditions, (3) amendments are needed to the adopted Desired Future Conditions to better meet the needs of the District, or (4) a combination of (2) and (3). This determination to be made at a regularly scheduled meeting of the Board of Directors no later than five years after adoption of the Plan.

ATTACHMENT A

Excerpts from TCEQ Joint Groundwater Monitoring Contamination Report – 2016

TABLE 1
GROUNDWATER CONTAMINATION CASE DESCRIPTION BY COUNTY
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

COUNTY	DIVISION	NEW CASES	FILE NAME	FILE NUMBER	LOCATION	CONTAMINATION DESCRIPTION	DATE	ENFORCEMENT STATUS		DATA QUALITY §5.236
GALVESTON										
	REM/VC									
			MAGNOLIA HOMES	2590	NEC OF 18TH STREET AND MECHANIC STREET, GALVESTON	SVOCS, METALS, TPH	7/1/2013	0B	4	E
			PALMER PLAZA	2181	3220 - 3474 PALMER HIGHWAY, TEXAS CITY	METALS	6/4/2008	0B	5	E
			PORT OF TEXAS CITY DOCK ROAD SOUTH	1428	2425 HIGHWAY 146 NORTH, TEXAS CITY	SVOCS	1/11/2002	0B	4	E
			SPTCO GALVESTON WHARVES SITE	977	4100 OLD PORT INDUSTRIAL BOULEVARD, GALVESTON	SVOCS	5/11/1999	0B	4	E
	REM/VCIO									
		*	U STOR OF TEXAS CITY	1006	2919 FM 1765, LA MARQUE	SVOCS	6/2/2016		1B	E
		*	WHATABURGER PROJECT NO 2101570	1002	6300 GULF FWY, FAIRFIELD	VOCS, TPH	4/20/2016		6	E
	WPD/IHW									
			ISP TECHNOLOGIES, INC	HWP50389	4501 ATTWATER AVE, TEXAS CITY	MW-1LF, 2LF, 3LF, 4LF, 6D, 7LF, 8LF, 9LF, 10LF, 11LF, 12LF, 13LF: METALS (CHROMIUM); MW-11LF: ORGANIC COMPOUNDS (FORMALDEHYDE; TOLUENE)	7/14/2014	2C	1A	E,Q,V2
GARZA										
	REM/PST									
			SOUTHLAND HARDWARE	100127	130 FT S OF RR 2106 OFF OF HWY 84 FRONTAGE RD, SOUTHLAND	DIESEL, GASOLINE	9/4/1991	5B	4	E,Q
GILLESPIE										
	REM/PST									
			BROWDER 76 3	91492	1301 E MAIN ST, FREDERICKSBURG	GASOLINE	10/9/1987	5B	6	E,Q
			CRENWELGE OIL CO 2	97352	713 W MAIN ST, FREDERICKSBURG	GASOLINE	11/16/1990	5B	2A	E,Q
	WAD/GPAT									
			STAFFORD	EF9105007	LOWER CRABAPPLE ROAD, NORTH OF FREDERICKSBURG	NITRATES	5/1/1991	2D	2B	Q,V2
GOLIAD										
	REM/CA									
			CUNNINGHAM CLEANERS	72442	1810 N ROBISON, TEXARKANA	BTEX	11/18/2006	0A	1	E
	REM/PST									
			HI WAY GROCERY	93636	HIGHWAY 59 & HIGHWAY 239, GOLIAD	GASOLINE, UNKNOWN	9/18/1989	5B	2A	E,Q
GONZALES										
	REM/PST									
		*	CIRCLE K 4051	120104	105 E CENTRAL AVE, NIXON	GASOLINE	10/12/2016	1B	1A	E,Q
			GONZALES BULK PLANT	118795	1918 CHURCH ST, GONZALES	UNKNOWN	1/17/2012	2	2A	E,Q
		*	LEXINGTON EXXON	119695	3324 US HIGHWAY 90A E, GONZALES	GASOLINE	5/22/2015	1B	1A	E,Q
	REM/VC									
			GONZALES STATION	1624	6862 COUNTY ROAD 240, WAELDER	CHLORINATED SOLVENTS	8/8/2003	0B	5	E
GRAY										
	REM/CA									
			CELANESE LTD	30072	8201 FM 2300, PAMPA 79065	BENZENE, ACETONE, MTBE	5/6/1992	2C	5	EQV
		*	FORMER BJ SERVICES FACILITY	T3298	12303 VICKSBURG DRIVE, ENDINBURG 78542	TPH, VOC	9/16/2016	1B	2A	E
	REM/PST									
			FORMER CROCKETT EXXON STATION	97200	SW CORNER OF THE INTERSECTION OF I-40 E FRONTAGE RD AND FM 291, ALANREED	GASOLINE	10/11/1990	5B	2A	E,Q
GRAYSON										
	REM/CA									
			EL DORADO CHEMICAL COMPANY-WHITEWRIGHT FACILITY	T2449	1102 NORTH BOND STREET, WHITEWRIGHT 75491	NITRATE, ALPHA BHC, DICAMBA, ARSENIC	4/16/2010	0B	1	E,Q
			HELENA CHEMICAL WHITEWRIGHT	T3195	1110 S BOND ST, WHITEWRIGHT 75491	AMMONIA	12/1/2014	2	6	E, Q
			NORTH TEXAS REGIONAL AIRPORT	T3081	5501 AIRPORT DRIVE, DENISON 75020	VOCS	4/19/2013	2A	2A	E,Q
			PERRIN AIR FORCE BASE	52042	DENISON	ORGANICS, METALS	5/1/1991	2B	5	E,Q,V,2
			STEWART TANK COMPANY & OILFIELD SUPPLY	T2215	21741 W US HIGHWAY 82, SHERMAN 75092	LEAD, TPH	9/5/2007	3	2A	E
			TEXAS INSTRUMENTS INC	30427	6410 HIGHWAY 75 S, SHERMAN 75090	SOLVENTS, DIESEL	6/1/1988	2B	6	E,Q,V,2

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GROUNDWATER CONTAMINATION CASE DESCRIPTION BY COUNTY
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

COUNTY	DIVISION	NEW CASES	FILE NAME	FILE NUMBER	LOCATION	CONTAMINATION DESCRIPTION	DATE	ENFORCEMENT STATUS		DATA QUALITY §5.236
GRAYSON										
	REM/CA									
			UNIVERSAL COMPRESSION/MIDLAND	72856	5200 IH 20, MIDLAND 79703	TCE	12/15/2004	0A	3	E
			WJ SMITH WOOD PRESERVING CO	31332	1700 W MORTON ST, DENISON 75020	VOCS, SVOCS	1/20/1988	4	5	EQ
	REM/PST									
			C STORE 122	119017	5018 S STATE HIGHWAY 91, DENISON	UNKNOWN	7/23/2012	2	2A	E,Q
			EZ MART 34	119369	1400 S AUSTIN AVE, DENISON	UNKNOWN	2/25/2014	2	2A	E,Q
			HIGHPORT MARINA RESORT	118779	120 TEXOMA HARBOR DR, POTTSBORO	UNKNOWN	10/17/2011	2	6	E,Q
			MAYOS E Z SERVE 100115	109520	608 W MAIN ST, WHITESBORO	GASOLINE	5/1/1995	5B	2A	E,Q
			ROCK CREEK RESORT	119790	21400 FM 901, GORDONVILLE	GASOLINE	8/27/2015	2	6	E,Q
			TEXAS OSAIS	119091	228 N HIGHWAY 377, TIOGA	UNKNOWN	1/31/2013	2	2A	E,Q
	REM/SF									
			SHERMAN FOUNDRY	SUP089	532 E KING, SHERMAN, TX, SHERMAN	TRICHLOROETHENE, 1,2-DCE, PCE	4/19/2007	5B	2B	E, Q, V3
	REM/VC									
			DENISON TX TIE PLANT WASTE STORAGE 2	2437	401 LUM LANE, DENISON	VOCS, SVOCS, METALS, TPH	8/17/2011	0B	3	E
GREGG										
	REM/CA									
			AIR LIQUID LONGVIEW	T2331	1531 FM 1845S, LONGVIEW 75603	PETROLUEM HYDROCARBONS, 1,1-DICHLOROETHENE, ARSENIC, BENZENE	10/8/2009	0A	2B	E,Q
			BURLINGTON NORTHERN & SANTA FE RAILROAD	T1586	325 S CLUB DR, LONGVIEW 75602	CREOSOTE, PAHS, PCP, ARSENIC, CHROMIUM,AMMONIA, NITRATE	3/13/1999	0	3	E
			KILGORE INDUSTRIAL PARK	T2020	LOTS 7 & 8, BLOCK 1, ENERGY DRIVE, KILGORE 75663	BENZENE	2/16/2012	2C	1A	E,Q
			LEVI STRAUSS & CO (FMR RESISTOL HAT LONGVIEW)	38266	KODAK BLVD, LONGVIEW 75602	TETRACHLOROETHYLENE	10/29/1984	3B	5	EQV23
			MERRITT TOOL CO	33042	702 OLD GLADEWATER HWY, KILGORE 75662	CHROMIUM	6/12/1990	3B	4	EQ
			ROYLE CONTAINER CO	39897	200 VALENTINE LN, LONGVIEW 75606	VOCS, METALS	7/12/1994	3B	3	E
			SKEETER PRODUCTS INC	30629	1 SKEETER RD, KILGORE 75662	ACETONE	9/15/1993	2	5	E2
			SONNLEITNER PROPERTY (WALGREENS #7611)	T2399	511 EAST MARSHALL, LONGVIEW 75601	CHLORINATED SOLVENTS	1/1/2002	0A	5	E,Q
			UNION TANK CAR CO	32631	2173 FM 2087, LONGVIEW 75602	ORGANICS	7/1/1995	1B	5	EQV2
			WEATHERFORD ARTIFICIAL LIFT SYSTEMS	31050	2143 FM 2751, LONGVIEW 75605	TOTAL CHROMIUM, CHROMIUM VI	3/9/2010	0B	4	E, Q
			WELLMAN INDUSTRIES	33350	7 INDUSTRIAL BLVD, LONGVIEW 75604	CR, CD, NI, CU, ZN	5/15/1990	4A	4	E
	REM/PST									
			COORS OF LONGVIEW	119675	2002 E COTTON ST, LONGVIEW	GASOLINE	4/24/2015	2	6	E,Q
			FFP 234	92843	4306 W MARSHALL AVE, LONGVIEW	GASOLINE	3/28/1989	2	2A	E,Q
			FINA SHORT STOP 17	114967	1000 PINE TREE RD, LONGVIEW	GASOLINE	5/23/2000	2	6	E,Q
			FORMER CIRCLE J QUICK STOP	114199	HWY 135 & IH 20, GLADEWATER	GASOLINE	12/18/1998	5B	4	E,Q
			FORMER FUEL SERVICE CT	92877	100 W COTTON ST, LONGVIEW	GASOLINE	4/24/1989	5B	2A	E,Q
			FORMER FUELCARD	116079	1500 BILL OWENS PKWY, LONGVIEW	GASOLINE	3/8/2004	5B	2A	E,Q
			FORMER LETOURNEAU TECH	118696	811 ESTES DR, LONGVIEW	UNKNOWN	10/7/2011	2	2A	E,Q
			FORMER LILLYS FINA SERVICE	119885	610 S GREEN ST, LONGVIEW	GASOLINE	2/2/2016	2	2A	E,Q
			FORMER SERVICE STATION	115970	424 S MOBBERLY AVE, LONGVIEW	UNKNOWN	5/10/2004	1B	1A	E,Q
			GREGG COUNTY OIL CO	112223	210 W TYLER ST, LONGVIEW	GASOLINE, DIESEL	3/31/1997	5B	4	E,Q
			HONEY STOP FOOD MART 2	117730	524 N EASTMAN RD, LONGVIEW	UNKNOWN	2/25/2008	2	6	E,Q
			I 20 TRUCK STOP	114680	I 20 JOY WRIGHT, GLADEWATER	GASOLINE, DIESEL	6/1/1999	2	2A	E,Q
			JERRY BARROW GLADEWATER SHELL	94808	101 W UPSHUR AVE, GLADEWATER	GASOLINE	2/13/1990	2	2A	E,Q
			SHORT STOP 24	114972	2851 N EASTMAN RD, LONGVIEW	UNKNOWN	5/23/2000	2	2A	E,Q
			SHORT STOP 4	114958	808 BROADWAY AVE, GLADEWATER	GASOLINE, DIESEL	5/23/2000	2	4	E,Q
			SHORT STOP FINA 23	114971	451 S HIGH ST, LONGVIEW	UNKNOWN	5/2/1999	2	2A	E,Q
			STROHS BREWERY CO	105979	1400 W COTTON ST, LONGVIEW	DIST F OIL	12/22/1992	2	2A	E,Q
			WILLCO 1	118868	1298 BROADWAY AVE, GLADEWATER	UNKNOWN	9/29/2011	2	6	E,Q
	REM/SF									
			GARLAND CREOSOTING	SUP052	3915 GARLAND RD, LONGVIEW	TCE; BENZO (A) PYRENE; 1,2-DCA;VC; BTEX; POLYAROMATIC HYDROCARBONS (PAH); NAPHTHALENE	8/13/1985	5A	5	E,Q,V3
	REM/VC		VODA PETROLEUM INC	SUP067	711 DUNCAN RD, CLARKSVILLE CITY	BENZENE, VINYL CHORIDE	7/10/2002	5B	5	E, Q, V3
			COASTAL UNILUBE DISTRIBUTION CENTER	1093	2204 NORTH LONGVIEW STREET, KILGORE	METALS, CL SOLVENT S	11/9/1999	0B	4	E

TABLE 4 (APPENDIX 8)
HISTORIC GROUNDWATER CONTAMINATION CASE DESCRIPTION BY COUNTY
ALL AGENCIES, 1994-2015

COUNTY	AGENCY	DIVISION	SECTION	FILE NAME	FILE NUMBER	LOCATION	CONTAMINATION DESCRIPTION	ENFORCEMENT STATUS		YEAR DELETED
GILLESPIE										
	TCEQ									
		WPD	MSW	CITY OF FREDERICKSBURG LANDFILL (PRE-SUBTITLE D ONLY)	MSW00040	0.9 MILE E CITY LIMITS SOUTH SIDE OF FM 1631	MW-3: VOCS (CHLOROBENZENE; CIS-1,2-DICHLOROETHYLENE; 1,4-DICHLOROBENZENE)	2B	6C	2014
GONZALEZ										
	RRC									
		OIL & GAS	1	KOCH PIPELINE	OCP# 1503	WICKIE GONZALEZ LEASE	BTEX	0	6C	2003
GRAY										
	RRC									
		OIL & GAS		PLAINS MARKETING LP	OCP# 2556	BOWERS CITY 3" PIPELINE	PSH, BTEX, TPH	0	6C	2010
			10	EQUILON PIPELINE CO (LEFORS STATION)	OCP# 1881	5 MILES EAST OF LEFORS	BTEX	0	6C	2004
				RUBY GAGE COMPLAINT	OCP# 1085	2 MILES SW OF PAMPA	CHLORIDE	1C	6C	2006
	TCEQ									
		WPD	MSW	CITY OF PAMPA LANDFILL	MSW2238	0.5 MILES NORTHEAST OF THE CITY OF PAMPA GRAY COUNTY	MW-3: VOCS (TETRACHLOROETHYLENE)	2B	6C	2007
		WSD	PDW	I-R-I INTERNATIONAL	G0900012A	5-1/2 MILE NW OF OFFICE	TETRACHLOROETHENE		6C	2000
GRAYSON										
	TCEQ									
		WPD	MSW	GREATER TEXOMA UTILITY AUTHORITY LANDFILL	MSW00648	7 MILE NE SHERMAN 0.75 MI	MW-1, 3, 5, 7, 8, 11, 12: VOCS (CHLOROBENZENE, 1,1-DICHLOROETHANE, 1,1-DICHLOROETHYLENE, CIS-1,2-DIC	2B	6C	2010
				HILLSIDE LANDFILL AND RECYCLING CENTER	MSW00523B	RR 7 SHERMAN TX 75090 9807	MW-18: VOCS (BENZENE; CHLOROBENZENE); MW-08A: ARSENIC		6C	2013
		WSD	PDW	TANGLEWOOD ON TEXOMA	G0910052T	CAMBRIDGE 2 - 222 CASTLE DR	MTBE	2C	6C	2009
				TANGLEWOOD ON TEXOMA	G0910052V	CAMBRIDGE 4 - 222 CASTLE DR / S LOT 8, BLK1	MTBE	2C	6C	2009
GREGG										
	RRC									
		OIL & GAS	6	SCURLOCK PERMIAN PIPELINE		IN LONGVIEW	CRUDE OIL	2D	6C	1994
				WAL-MART STORE #572-02	VCP#6-20000	LATTITUDE 33.5865 LONGITUDE -97.8016 (NAD83)	MERCURY	0	6D	2006
	TCEQ									
		REM	CA	GARLAND CREOSOTING	32915	GARLAND ROAD NEAR SH 149, LONGVIEW	CREOSOTE CONSTITUENTS	5	6C	1997
			VC	FORMER HAINES GULF STATION	2452	607 STATE HIGHWAY 135 NORTH, KILGORE	VOCS, METALS	0B	6D	2015
				FORMER HONEY STOP FOOD MART 1	2675	3127 ESTES PARKWAY, LONGVIEW	BTEX, POLYCYCLIC AROMATIC HYDROCARBONS	0B	6D	2015
			VC/VCP	BOWEN TOOLS FACILITY - KILGORE	698	280 HWY 135 NORTH, KILGORE	TPH		6C	
		WPD	MSW	CITY OF LONGVIEW / CHEROKEE LANDFILL: MW-1	MSW00742	0.5 MI SW OF FM 1845, 0.5 MI SE OF FM 2087, LONGVIEW	TDS, CL, AND TOC.	2A	6C	1995
				CITY OF LONGVIEW / FM 1845 LANDFILL: MW-2 AND MW-3	MSW00267	1.0 MI S-SE OF THE INTERSECTI ON OF FM 1845/2206 AND CHEROKEE ST, LONGVIEW	TOC AND COD.	2A	6C	1995
				JOHN L HARDIN: MW-1 AND 2	MSW01527	1.3 MI W OF FM 1845 AND 1.0 MI NW OF US 259, LONGVIEW	TOC	2B	6C	1997
		WSD	PDW	E J WATER COMPANY	920023		BENZENE		6C	1999
				E J WATER COMPANY	G0920023C	3-ADDIE DR	BENZENE, PROPANE, BUTANE	2C	6C	2006
				E J WATER COMPANY	G0920023D	4-OLD OIL CNTR AREA	BENZENE		6C	2000
GUADALUPE										
	TCEQ									
		REM	VC/VCP	XERXES CORPORATION	1206	2001 PROFORM ROAD, SEGUIN	ACETONE		6C	

ATTACHMENT B

Newspaper Article Concerning Water Conservation

Proof of Publication

STATE OF TEXAS)
COUNTY OF GRAYSON) SS:

~~GCDA~~ RRGCD

RED RIVER GROUND CONSERVATION DISTRICT
PO BOX 1214
SHERMAN TX 75091

Account # **91652**
Ad Number **0001000995**

Jeanine Sewell, being 1st duly sworn, deposes and says: That (s)he is the Legal Clerk for the Herald Democrat, a daily newspaper regularly issued, published and circulated in the City of Sherman, County of Grayson, State of Texas, and that the advertisement,

10 WAYS TO CURB WATER USE

a true copy attached for, was published in said Herald Democrat in 1 edition(s) of said newspaper issued from 07/20/2017 to 07/20/2017, on the following days:
07 / 20 / 17

/s/ Jeanine Sewell
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 20th day of July, 2017

Notary Michelle Henderson

MICHELLE HENDERSON
Notary Public, State of Texas
Comm. Expires 05-01-2021
Notary ID 129407907

›'s travel ban to stay

ote on the issue.
an certainly start
the tea leaves,"
ssica Levinson, a
or at Loyola Law
in Los Angeles.
ost conservative of
servatives on the
ave been consis-
the travel ban. But
not a majority."
son cautioned that
s had not heard
nts over the ban
l could decide by
of the next term
e issue was moot.
ecause Trump has
ed his travel order
mporary anti-ter-
measure while
ernment reviews
procedures.
e Navas, a spokes-
r the Department
ice, said that the
istration "looks
l to presenting its
nts to the 9th Cir-

p's ban halts travel
U.S. by nationals
alia, Syria, Sudan,
Libya and Iran for
and stops all ref-
settlement for 120
ederal courts had
l the order from
y, when an origi-
oader version of
signed, until the
ne Court brought
to life last month.
the revised ban
nto effect June
state of Hawaii
ught the Trump
stration in feder-
rts over whom it
es. The Supreme
llowed the ban as
people with "bona
onnections to the
ch as close family,
rment, university
sion or relation-
with other institu-
vere exempt.
court mostly left
exceptions up to
etation.
overnment argues that the connections should include a parent, spouse, child, adult son or daughter, son-in-law, daughter-in-law, sibling, fiance or fiancee, and parents-in-law.

But it says grandparents, grandchildren, aunts, uncles, nieces, nephews, cousins and brothers- and sisters-in-law are not close enough to qualify for admission.

Lawyers representing Hawaii won an injunction limiting the travel ban after they challenged the government's definitions in a Honolulu federal district court. The state, which is among those challenging Trump's order in the Supreme Court, also argued that a refugee resettlement organization's interactions with a refugee constituted a bona fide relationship. It said that about 24,000 refugees had formal assurances from resettlement agencies for relocation assistance. It said those relationships should be counted as a "bona fide."

On July 13, one day after the U.S. hit a 50,000 cap on refugee admissions that blocked all refugees except those with close family in the country, U.S. District Judge Derrick K. Watson issued an order largely granting Hawaii's requests.

The Department of Justice challenged his order in the 9th Circuit and in the Supreme Court.

But "the court refused to grant the government's request to clarify its June ruling on close family relationships," said University of Richmond law professor Carl Tobias.

Immigrant and refugee advocates had mixed reactions to Wednesday's order.

"This has been a very, very challenging experience for all of us," the Kentucky Republican said. "It's pretty obvious that we don't have 50 members who can agree on a replacement."

Senate Republicans could only afford two defections from their 52-member conference in a scenario under which Vice President Mike Pence would cast a tie-breaking vote.

McConnell acknowledged if Republicans fail to call up a repeal-only vote — based on expected objections from three senators — they'll move on to other priorities, such as a tax overhaul and an infrastructure package.

Despite the problems their Senate colleagues have faced making the math work on health care, House Republicans at least appear ready to take the same approach to overhauling the tax code.

"I feel like it's our only option," Republican Study Committee Chairman Mark Walker said.

The GOP shouldn't abandon the effort to repeal and replace the 2010 health care law, the North Carolina Republican said.

"I talked the speaker earlier today. I don't feel like that we can give up just because the Senate laid an egg," Walker said. "I think it's time for bicameral meetings to get together and talk about our differences and try to put something together. We owe it to the American people."

With health care stalled, Republicans could rewrite the fiscal 2017 reconciliation instructions for a tax overhaul and save the fiscal 2018 vehicle for a possible health care breakthrough, House Freedom

absolutely there."

The House Budget Committee released its fiscal 2018 budget resolution Tuesday with reconciliation instructions for a deficit neutral tax overhaul and $203 billion in mandatory savings. The blueprint calls for combining the tax and spending proposals the committees come up with under those instructions into a single reconciliation measure. It's unlikely the Senate would back that approach.

House Ways and Means Chairman Kevin Brady said reconciliation gives Republicans a vehicle to get a tax overhaul to President Donald Trump's desk.

"And by the way, it doesn't preclude Democratic engagement and support to get there," the Texas Republican said. "In fact, we continue to

through reconciliation.

New York Rep. Tom Reed, also a Ways and Means member, said he would like to see a bipartisan tax overhaul. The Problem Solvers Caucus, a bipartisan group he co-chairs, has discussed the topic, he said. However, GOP leaders appear set on using reconciliation to set up a partisan process.

"The fundamental decision has already been made, and they're going to go that path," Reed said. "But you know, I'm always a proponent of ... have a Plan A but always have a Plan B. Hope for the best, prepare for the worst. So if we find ourselves in the exact same position where I think we possibly could be, I'm going to continue to work across the aisle to see if we can't put a deal together."

ATTACHMENT C

Presentations to Public by General Manager

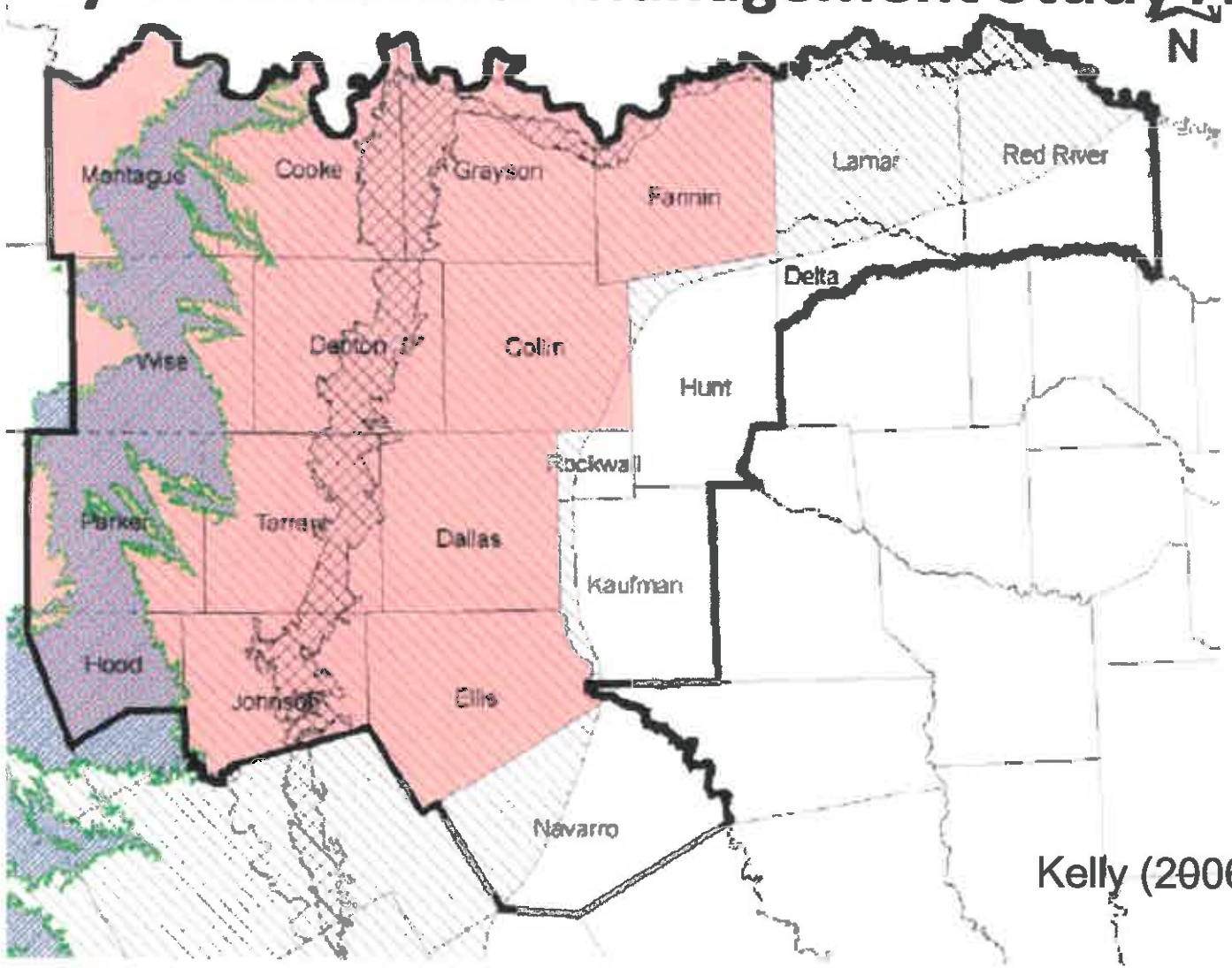
Presentation to Texoma Area Water Operators
October 5, 2017

RED RIVER
GROUNDWATER CONSERVATION DISTRICT

Creation of groundwater districts in North Central Texas

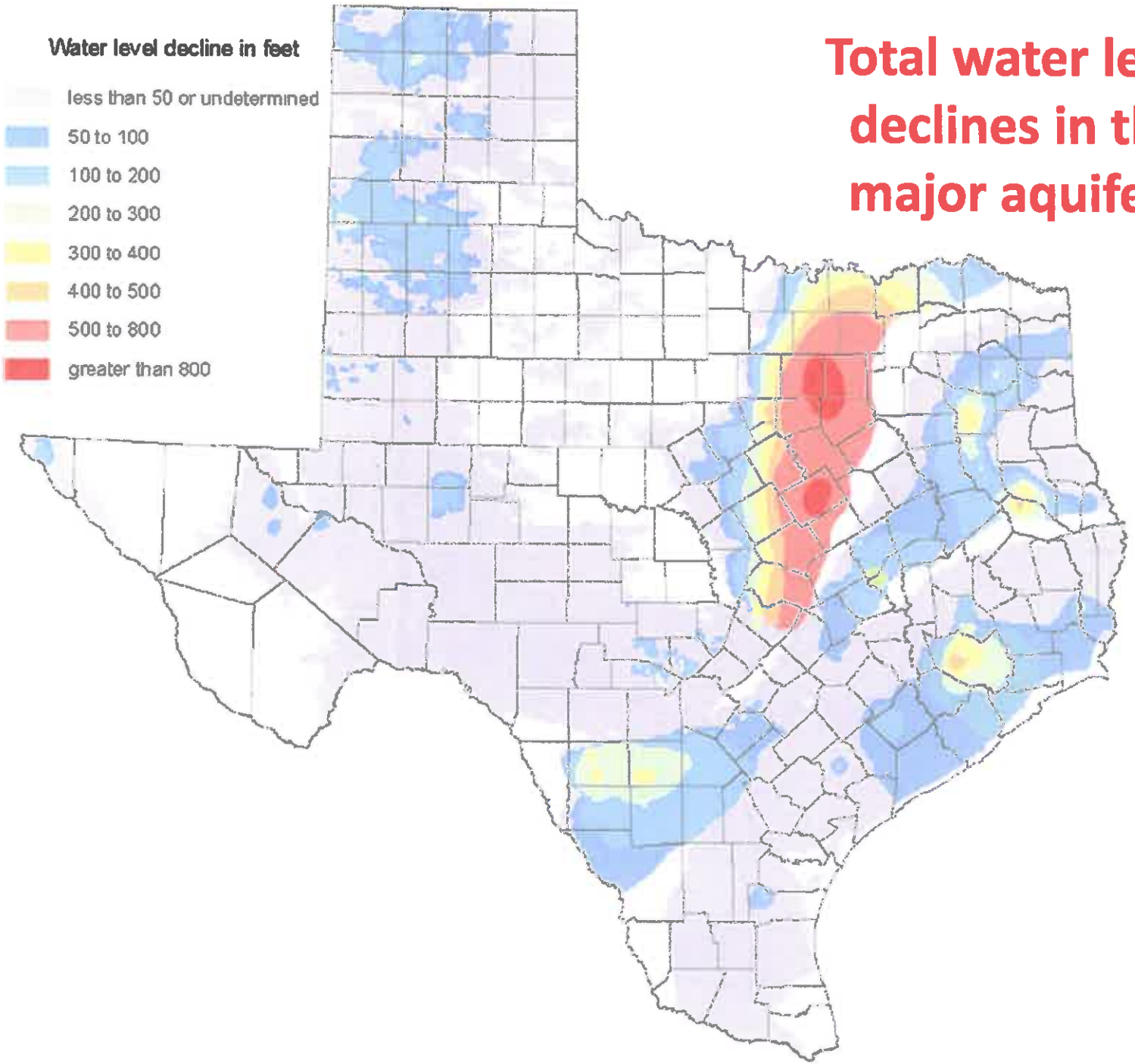
- In 1997 Senate Bill I, enacted by the Texas Legislature, confirmed that "groundwater conservation districts... are the state's preferred method of groundwater management through rules developed, adopted and promulgated by a district..."
- In 2007 the Texas Commission on Environmental Quality issued a report advising one or more groundwater conservation districts would need to be created in the 13-county area of North Central Texas, including Fannin and Grayson Counties

North Texas
Priority Groundwater Management Study Area



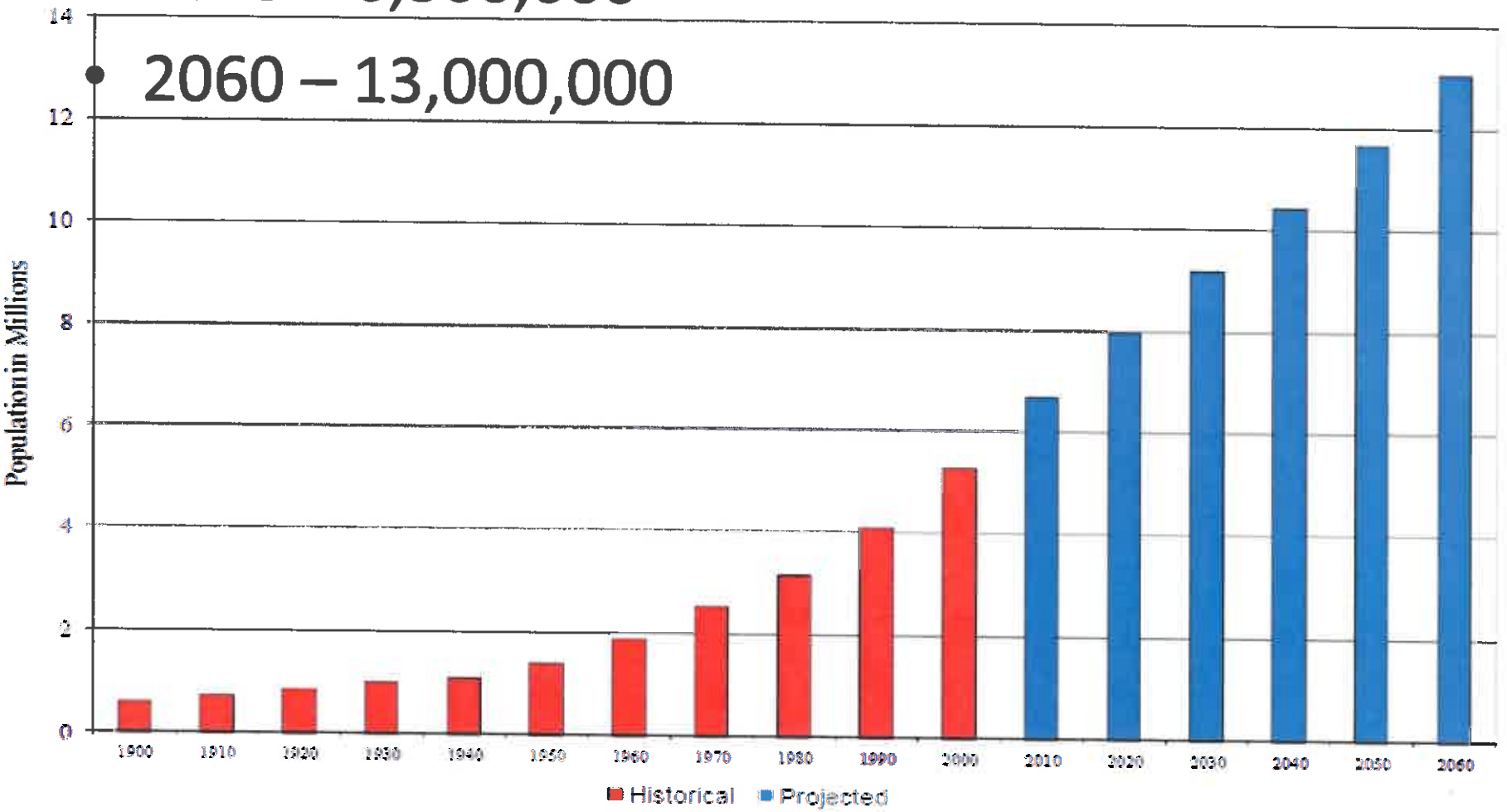
Kelly (2006; TCEQ)

Total water level declines in the major aquifers



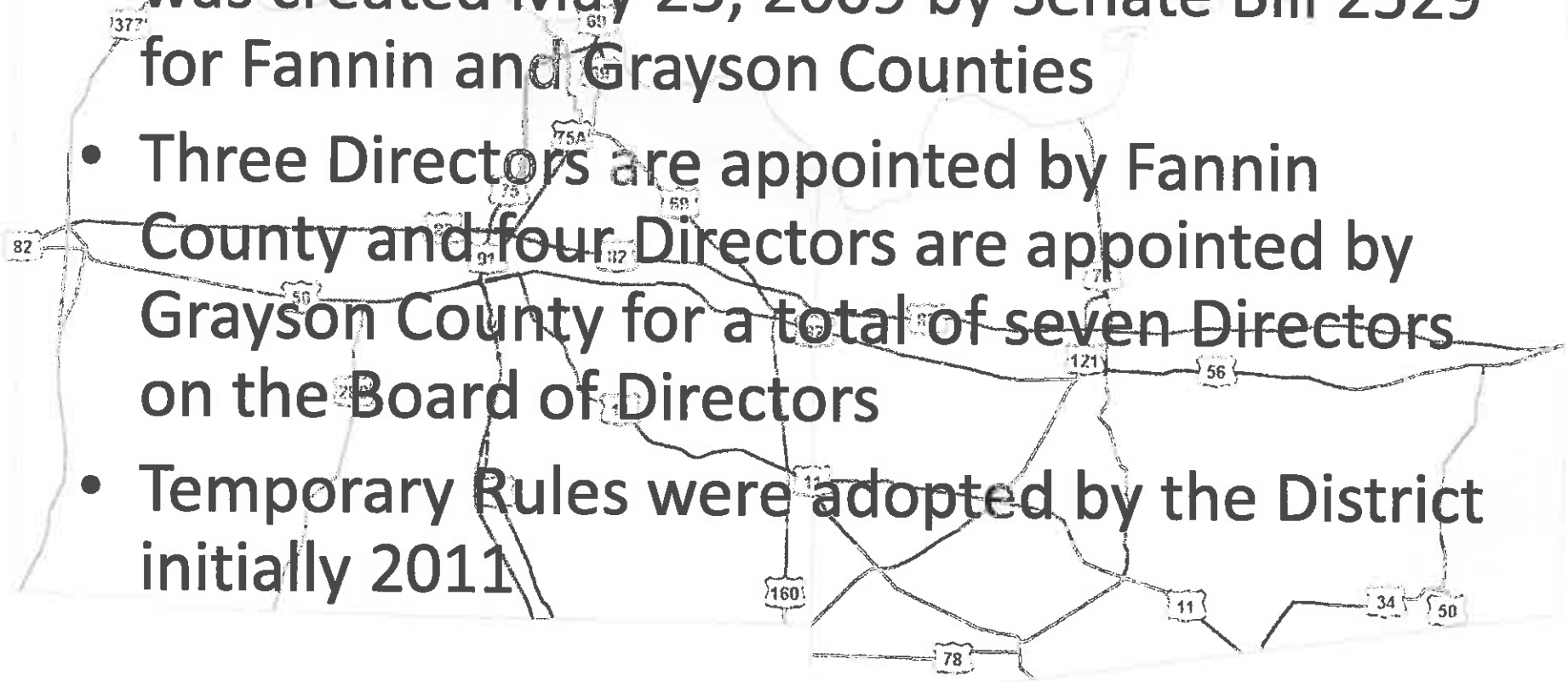
Population Growth in Region C

- 2010 – 6,300,000
- 2060 – 13,000,000



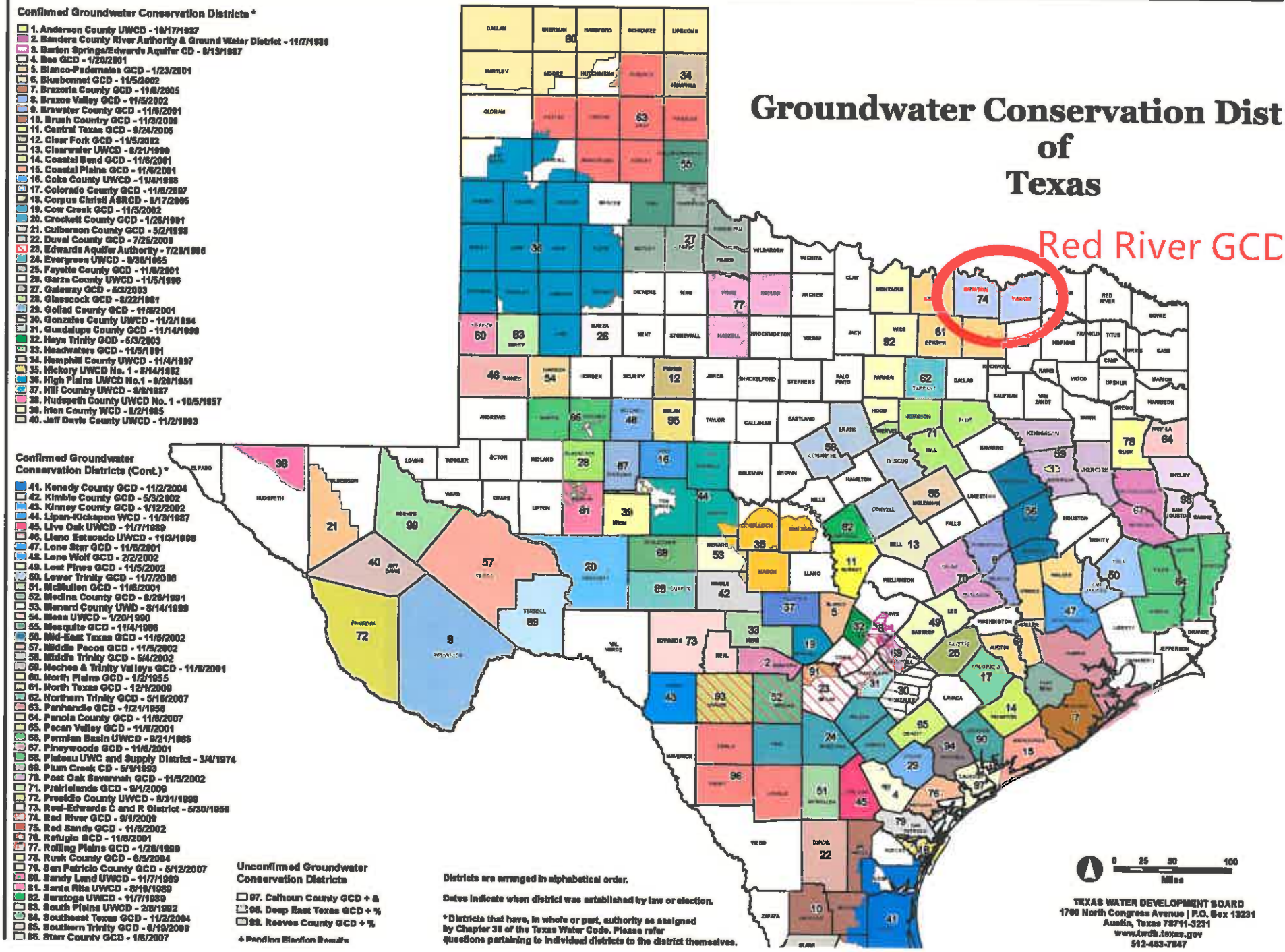
About the Red River Groundwater Conservation District

- Red River Groundwater Conservation District was created May 25, 2009 by Senate Bill 2529 for Fannin and Grayson Counties
- Three Directors are appointed by Fannin County and four Directors are appointed by Grayson County for a total of seven Directors on the Board of Directors
- Temporary Rules were adopted by the District initially 2011



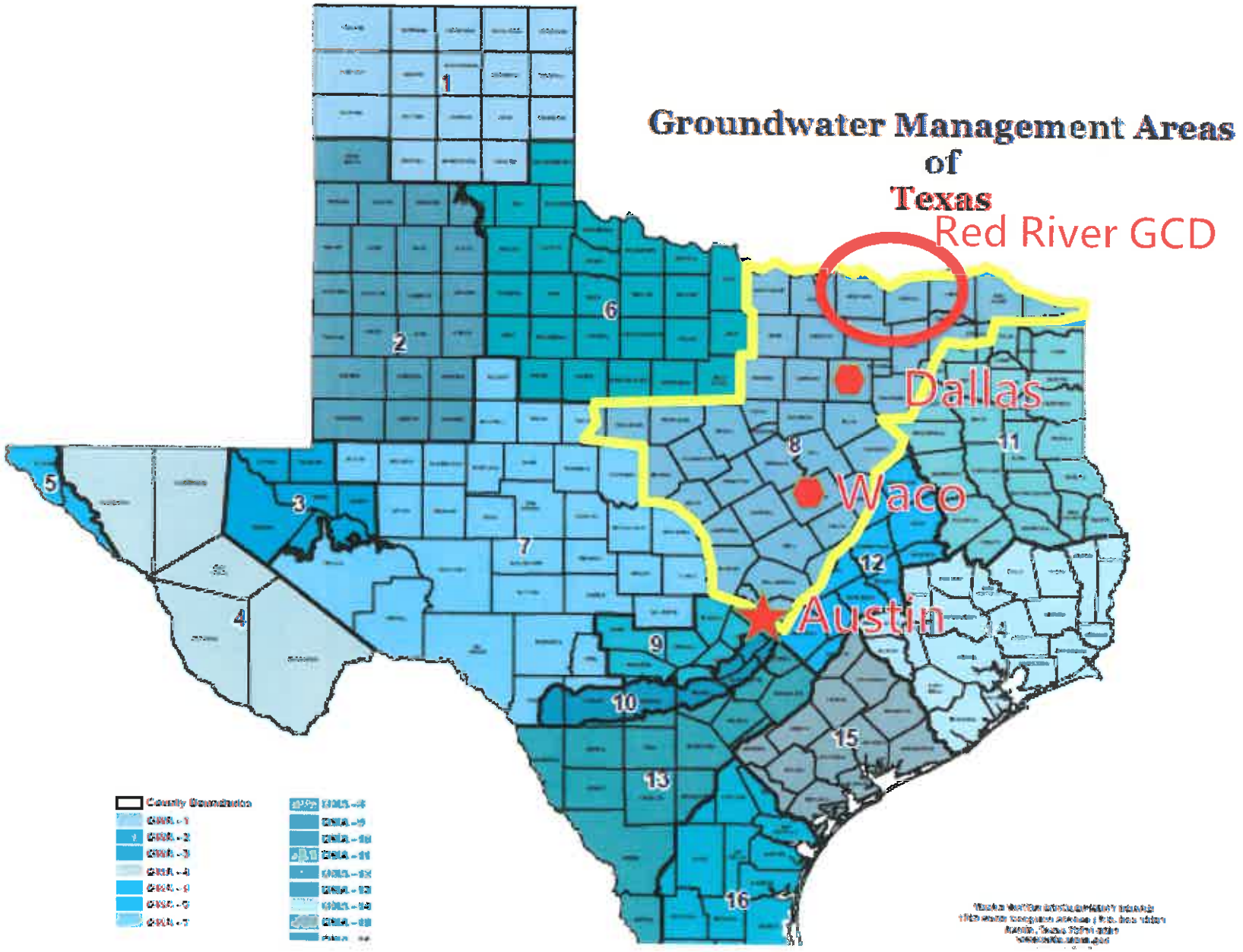
Groundwater Conservation Dist of Texas

Red River GCD

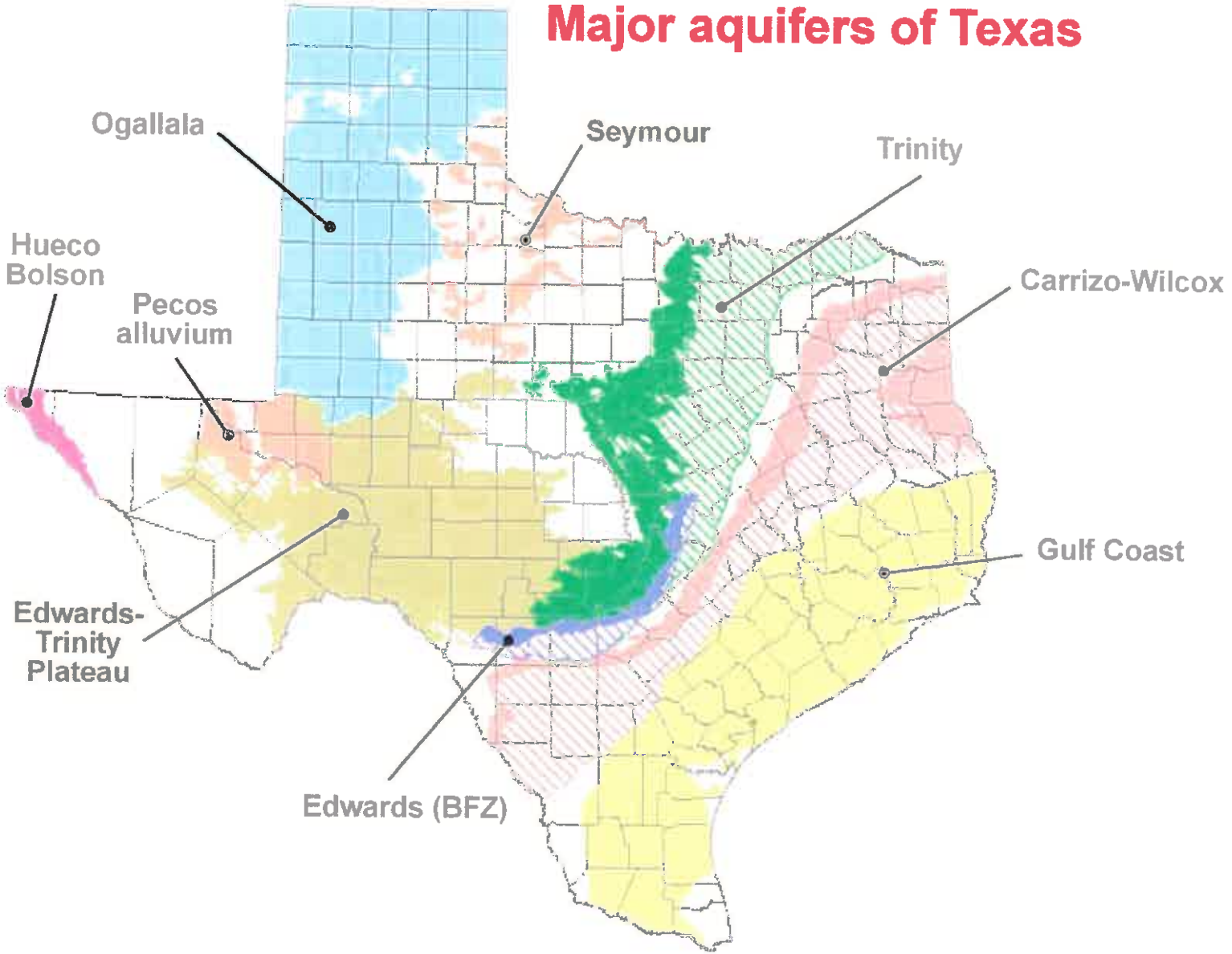


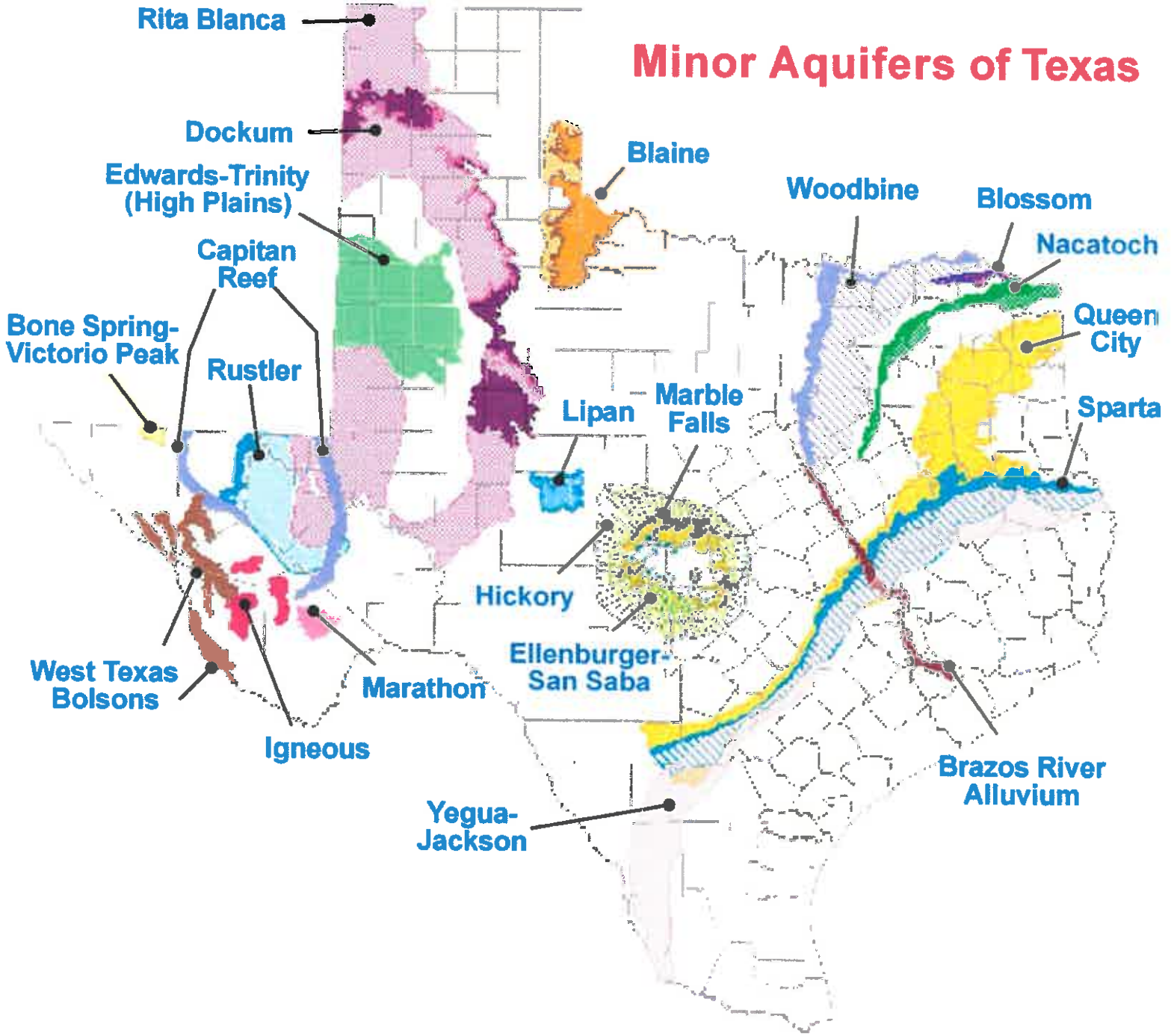
TEXAS WATER DEVELOPMENT BOARD
1700 North Congress Avenue | P.O. Box 13231
Austin, Texas 78711-3231
www.twdb.texas.gov
512-463-7847

Joint Planning – GMAs map



Major aquifers of Texas



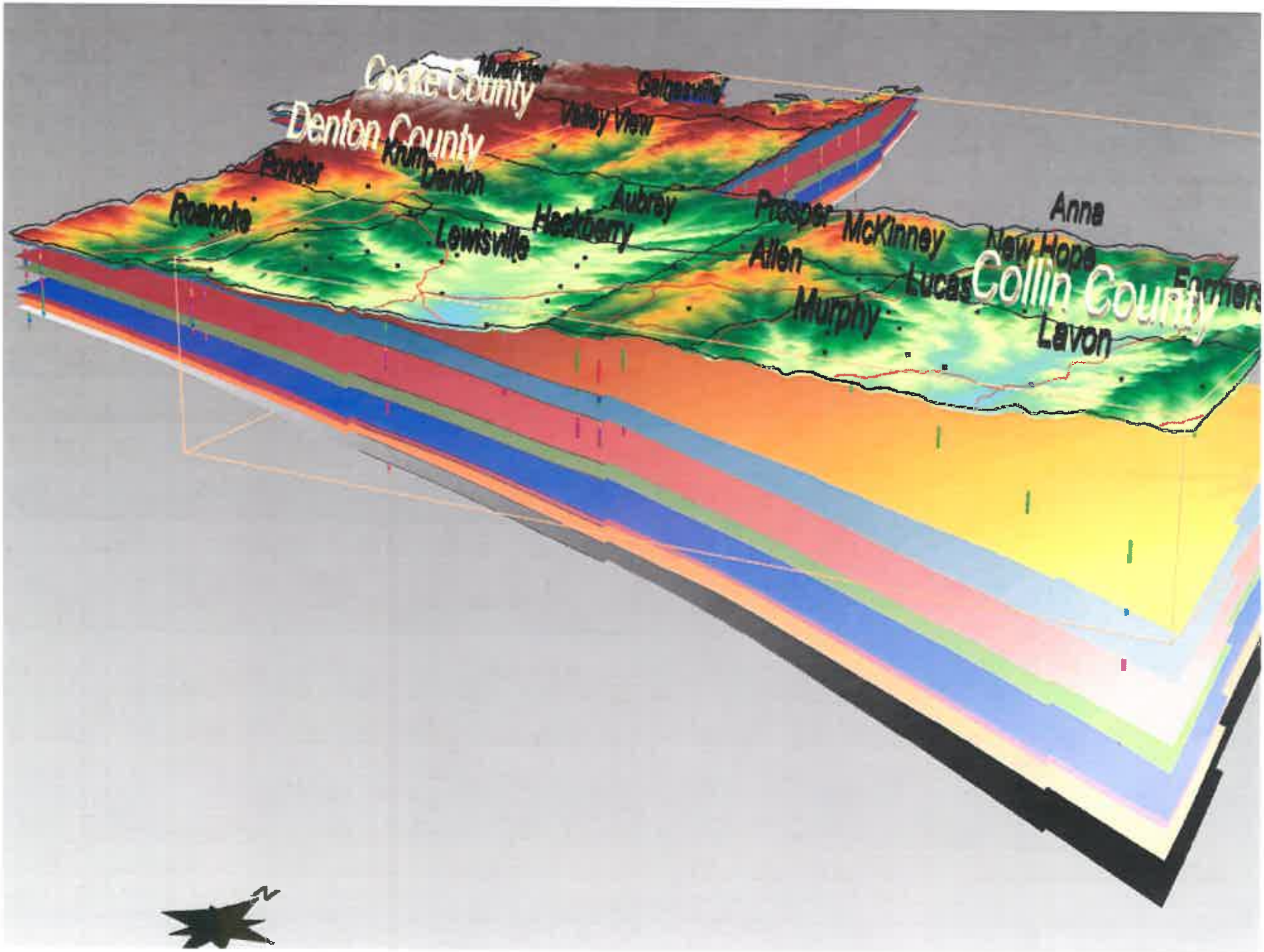

Minor Aquifers of Texas
Rita Blanca
Dockum
Edwards-Trinity (High Plains)
Capitan Reef
Bone Spring-Victorio Peak
Rustler
Blaine
Woodbine
Blossom
Nacatoch
Queen City
Sparta
Lipan
Marble Falls
Hickory
Ellenburger-San Saba
West Texas Bolsons
Marathon
Igneous
Yegua-Jackson
Brazos River Alluvium

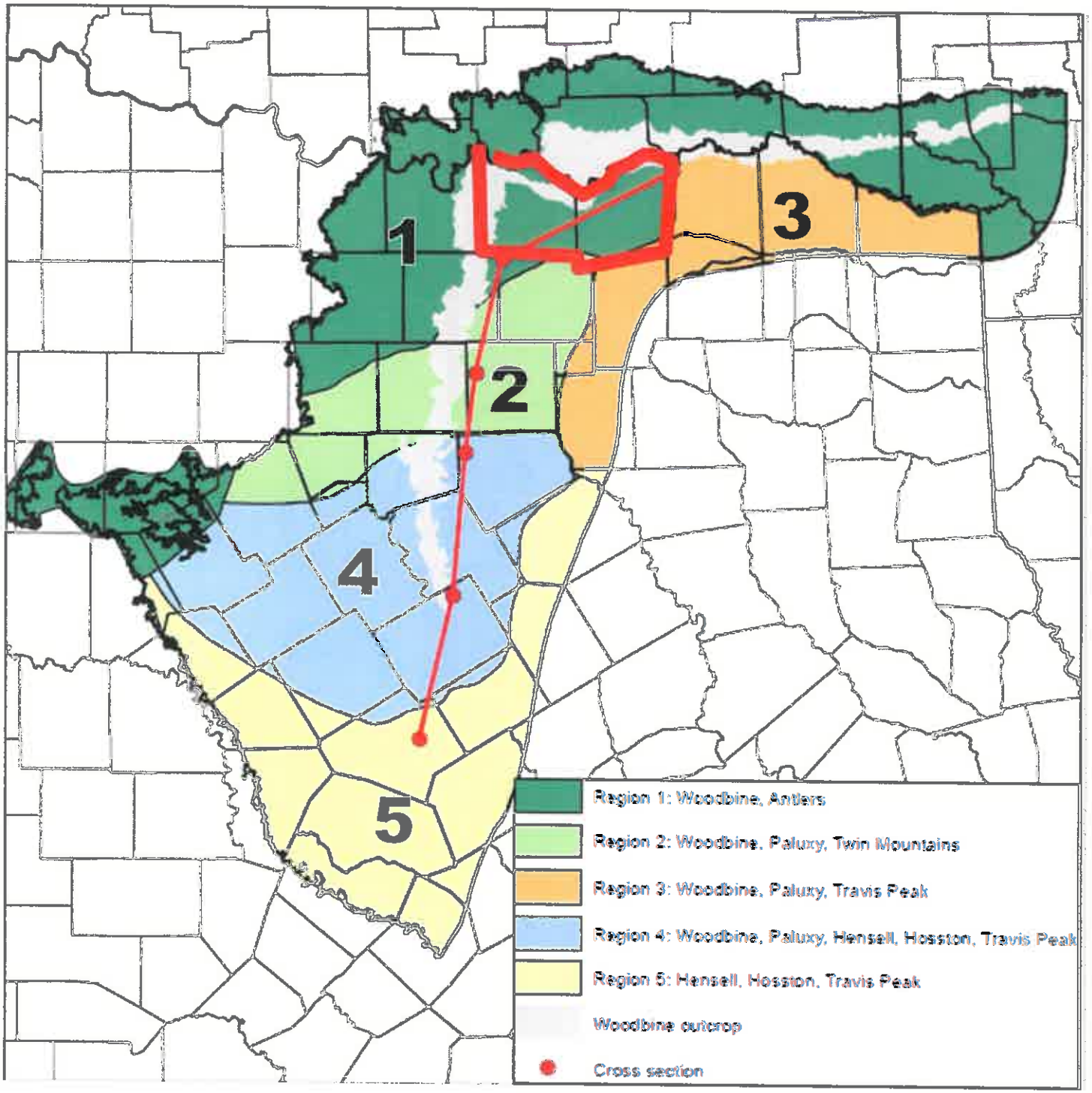
Desired Future Conditions

- Way of determining how much water is available to be used by well owners
- On April 1,2016, the GMA 8 voted to established a DFC
- GAM determines the amount of groundwater in the aquifer and the DFC is the amount of water that will be left in 50 years. The difference is the amount that can be used

What is a GAM?

- A Groundwater Availability Model (GAM) is a geophysical study of the aquifer to determine the amount of water contained within the aquifer

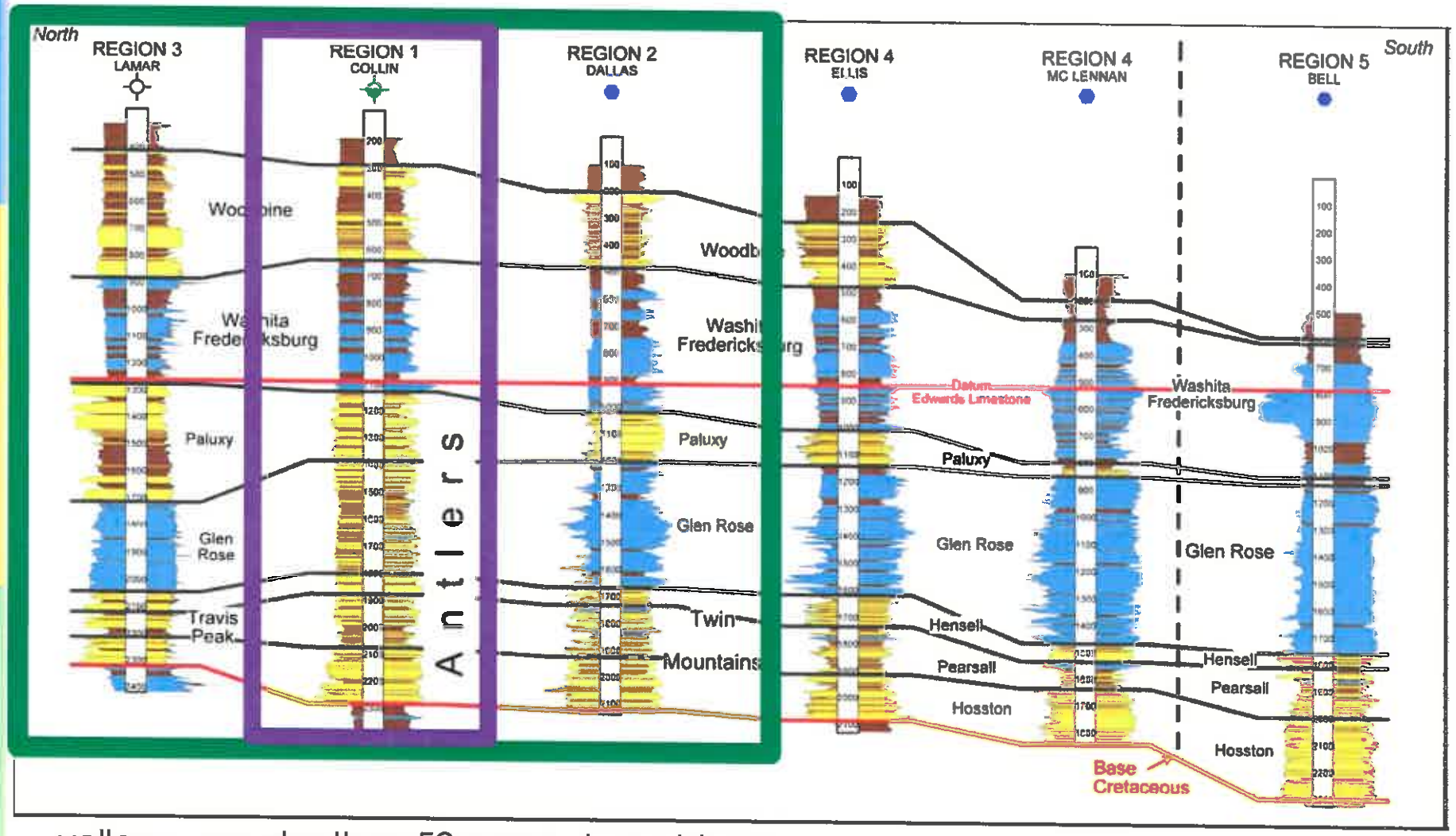

Cooke County
Denton County
Valley View
Krum
Denton
Pondar
Roanoke
Lewisville
Aubrey
Hackberry
Prosper
Allen
McKinney
Anne
New Hope
Lucas
Collin County
Murphy
Lavon



Hydrogeologic Regions in Northern Trinity Aquifer

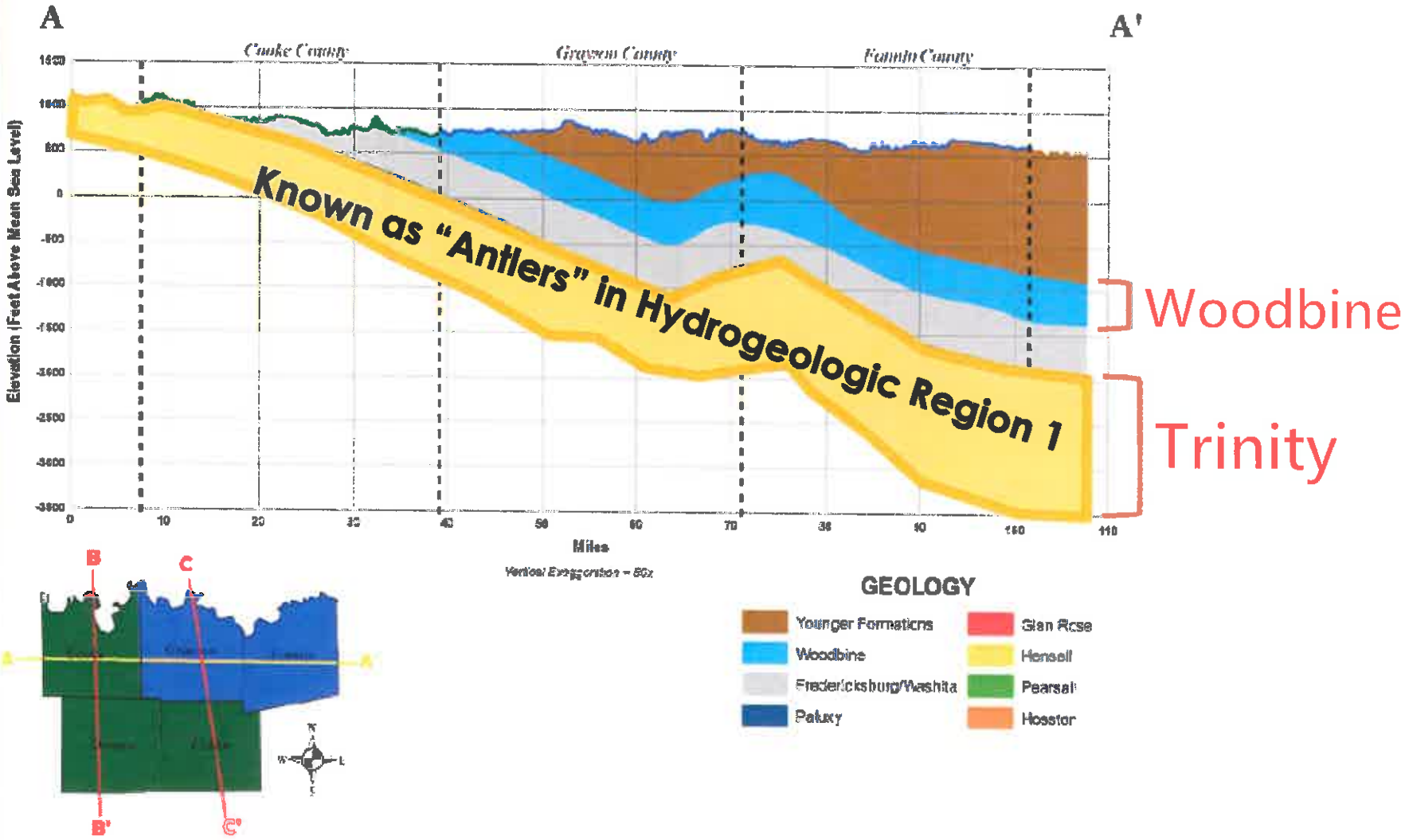
Hydrogeologic regions are generalized areas defined by stratigraphic and lithologic similarities and aquifer names common to each region.

Northern Trinity Aquifer



yellow = greater than 50 percent sandstone
blue = greater than 50 percent limestone
brown = greater than 50 percent shale (very impervious)

Model Layers (Woodbine and Trinity)



What are the districts doing now?

Rulemaking

- After public hearings, the District adopted
  - Management Plan
  - Temporary Rules
- In Temporary Rules, exempt wells were defined as
  - Used solely for Domestic, Livestock or Poultry purposes
  - Or wells with production capacity less than 27.7 gpm

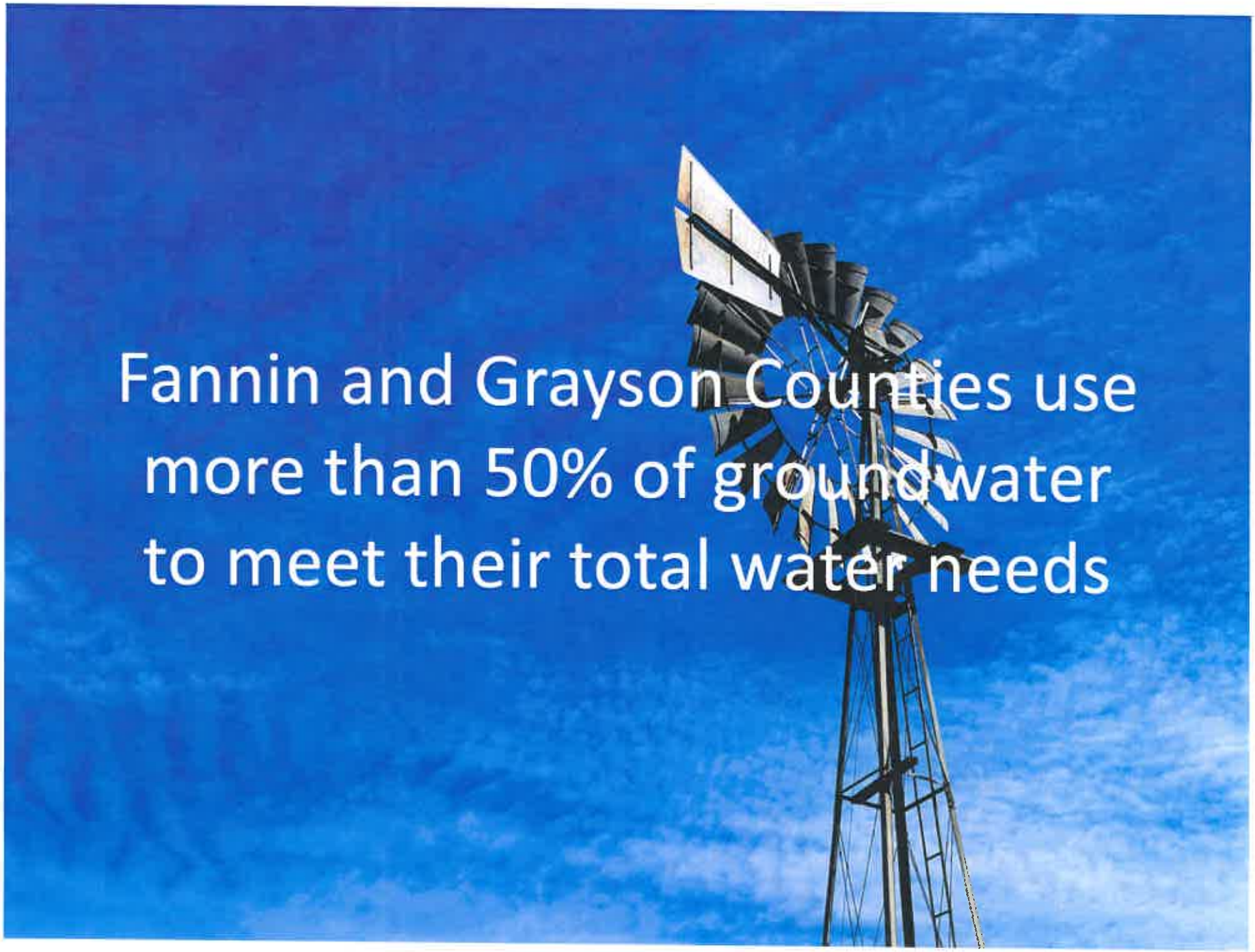
Permanent Rules

- Currently being discussed by the District
- Permanent Rules will include spacing requirements for new wells and production permits
- District is working to have the Permanent Rules in place by 2018

Fees

- **LOWEST FEES IN REGION**
- $0.07 per 1,000 gallons
- Groundwater production fees are collected from non-exempt well owners
- RRGCD does not charge for agricultural use


Over 59% of Texas' Total Water Supply
is from Groundwater


Fannin and Grayson Counties use
more than 50% of groundwater
to meet their total water needs

Questions?

Need more info, visit us at www.redrivergcd.org

Drew Satterwhite, P.E.
General Manager
Red River Groundwater Conservation

Presentation to Texoma Area Water Operators October 5, 2017

Presentation to GTUA Board of Directors
December 18, 2017

RED RIVER
GROUNDWATER CONSERVATION DISTRICT

NTGCD

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

Creation of groundwater districts in North Central Texas

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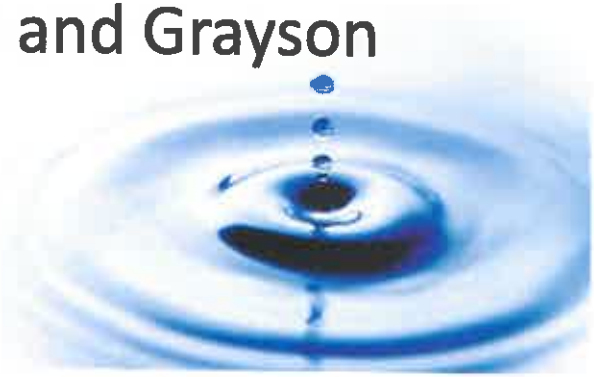
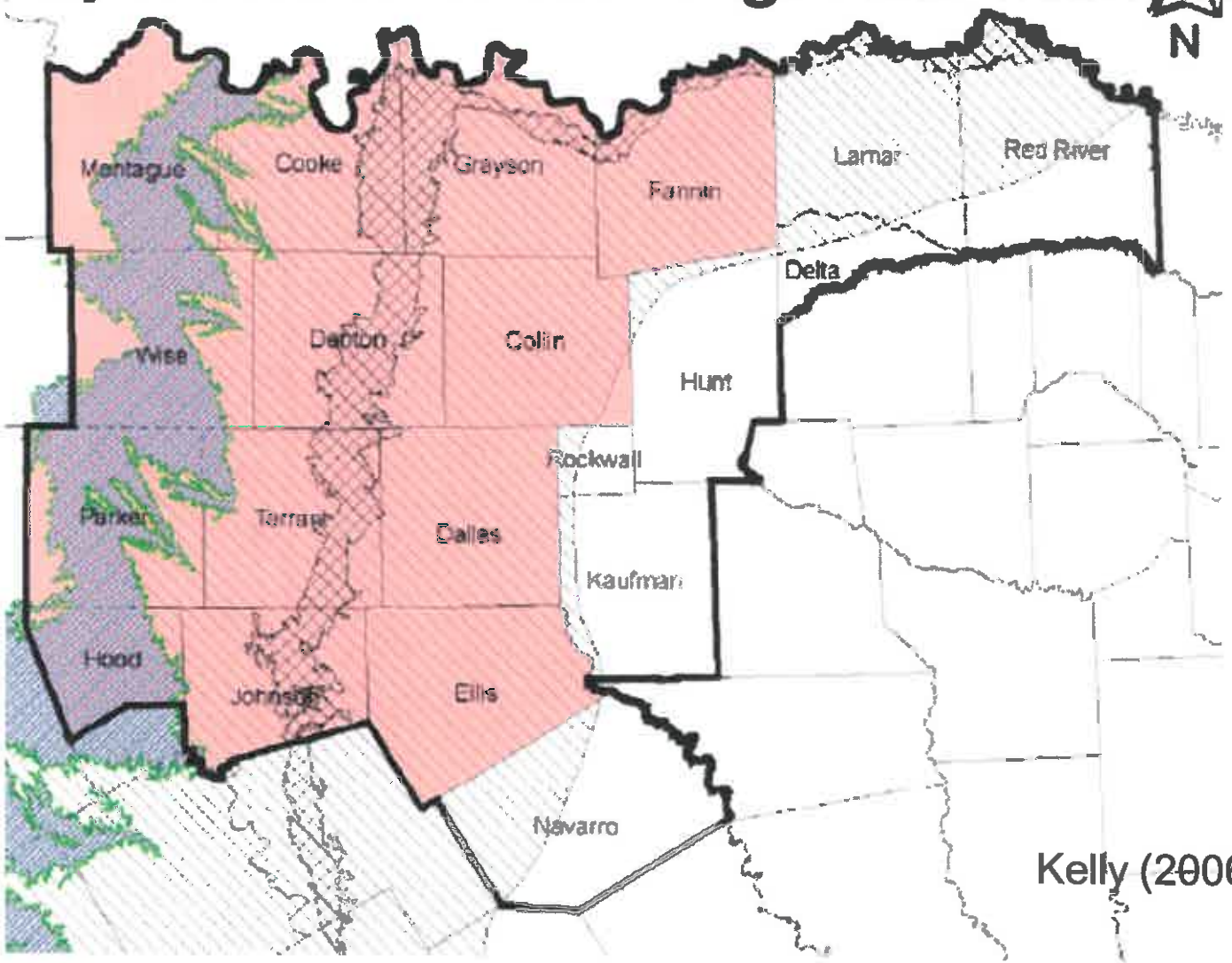
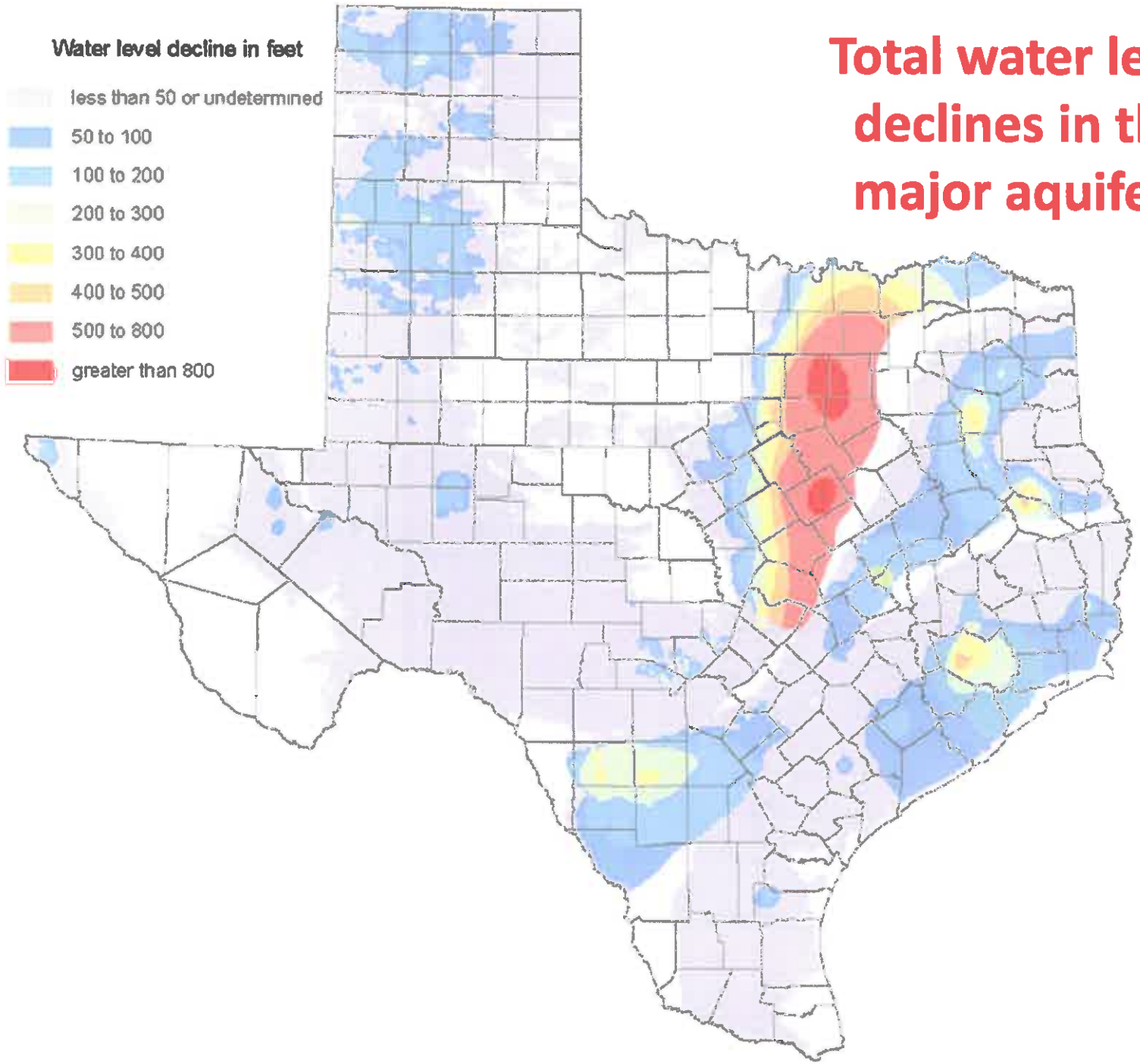


North Texas
Priority Groundwater Management Study Area



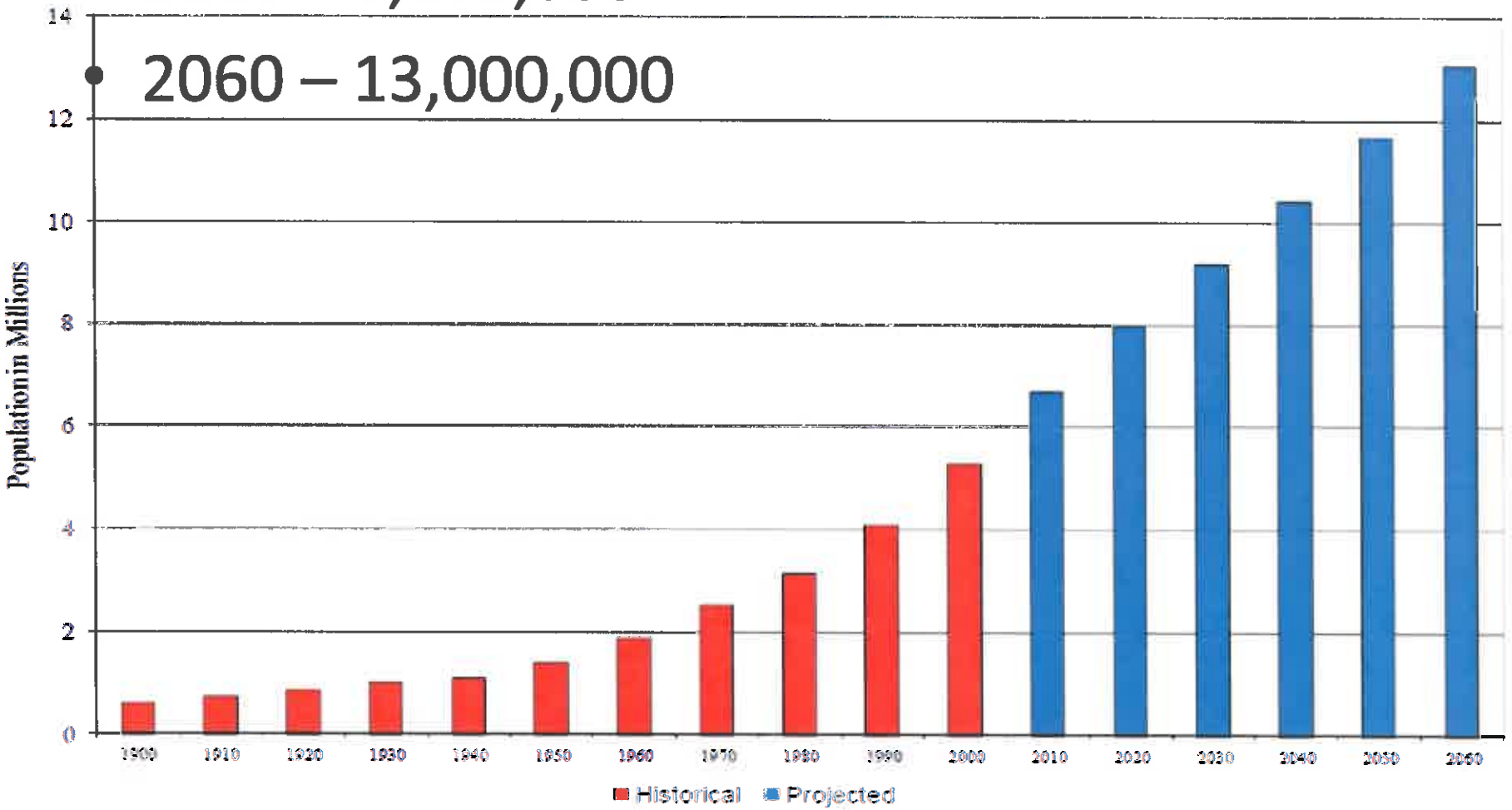
Kelly (2006; TCEQ)

Total water level declines in the major aquifers



Population Growth in Region C

- 2010 – 6,300,000
- 2060 – 13,000,000



Population Growth in GCDs

	North Texas GCD										
	Historical			Projections						Add'l residents	% Growth from
	1990	2000	2010	2020	2030	2040	2050	2060	2070	from '20 to '70	'20 to '70
Collin	264,036	491,774	782,341	956,716	1,116,830	1,363,229	1,646,663	1,853,878	2,053,638	1,096,922	115%
Cooke	30,777	36,363	38,437	42,033	45,121	48,079	53,532	64,047	96,463	54,430	129%
Denton	273,525	432,976	662,614	901,645	1,135,397	1,348,271	1,576,424	1,846,314	2,090,485	1,188,840	132%
Total	568,338	961,113	1,483,392	1,900,394	2,297,348	2,759,579	3,276,619	3,764,239	4,240,586	2,340,192	123%

	Red River GCD										
	Historical			Projections						Add'l residents	% Growth from
	1990	2000	2010	2020	2030	2040	2050	2060	2070	from '20 to '70	'20 to '70
Grayson	95,021	110,595	120,877	134,785	148,056	164,524	185,564	250,872	344,127	209,342	155%
Fannin	24,804	31,242	33,915	38,346	43,391	52,743	69,221	101,915	138,497	100,151	261%
Total	119,825	141,837	154,792	173,131	191,447	217,267	254,785	352,787	482,624	309,493	179%

About the Red River Groundwater Conservation District

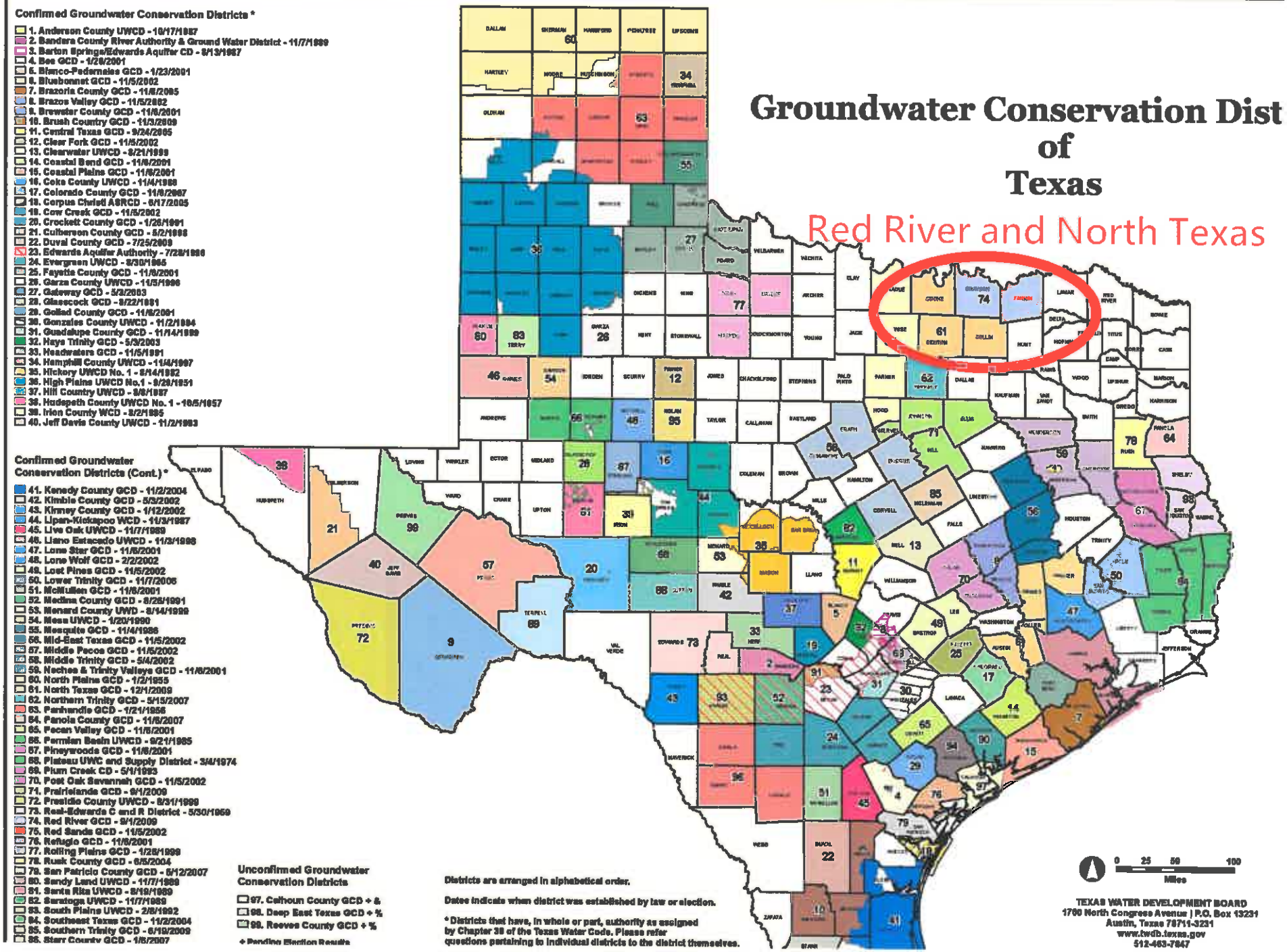
- Red River Groundwater Conservation District was created May 25, 2009 by Senate Bill 2529 for Fannin and Grayson Counties
- Three Directors are appointed by Fannin County and four Directors are appointed by Grayson County for a total of seven Directors on the Board of Directors
- The District entered into a Management Agreement with the GTUA to provide management and staffing for the District beginning in 2011.

About the North Texas Groundwater Conservation District

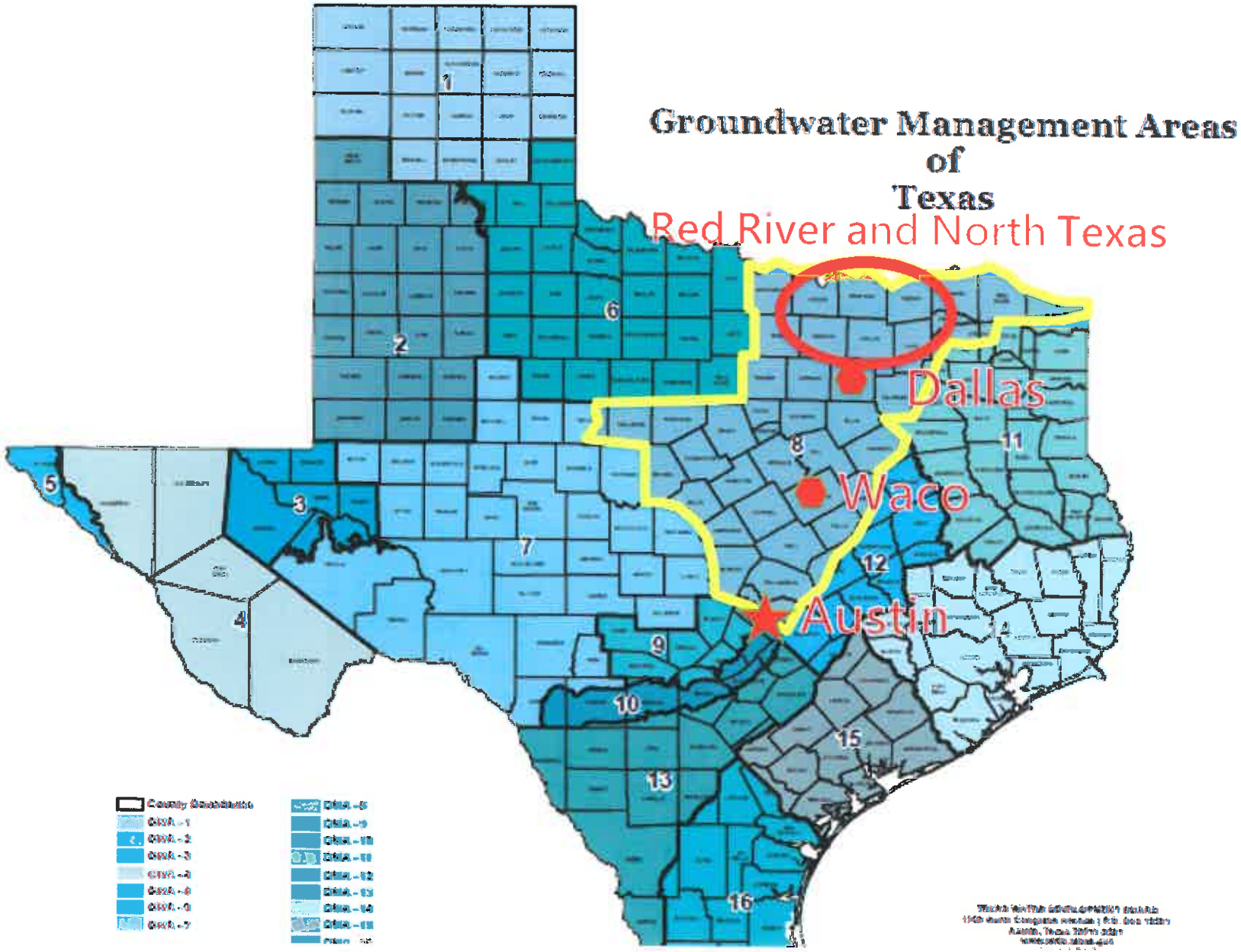
- North Texas Groundwater Conservation District was created May 27, 2009 by Senate Bill 2497 for Collin, Cooke and Denton Counties
- 3 Directors are appointed by each participating County for a total of nine Directors on the Board of Directors
- The District entered into a Management Agreement with the GTUA to provide management and staffing for the District beginning in 2011.

Groundwater Conservation Dist of Texas

Red River and North Texas



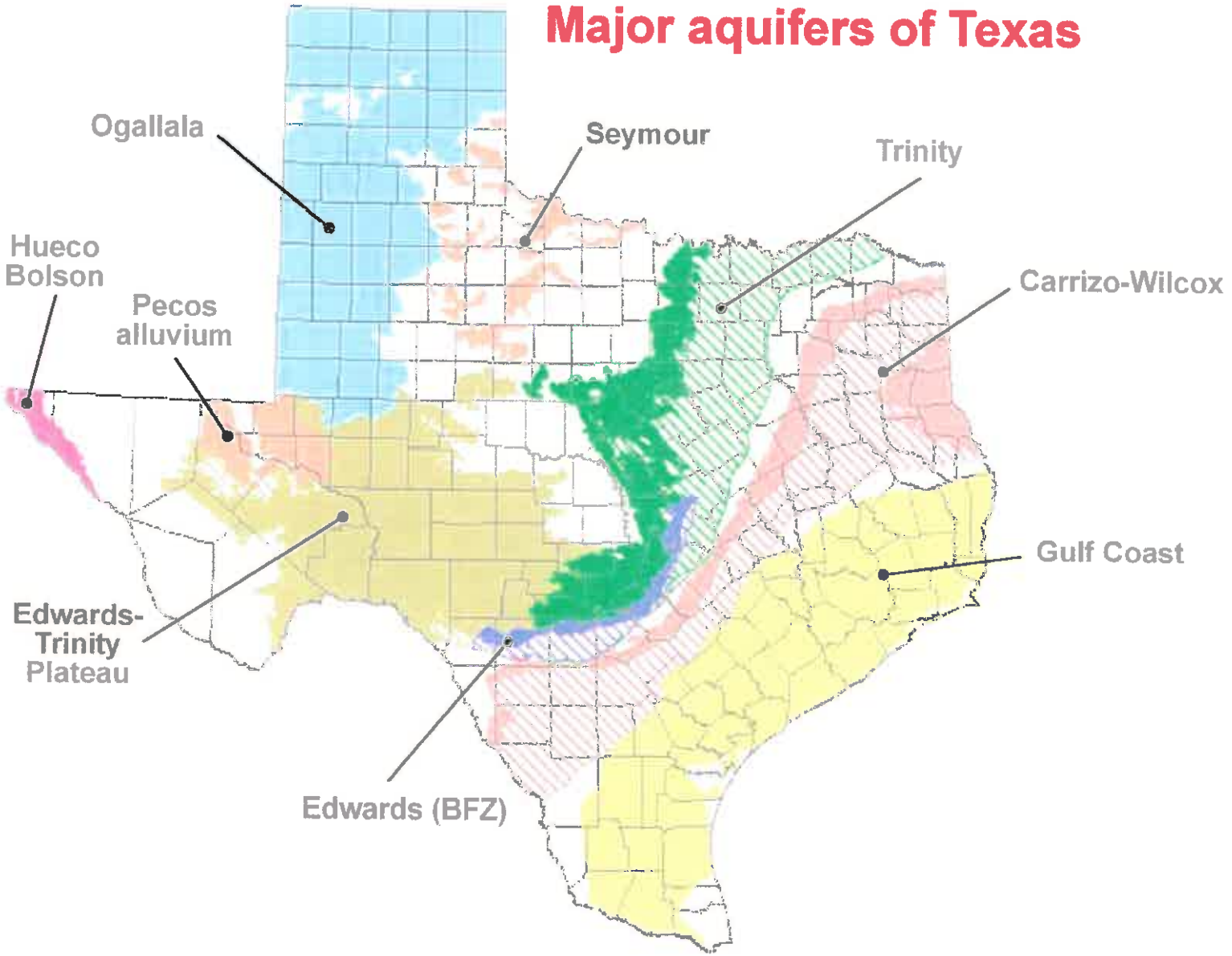
Joint Planning – GMAs map

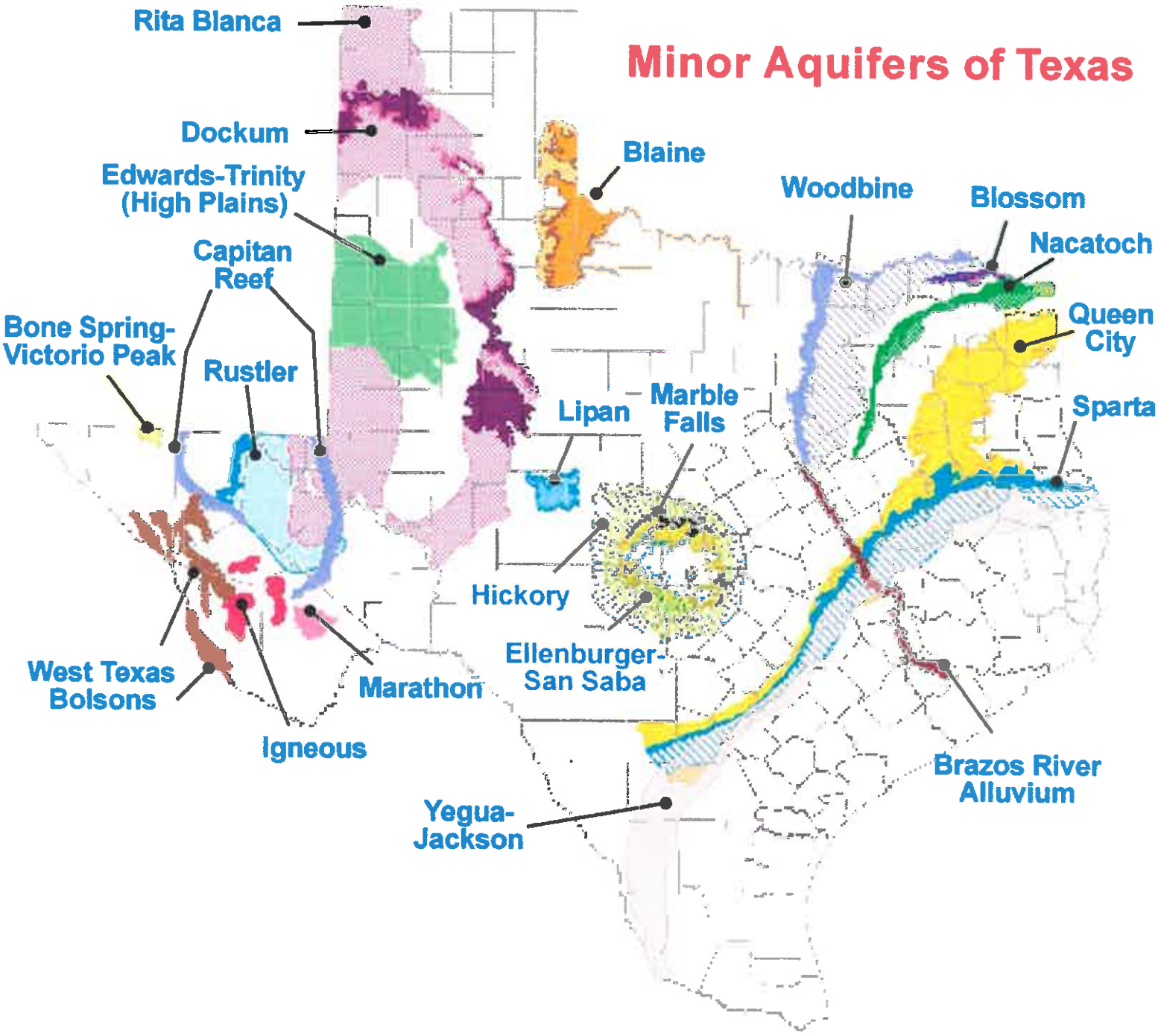


Desired Future Conditions

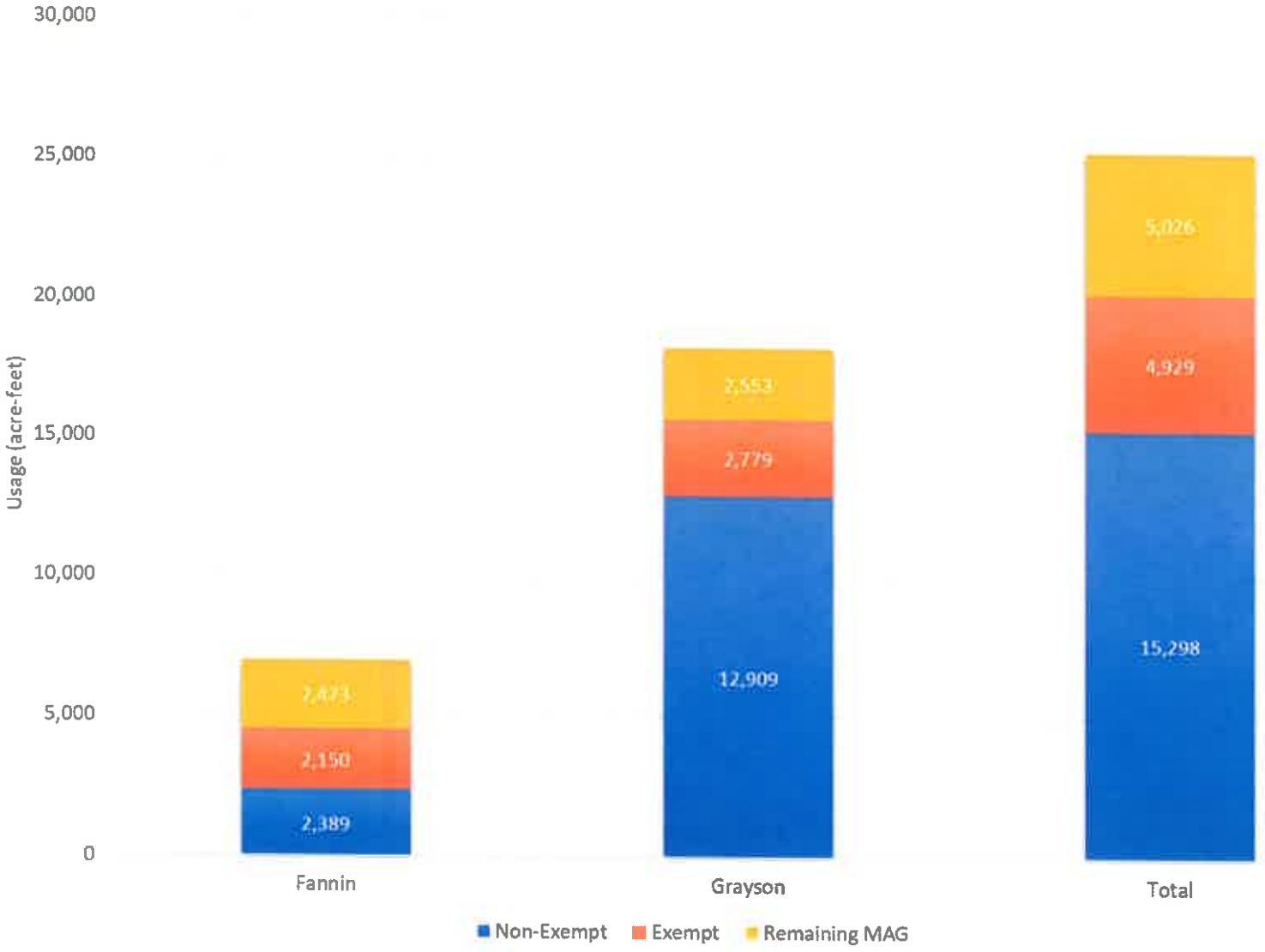
- Way of determining how much water is available to be used by well owners
- On April 1,2016, the GMA 8 voted to established a DFC
- GAM determines the amount of groundwater in the aquifer and the DFC is the amount of water that will be left in 50 years. The difference is the amount that can be used

Major aquifers of Texas

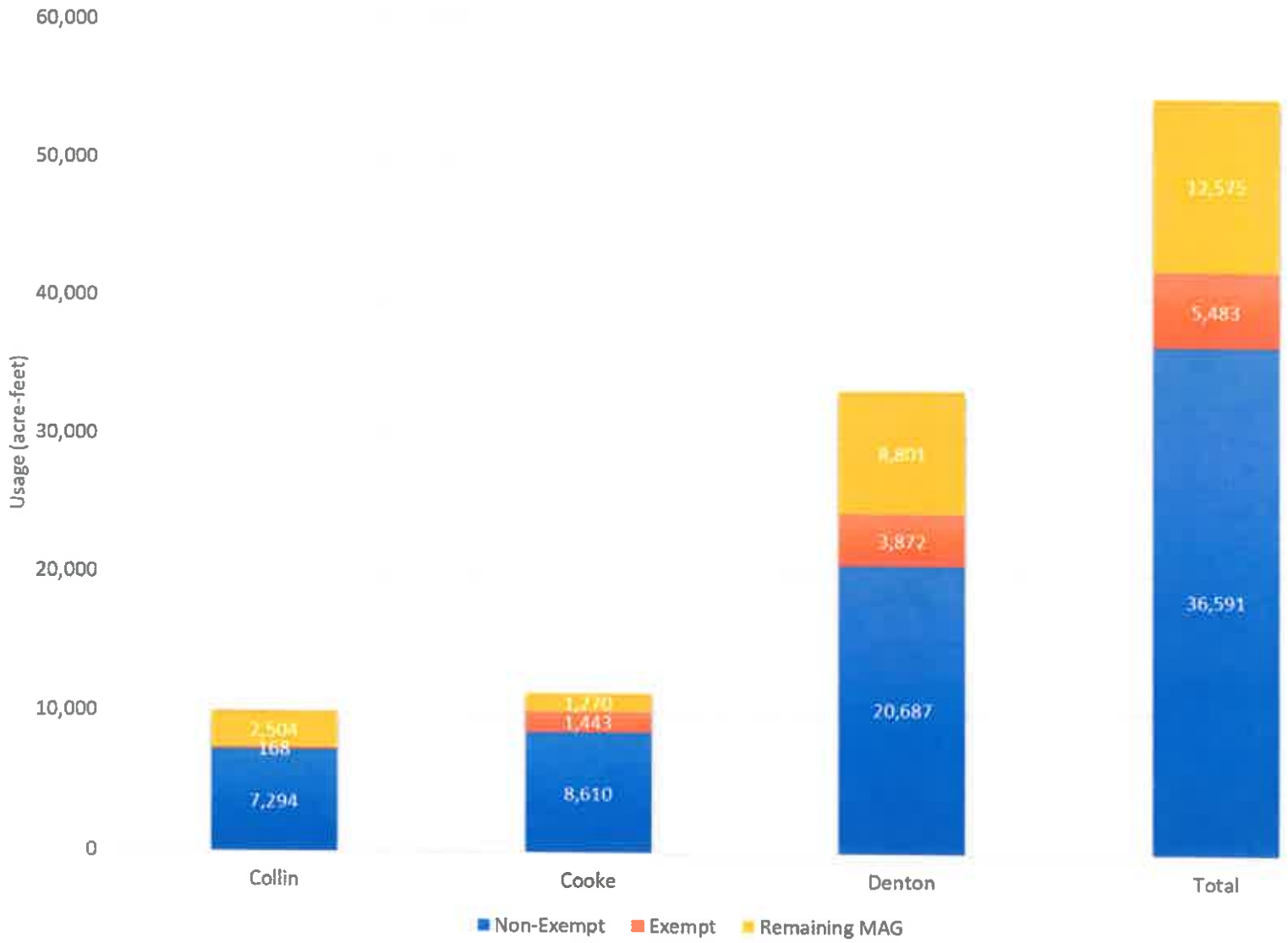



Minor Aquifers of Texas
Rita Blanca
Dockum
Edwards-Trinity (High Plains)
Capitan Reef
Bone Spring-Victorio Peak
Rustler
Blaine
Lipan
Marble Falls
Hickory
Ellenburger-San Saba
Marathon
West Texas Bolsons
Igneous
Yegua-Jackson
Woodbine
Blossom
Nacatoch
Queen City
Sparta
Brazos River Alluvium

Red River DFC

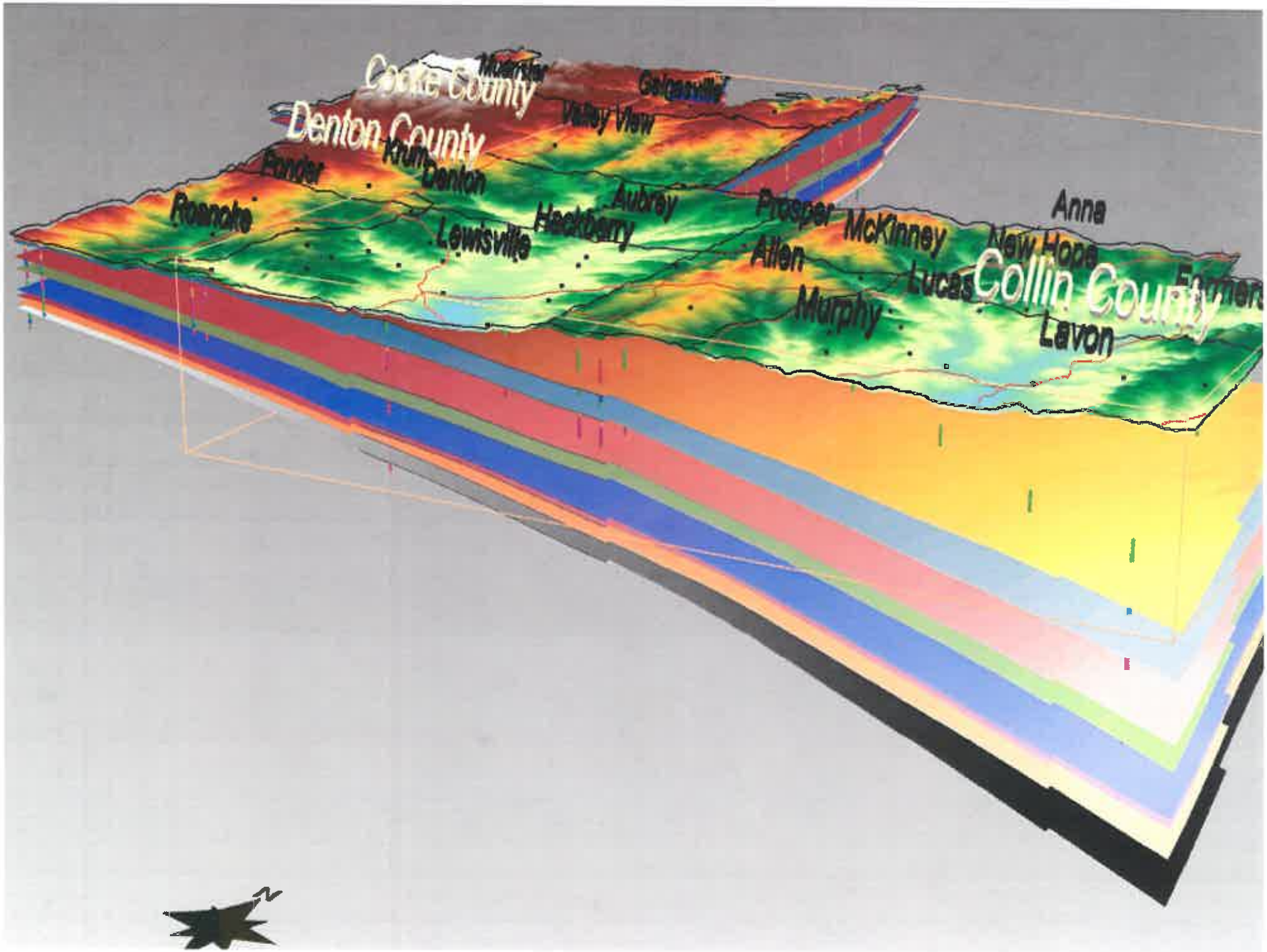


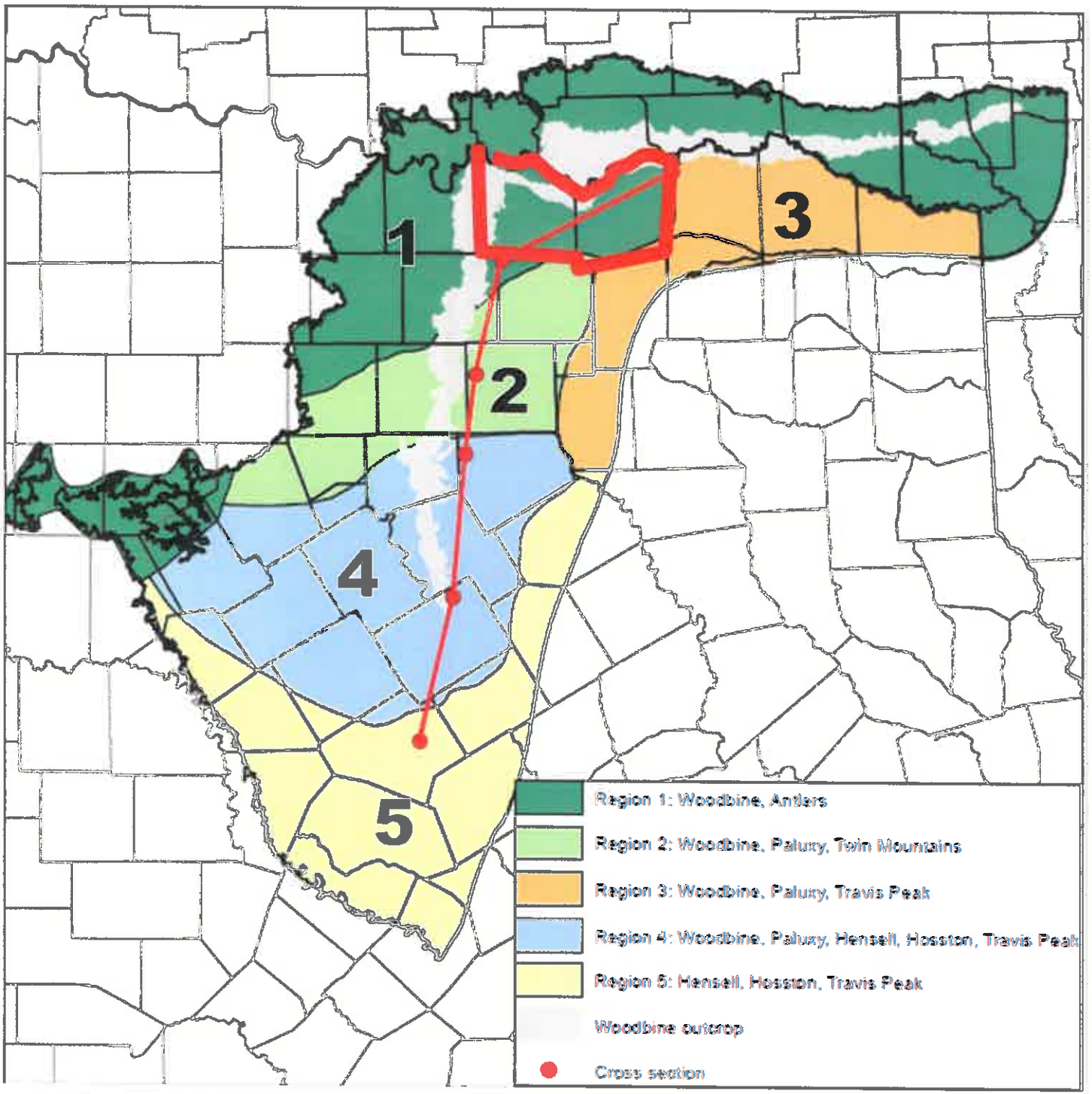
North Texas DFC



What is a GAM?

- A Groundwater Availability Model (GAM) is a geophysical study of the aquifer to determine the amount of water contained within the aquifer

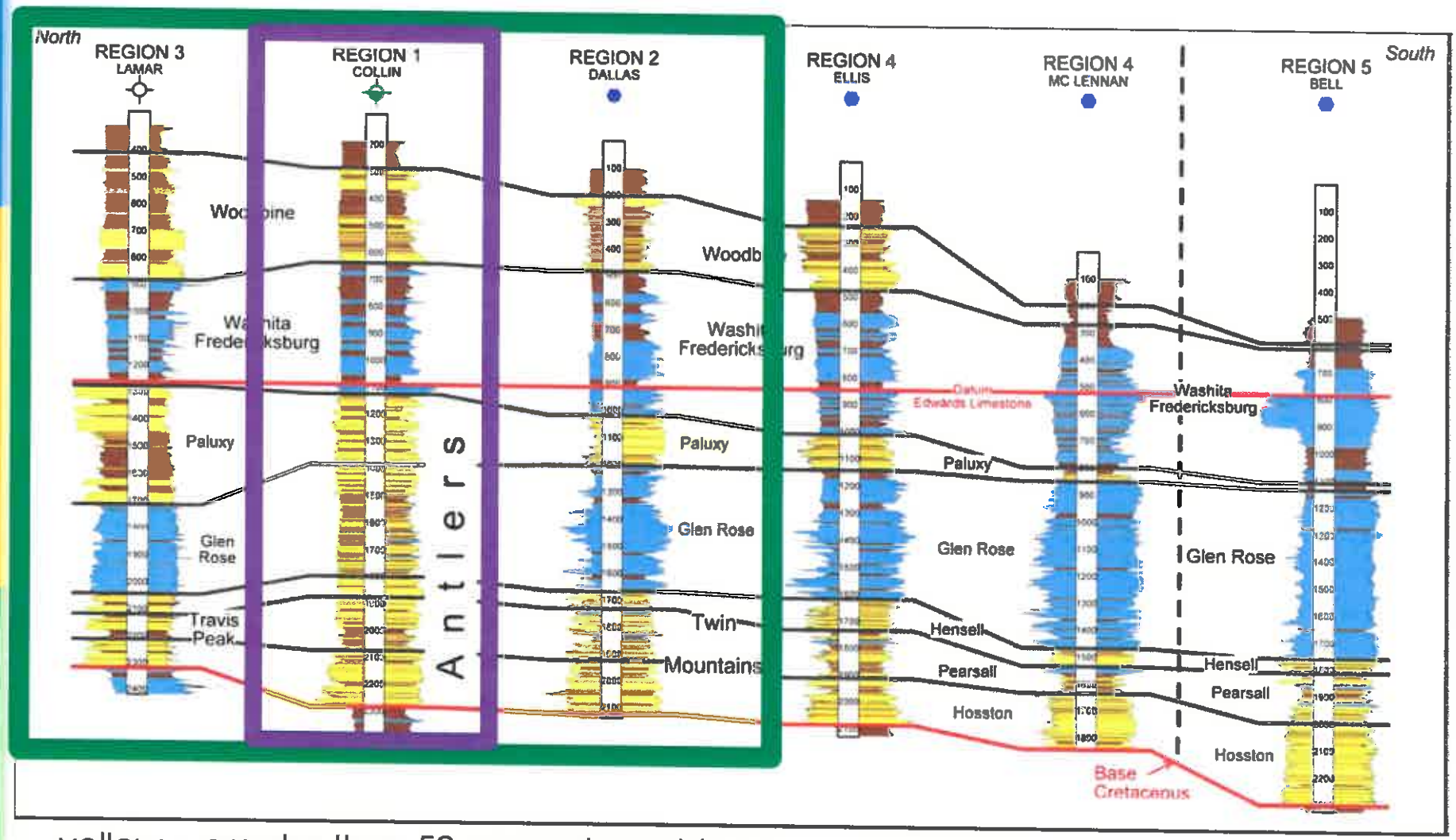

Cooke County
Denton County
Valley View
Pondor
Krum
Denton
Roanoke
Lewisville
Aubrey
Heckberry
Prosper
McKinney
Anna
Allen
Lucas
New Hope
Collin County
Murphy
Lavon



Hydrogeologic Regions in Northern Trinity Aquifer

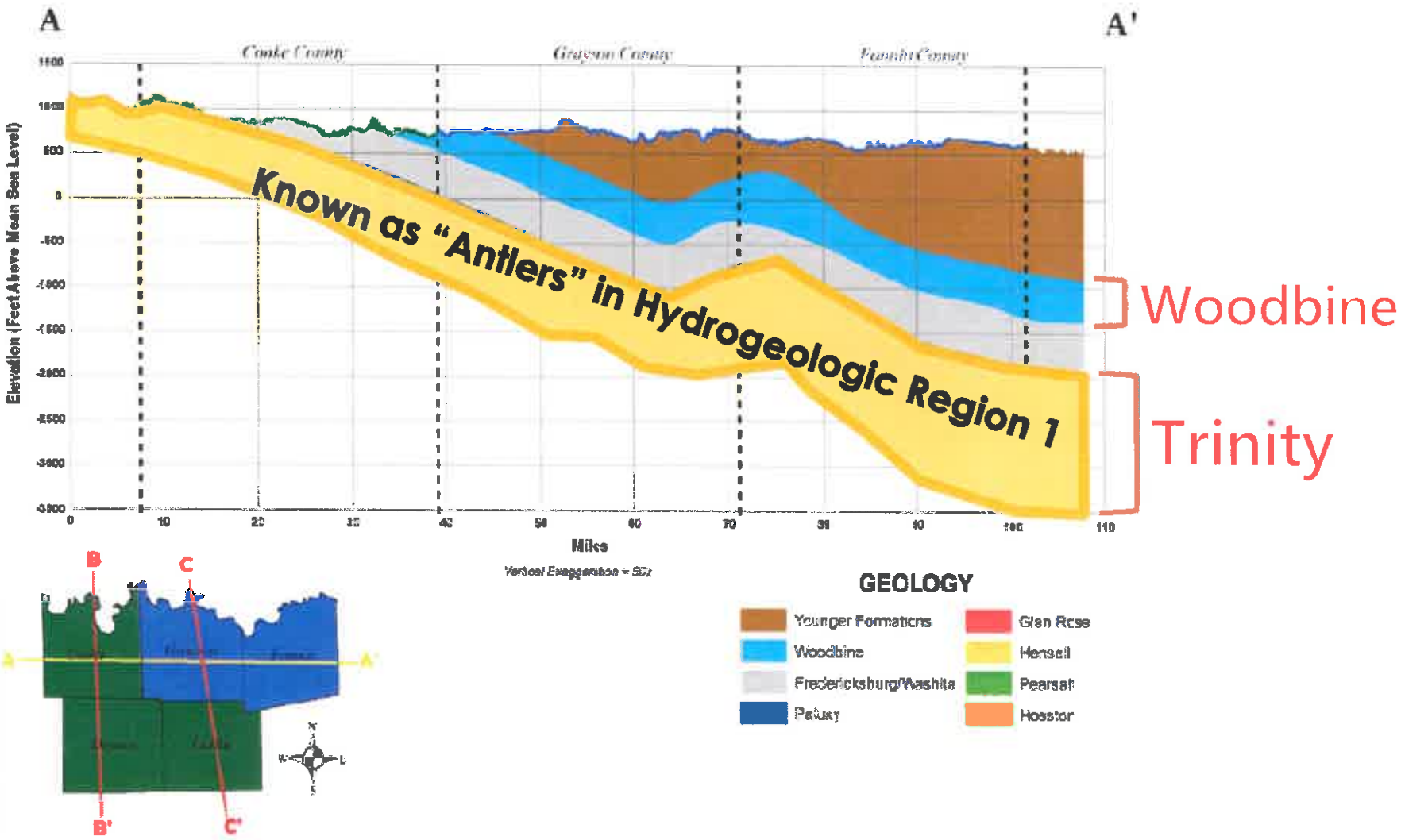
Hydrogeologic regions are generalized areas defined by stratigraphic and lithologic similarities and aquifer names common to each region.

Northern Trinity Aquifer



yellow = greater than 50 percent sandstone
blue = greater than 50 percent limestone
brown = greater than 50 percent shale (very impervious)

Model Layers (Woodbine and Trinity)



What are the districts doing now?

Rulemaking

- After public hearings, the Districts adopted
  - Temporary Rules
- In Temporary Rules, exempt wells were defined as
  - Used solely for Domestic, Livestock or Poultry purposes
  - Or wells with production capacity less than 27.7gpm (Red River) and 25gpm (North Texas)

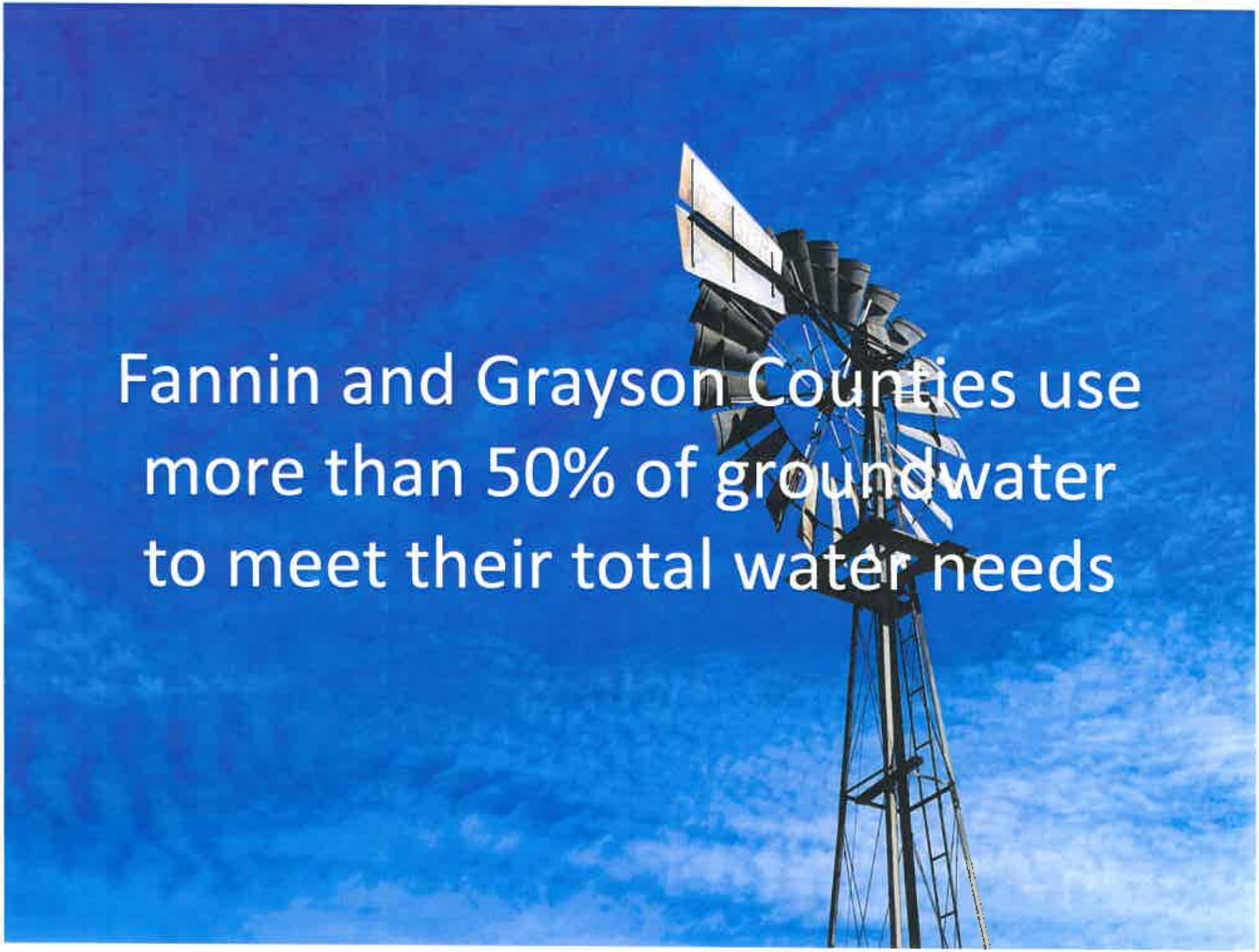
Permanent Rules

- Currently being discussed by the Districts
- Permanent Rules will include spacing requirements for new wells and production permits
- District is working to have the Permanent Rules in place by 2018

Fees

- **LOWEST FEES IN REGION**
- $0.07 per 1,000 gallons in Red River
- $0.10 per 1,000 gallons in North Texas
- Groundwater production fees are collected from non-exempt well owners
- RRGCD does not charge for agricultural use and NTGCD charge $1 per acre-foot


Over 59% of Texas' Total Water Supply
is from Groundwater


Fannin and Grayson Counties use
more than 50% of groundwater
to meet their total water needs

Questions?

Need more info, visit us at www.redrivergcd.org

Drew Satterwhite, P.E.
General Manager
Red River Groundwater Conservation

Presented December 18, 2017 to GTUA Board of Directors

ATTACHMENT D

Quarterly Reports

RED RIVER

GROUNDWATER CONSERVATION DISTRICT

FANNIN COUNTY AND GRAYSON COUNTY

General Manager's Quarterly Report
Date: March 31, 2017
Red River GCD Management Plan

This quarterly briefing is being provided pursuant to the adopted Management Plan for the quarter ending March 31, 2017.

Well Registration Program:

Current number of wells registered in the District: 722

Aquifers in which the wells have been completed: Trinity and Woodbine

Well Inspection/Audit Program:

2017
Well Inspections

Month	Fannin	Grayson	Total
January	1	4	5
February	5	13	18
March	4	2	6
April			
May			
June			
July			
August			
September			
October			
November			
December			
Total	10	19	29

RED RIVER

GROUNDWATER CONSERVATION DISTRICT

FANNIN COUNTY AND GRAYSON COUNTY

General Manager's Quarterly Report
Date: June 30, 2017
Red River GCD Management Plan

This quarterly briefing is being provided pursuant to the adopted Management Plan for the quarter ending June 30, 2017.

Well Registration Program:

Current number of wells registered in the District: 747

Aquifers in which the wells have been completed: Trinity and Woodbine

Well Inspection/Audit Program:

2017
Well Inspections

Month	Fannin	Grayson	Total
January	1	4	5
February	5	13	18
March	4	2	6
April	7	11	18
May	5	19	24
June	5	14	19
July			
August			
September			
October			
November			
December			
Total	27	63	90

RED RIVER

GROUNDWATER CONSERVATION DISTRICT

FANNIN COUNTY AND GRAYSON COUNTY

General Manager's Quarterly Report
Date: September 30, 2017
Red River GCD Management Plan

This quarterly briefing is being provided pursuant to the adopted Management Plan for the quarter ending September 30, 2017.

Well Registration Program:

Current number of wells registered in the District: 760

Aquifers in which the wells have been completed: Trinity and Woodbine

Well Inspection/Audit Program:

2017
Well Inspections

Month	Fannin	Grayson	Total
January	1	4	5
February	5	13	18
March	4	2	6
April	7	11	18
May	5	19	24
June	5	14	19
July	11	12	23
August	2	11	13
September	11	3	14
October			
November			
December			
Total	51	89	140

RED RIVER

GROUNDWATER CONSERVATION DISTRICT

FANNIN COUNTY AND GRAYSON COUNTY

General Manager's Quarterly Report
Date: December 31, 2017
Red River GCD Management Plan

This quarterly briefing is being provided pursuant to the adopted Management Plan for the quarter ending December 31, 2017.

Well Registration Program:

Current number of wells registered in the District: 784

Aquifers in which the wells have been completed: Trinity and Woodbine

Well Inspection/Audit Program:

2017
Well Inspections

Month	Fannin	Grayson	Total
January	1	4	5
February	5	13	18
March	4	2	6
April	7	11	18
May	5	19	24
June	5	14	19
July	11	12	23
August	2	11	13
September	11	3	14
October	0	7	7
November	10	13	23
December	3	9	12
Total	64	118	182

ATTACHMENT E

Reports on Region C Water Planning Group Meetings

REGION C WATER PLANNING GROUP
MINUTES OF AN OPEN PUBLIC MEETING
May 22, 2017

The Region C Water Planning Group (RCWPG) met in an open public meeting on Monday, May 22, 2017, at 1:00 P.M. The meeting was held at the North Central Texas Council of Governments located at 616 Six Flags Drive, Centerpoint Two Building, First Floor Transportation Council Room, Arlington, Texas. Notice of the meeting was legally posted.

Chair Jody Puckett called the Region C Regional Water Planning Group meeting to order at approximately 1:00 P.M. and welcomed guests.

I. ROLL CALL

Kevin Ward conducted a roll call. The following members were in attendance:

Fiona Allen (Alt. for Kevin Ward)	John Lingenfelder
David Bailey	Steve Mundt
John Carman	Jody Puckett
Bill Ceverha	Bob Riley
Tim Fisher (Alt. for Howard Martin)	Drew Satterwhite
Tom Kula	Gary Spicer
Harold Latham	Connie Standridge
Russell Laughlin	Jack Stevens

Connie Townsend, TWDB, Darrell Dean, TDA, Adam Whisenant, TPWD, and David Nabors, Region D, were present. The registration lists signed by guests in attendance are attached.

II. APPROVAL OF MINUTES – December 5, 2016

The minutes of the December 5, 2016, RCWPG meeting were approved by consensus upon a motion by Jack Stevens and a second by Connie Standridge.

III. ACTION ITEMS FOR CONSIDERATION

A. Announcement of Three Vacancies: Robert Scott Representing Environmental Interests, Jim McCarter Representing Water Utilities, and Howard Martin Representing Municipalities, and Vote to Fill Vacancies.

Mr. Scott submitted his resignation effective the end of 2015. Mr. Scott recommended Grace Darling, member of the Tarrant Coalition for Environmental Awareness, as his replacement. There were no additional nominations from the planning group or the public.

Mr. McCarter submitted his resignation. Lara Zent, Executive Director and General Counsel, Texas Rural Water Association, submitted a letter recommending Chris Boyd to fill this vacancy. There were no additional nominations from the planning group or the public.

Mr. Martin submitted his resignation effective March 31, 2017, and recommended Tim Fisher, General Manager of Water Utilities at the City of Denton, as his replacement. There were no additional nominations from the planning group or the public.

Amy Kaarlela added that she will offer new board member training and initiation.

There were no public comments on this action item.

Chair Puckett asked if there were any nominations from the floor but there were none. Upon a motion from Steve Mundt, and a second from John Carman, the Board voted unanimously to accept the recommendations of Grace Darling, Chris Boyd and Tim Fisher to fill these three vacancies.

B. Receive Report from Nominating Committee for Slate of Officers for 2017; Consider Election of 2017 RCWPG Officers.

The Region C WPG nominating committee is comprised of the current officers plus two at-large members. Russell Laughlin, Vice-Chairman, reported that the Nominating Committee held a conference call on May 11, 2017. The Nominating Committee recommended the current officers serve for the calendar year 2017.

There were no public comments on this action item.

Upon a motion from Gary Spicer and a second from Steve Mundt, the RCWPG voted unanimously to elect Jody Puckett as Chair, Russell Laughlin as Vice-Chair, and Kevin Ward as Secretary of the RCWPG for the calendar year 2017.

C. Consider Appointing Nominating Committee for Slate of Officers for 2018.

The RCWPG may appoint a Nominating Committee to develop a recommendation for the 2018 slate of officers. Election of 2018 Slate of Officers will occur at the next RCWPG meeting (Fall 2017).

There were no public comments on this action item.

Upon a motion by Connie Standridge and a second by Rick Shaffer, the RCWPG voted unanimously to appoint Jody Puckett, Russell Laughlin, Kevin Ward, Tom Kula and Gary Spicer to the Nominating Committee for a slate of officers for 2018 that will be presented to the RCWPG at its next meeting for confirmation.

IV. DISCUSSION ITEMS

A. Review of Region C Water Planning Group roster of members and alternates.

Chair Puckett discussed the importance of each Region C WPG board member and alternate to provide updates on their contact information. The members were requested to send their updated information to Amy Kaarlela.

Currently, there are four vacancies for alternate member positions. According to the Bylaws..."Each member shall designate an alternate to represent them when the member is unable to attend a meeting. Alternate should be designated in writing to the Chairman prior to the first meeting the designated alternate will appear on behalf of the member."

B. Schedule

Amy Kaarlela, FNI, discussed upcoming key dates as follows:

- Nov. 30, 2017 - Population/Demand Projections due *(Note: this date has now been updated by TWDB to be January 2018)*
- March 2, 2020 - Initially Prepared Plan due
- Oct. 14, 2020 - Final Plan due
- Oct. 30, 2017 - RCWPG Fall 2017 meeting

Ms. Kaarlela added that there will be 12 RCWPG meetings over the next 4 years.

C. Status of Contracts with TWDB, TRA and Consultants.

Amy Kaarlela discussed the status of the following contracts:

- TWDB/TRA
- TRA/FNI
- FNI/subs

Connie Townsend, TWDB, advised that August 31, 2017, is the deadline for executing Amendment #1 to the current contract between TWDB and TRA. Ms. Townsend noted that this amendment includes an increase in committed funds as the biennium progresses. Ms. Kaarlela asked Howard Slobodin if the TRA/FNI contract had been executed; Mr. Slobodin stated that it had. Ms. Kaarlela advised that FNI will proceed to execute subcontracts with APAI, CP&Y, and Cooksey Communications. Ms. Kaarlela introduced the following consultants: Ellen McDonald and Brian McDonald, APAI; Chris Schmid, CP&Y; and Colby Walton, Cooksey Communications.

D. Proposed Region Specific Scope for Task 5A – Water Management Strategy Evaluation (Note: This task was incorrectly listed on the agenda as Task 4D)

- Task 5A (WMS Evaluation) is the bulk of work and funding
- A Portion of scope developed by TWDB, applies to all regions
- Remainder of scope is developed by each region, and is region-specific
- FNI will develop draft scope, using previous scope as starting point
- Scope will be presented to the RCWPG for approval at the next RCWPG meeting
- This scope does not have to be fully developed prior to executing contract amendments.

- TWDB must provide notice-to-proceed prior to consultants performing this task

E. Water Management Strategies – Review proposed criteria for evaluating WMSs.

Connie Townsend, TWDB, pointed out that according to the Regional Planning Rules, the process for identifying Water Management Strategies (WMSs) must be presented before voting on and approving proposed criteria for evaluating WMSs. Chair Puckett asked Ms. Townsend if this item could be presented for information purposes only. Ms. Townsend agreed with the condition that the discussion could only be conducted in generic terms, nothing specific. Chair Puckett said that the discussion would not supersede WMSs criteria for identifying WMSs, which will be placed on the next meeting's agenda. Chair Puckett also confirmed the group can take action on both the criteria for identifying and the criteria for evaluating WMSs at the next RCWPG meeting.

Amy Kaarlela's discussion was informative and generated several questions from the RCWPG. Ms. Kaarlela defined WMS as projects or things to meet identified water needs. Categories of WMSs are:

- Water Conservation
- Drought Management Measures
- Wastewater Reuse
- Interbasin Transfers (IBT)
- Expanded Use of Existing Supplies
- New Supply Development

Bill Ceverha asked Ms. Kaarlela to explain Precipitation Enhancement (a category of New Supply Development). Tom Gooch, FNI, replied that it involves cloud seeding to induce rain. Tom Kula asked if a front moves from west to east, would any water rights be impacted. Tom Gooch responded that there are uncertainties with legal issues of precipitation enhancement.

John Lingenfelder wanted to know the meaning of a Water Right Cancellation. Tom Gooch explained that long-term non-use of a water right can lead to its cancellation by the TCEQ and result in voluntary reassignment.

Ms. Kaarlela added that the TWDB has identified specific WMSs that each RWPG must address. Chair Puckett asked Connie Townsend if there had been any changes in the Rules, and she replied there were none. Chair Puckett concluded the discussion by stating there will be an action item on the next RCWPG agenda on the process for identifying WMSs.

F. 2021 Texas Water Development Board Draft Population and Municipal Water Demand Projections

Amy Kaarlela led this discussion on draft population projections. Ms. Kaarlela advised that this information is posted on the Region C website under "Planning Info".

She also informed the planning group that a region is not allowed to change the total population of the region; if one county is increased then another county must be decreased.

In TWDB's draft projections, there were no changes from 2016 Region C Water Plan to:

- County Population totals
- Regional Population total
- Gpcd (but may be revised)

Changes from the 2016 Region C Water Plan:

- WUG boundaries – now based on utility service areas, not city limits
- Municipal water demands are slightly different because of change to WUG boundary delineations

Ms. Kaarlela advised that steps have been and will be taken to revise draft population projections as follows:

- First revision of projections based on:
  - Meetings with the 5 Major WWPs
  - WUG Water/Wastewater Master Plan
  - Collin County Mobility Study
  - Denton County Thoroughfare Plan

- Additional Revisions will be made after the following activities:
  - Meetings with other large WWPs
  - Calling/surveying remaining WWPs
  - Surveying all municipal WUGs via email.

Tim Fisher asked why the 2016 plan population projections for Collin County increased but Parker and Fannin Counties decreased. Ms. Kaarlela explained that the increased projections for Collin County came from the Mobility Plan. The Plan had low, medium, and high projection scenarios. The medium scenario was utilized, which added about 500,000 people to Collin County. This population had to be taken from other counties since the regional total is required to stay the same. Kaarlela also said this is the first cut in the process of adjusting numbers. Surveys will be emailed to WUGs in June. Also in June, new gpcd data will be received from the TWDB and GPCD values will be revised, if warranted. Kaarlela advised that she will provide information to the planning group on the population revision process. It was noted that the projections are particularly important in the 404 permitting process.

Kaarlela has met with the big 5 WWP – North Texas MWD, Dallas Water Utilities, Tarrant Regional WD, Upper Trinity Regional WD, and the Trinity River Authority. Kaarlela added that she will be reaching out in the coming weeks to smaller wholesale water providers. The 2021 population projections will be finalized and approved at the Region C WPG's next meeting.

Tom Gooch added that the spreadsheet presentation is posted on the Region C website and open for comments.

G. Texas Water Development Board Draft Mining Demand Projections

Brian McDonald, APAI, led the discussion on this agenda topic. McDonald advised that the draft mining demand numbers are the same as the current State Water Plan. Additional data provided by the TWDB and the Bureau of Economic Geology has been considered, and no reason was found for any significant changes.

Steve Mundt asked why Wise County was the only county that increased. McDonald replied that their numbers for aggregate mining from the Bureau of Economic Geology increased water use long term.

H. Schedule for Approving Population and Water Demand Projections

Amy Kaarlela outlined the planning group schedule for approving population and water demand projections as follows:

- June - Email surveys to WUGs; revised gpcd
- June to October - Continued contact with water providers
- October - Post Projections for public comments (14 days prior to public meeting)
- October - RCWPG consider approval of projections at public meeting
- November - Continue posting (14 days after meeting)
- End of Nov. - Submit projections to TWDB
- Connie noted that the 14-day posting before and after the next meeting does not apply in this case. It only applies when a RWPG is revising projections that have previously been approved.

I. Potential additional Sub-consultants to Region C Team

Amy Kaarlela identified several reasons for adding sub-consultants to the Region C WPG team as follows:

- Would involve key outlying counties – Rockwall, Collin, Ellis, Kaufman, others
- Local consultants already work for many of the smaller water providers
- Helpful in developing water strategies
- Would potentially add 1 to 2 small engineering firms to Region C team

Kaarlela added that the TWDB requires a selection process including a Certification of Procurement form. Connie Townsend corrected this, saying only the Certificate of Procurement was needed. However, Howard Slobodin clarified that TRA would require a competitive selection process. Also, the sub-consultants would have to be approved by the RCWPG.

Steve Mundt asked if the funding for sub-consultants has to be budgeted. Ms. Kaarlela replied that each RWPG has a specific budget allocated by TWDB. Region C has approximately $2.4 M allocated, and funding for sub-consultants would come out of the consultant's budget.

J. Newsletter articles

Colby Walton, Cooksey Communications, gave the presentation on the newsletter. The current funding of the newsletter is unsure. Originally, the newsletter was funded by the large water providers and was sent to approximately 1600 recipients quarterly, and then later, semi-annually. These funds have been depleted. The question was raised concerning Kevin Ward's attempt to obtain allocation of funding for the newsletter in the TWDB contract amendment. Connie Townsend, TWDB, said the Water Board has approved up to $5,000 per 5-year period for the newsletter labor and printing costs.

Walton advised that each newsletter costs around $8,000 to produce. Bill Ceverha asked whether the Region C website has the same information as in the newsletter. Walton responded that the website forces a person to sift through an abundance of technical data. Russell Laughlin asked what is trending on the Region C website and whether someone could convert the technical data to layman's terms. Walton countered that the newsletter is a better mechanism to push information to the public.

Chair Puckett suggested discussing the newsletter's future at the next officer's meeting and reporting the results back to the planning group at the next RCWPG meeting. Chair Puckett also mentioned the possibility of finding sponsors for the newsletter.

K. Legislative Updates

Lissa Gregg, FNI, briefly discussed legislation of interest to the RCWPG currently being considered by the Texas Legislature. The following bills were passed and will become effective September 1, 2017:

SB 347 – (Watson) Relating to the applicability of open meetings and public information laws to regional water planning groups and their committees.

SB 1511 – (Perry) Relating to the state and regional water planning process and the funding of projects included in the state water plan. This bill:

- Removes infeasible strategies
- Assess barriers to high priority strategies
- Optional simplified regional planning process every other 5 years

Also discussed were HB2948 (Larson) and HB2240 (Lucio III).

Chair Puckett added that because of SB347, future RCWPG meetings to discuss officer nominations or prioritization will need to be labeled other than committee or subcommittee meetings to avoid falling under open meeting posting requirements.

V. OTHER DISCUSSION

A. Updates from the Chair – Chair Puckett had no further comments.

B. Report from Regional Liaisons

- Region B - Jack Stevens reported they are trying to get Drought of Record changed; have held 5 meetings this year.
- Region D - David Nabors reported they have been conducting regular housekeeping duties; next meeting is July 26, 2017, to approve 8 new members. Nabors added that what RCWPG does as a group is very important to future generations and the long-range planning process.
- Region G - Bill Ceverha noted this planning group met in April to confirm new members; also discussed the mining projections.
- Region H - no comment

C. Report from Texas Water Development Board – Connie Townsend stated that the TWDB projections on GPCD and mining reuse water will be forthcoming. Townsend advised that the TWDB will hold a finance workshop in Ft. Worth on May 9, 2017. Ms. Townsend also introduced Sarah Backhouse who has replaced Temple McKinnon at the TWDB.

D. Report from Texas Department of Agriculture - None

E. Report from Texas Parks and Wildlife Department - None

F. Other Reports - None

G. Confirm Date and Location of Next Meeting - Chair Puckett confirmed that the next meeting of the RCWPG will be on October 30, 2017, but is subject to change as needed.

H. Public Comments - None

VI. ADJOURNMENT

There being no further business, the meeting of the RCWPG adjourned at approximately 3:35 P.M.

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JODY PUCKETT, Chair

Revision suggestions to 5/22/17 Region C meeting minutes

4.D. Proposed Region Specific Scope for Task 5A – Water Management Strategy Evaluation (Note: This task was incorrectly listed on the agenda as Task 4D)

- Task 5A (WMS Evaluation) is the bulk of work and funding
- A Portion of scope developed by TWDB, applies to all regions
- Remainder of scope is developed by each region, and is region-specific
- FNI will develop draft scope, using previous scope as starting point
- Determination of the Task 5A Scope of Work will need to be postponed unitl RCWPG meeting after the List of Potentially Feasible WMSs has been identified.
- The entire Task 5A SOW does not have to fully developed at one time, but a contract amendment will be required each time a portion of the Task 5A SOW is submitted to the TWDB for a notice-to-proceed request.
- TWDB must provide notice-to-proceed prior to consultants performing this task

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4.E. Water Management Strategies – Review proposed criteria for evaluating WMSs.
Connie Townsend, TWDB, pointed out that according to the Regional Planning Rules, the process for identifying Potentially Feasible Water Management Strategies (WMSs) must be determined at a regular RWPG meeting after receiving/ considering public input and then voting members approve the final process. Chair Puckett asked Ms. Townsend if the WMS evaluation criteria item could be presented for information purposes only. Ms. Townsend agreed with the condition that the discussion could only be conducted in generic terms, nothing specific. Chair Puckett said that the discussion would not supersede WMSs criteria for identifying Potentially Feasible WMSs, which will be placed on the next meeting's agenda. Chair Puckett also confirmed the group can take action on both the criteria for identifying and the criteria for evaluating Potentially Feasible WMSs at the next RCWPG meeting.

Amy Kaarlela's discussion was informative and generated several questions from the RCWPG. Ms. Kaarlela defined WMS as a plan to meet identified water needs. Categories of WMSs are:

- • Water Conservation
- • Drought Management Measures
- • Wastewater Reuse
- • Interbasin Transfers (IBT)
- • Expanded Use of Existing Supplies
- • New Supply Development

Bill Ceverha asked Ms. Kaarlela to explain Precipitation Enhancement (a category of New Supply Development). Tom Gooch, FNI, replied that it involves cloud seeding to induce rain. Tom Kula asked if a front moves from west to east, would any water rights be impacted. Tom Gooch responded that there are uncertainties with legal issues of precipitation enhancement.
John Lingenfelder wanted to know the meaning of a Water Right Cancellation. Tom Gooch explained that long-term non-use of a water right can lead to its cancellation by the TCEQ and result in voluntary reassignment. Ms. Kaarlela added that the TWDB has identified specific WMSs that each RWPG must address. Chair Puckett asked Connie Townsend if there had been any changes in the Rules, and she replied there were none. Chair Puckett concluded the discussion by stating there will be an action item on the next RCWPG agenda on the process for identifying Potentially Feasible WMSs.

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5.C. Report from Texas Water Development Board – Connie Townsend stated that the TWDB projections on GPCD and mining reuse water will be forthcoming. Townsend advised that the TWDB will hold a finance workshop in Ft. Worth on May 9, 2017. Ms. Townsend also introduced Sarah Backhouse who has replaced Temple McKinnon as the regional water planning manager at the TWDB. Temple has been promoted to our division director.

ATTACHMENT F

Reports on Stakeholder Meetings

Monthly Letter Progress Report #14:
Period 8, Fiscal Year 2017
Study of Brackish Aquifers in Texas –
Project No. 4 –Trinity Aquifer
TWDB Contract No. 1600011950

Submitted to

Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711

Prepared by:

SOUTHWEST RESEARCH INSTITUTE®

Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238-5166
210-684-5111

May 25, 2017

Monthly Letter Progress Report #14
April 15, 2017-May 12, 2017
Study of Brackish Aquifers in Texas – Project No. 4 – Trinity Aquifer
TWDB Contract No. 1600011950

1.0 Budget and Expenses

This report summarizes the project status and costs for the billing period from Contract Approval Date (January 6, 2016) through the end of Period 8 of Fiscal Year 2017 (May 12, 2017). The total expenses through this period are $223,409.14. A breakdown of the budget by task is provided in Table 1. A copy of the progress report has been sent to Texas Water Development Board (TWDB) along with the monthly invoice.

2.0 Progress on Tasks

This report summarizes activities on project tasks during Fiscal Year 2017, Period 8 (encompassing April 15, 2017-May 12, 2017) and represents the fourteenth progress report on this contract.

Task 1: Project Management

No work was performed on this task during this reporting period.

Task 2: Data Acquisition and Method Development

Task 2 has been subdivided into four subtasks. Progress on activities for the subtasks is as follows:

Subtask 2.1 Acquisition and Initial Analysis of Groundwater Samples

No work was performed on this subtask during this reporting period.

Subtask 2.2 Acquisition and Initial Analysis of Geophysical Logs

Geophysical logs have been correlated with chemical-analysis data. Work on the well log database containing spatial attributes of all logs utilized in this study, with care to adhere to BRACS format, has continued. The project database of water-quality data relevant to the project domain continues to be developed. Hydrochemical facies analyses for the project are underway.

Subtask 2.3 Develop Technical Approach for Estimating Total Dissolved Solids from Geophysical Logs

The technical approach for estimating total dissolved solids from geophysical logs has been developed and is being implemented using available geophysical logs.

Subtask 2.4 Use Geophysical Log Interpretation to Analyze Stratigraphy and Map Fresh, Brackish, and Saline Groundwater

Gamma ray logs are being used to help complete the stratigraphic framework model. In addition, resistivity and SP logs are being used for stratigraphic interpretation at wells which do not have gamma ray logs. Resistivity and SP logs are also being utilized for salinity analysis. SP data are mostly limited to sand-dominated units such as the Hosston and Hensell formations, but have been effective for some Cow Creek producing zones. Digitized porosity logs (neutron and sonic) were evaluated for use in the study.

Task 3: Develop a Stratigraphic Framework Model of the Trinity Aquifer and Calculate Brackish Water Volumes

Task 3 has been subdivided into two subtasks. Progress on activities for the subtasks is as follows:

Subtask 3.1 Extend Stratigraphy for the Hill Country Trinity

The technical literature has been examined for useful and relevant stratigraphic and structural information and data (e.g., cross-sections, fence diagrams, structure contour maps, well header information, stratigraphic horizon picks from wells, and fault maps). Geophysical logs from the BRACS well database including stratigraphic information, specifically stratigraphic horizon picks and lithologic information, have been evaluated, quality controlled, and re-interpreted as needed. Log information from the IHS database has been evaluated and wells which have logs that penetrate the Trinity Aquifer were used for stratigraphic interpretation. The stratigraphic framework is nearing completion.

Subtask 3.2 Determine Volumes of Fresh, Brackish, and Saline Groundwater

Evaluation of the relationship between electrical resistivity and fluid salinity continued during this period. The determination of TDS from digitized well log curves is nearing completion.

Task 4: Delineate Potential Production Areas

Team members continued the delineation of the potential production zones.

Task 5: Determine the Amount of Brackish Groundwater that can be Produced without

Causing Impact on Lateral and Vertical Fresh Water

Team members have begun modelling groundwater within the Trinity Aquifer using stratigraphic and geochemical data to constrain the model domain.

Task 6: Stakeholder Communication

The second stakeholder meeting for this project to discuss Potential Production Areas was held on May 8th, 2017. Team members prepared and presented a PowerPoint presentation for the meeting.

Task 7: Reporting

Task 7 has been subdivided into 2 subtasks. Progress on the subtasks is as follows:

Subtask 7.1 Project Monitoring Procedures

The project timeline has been reviewed frequently. The project budget has been monitored on a weekly basis using the SwRI Project Cost System. Project activity for each period is summarized in status reports for review by TWDB.

Subtask 7.2 Project Deliverables

Progress on this task during this reporting period has included preparing and delivering "Monthly Letter Progress Report #13: Period 7, Fiscal Year 2017."

The Stakeholder Presentation on proposed Potential Production Areas was delivered to TWDB. Team members have continued work toward completing all project deliverables. Work on the Draft Final Report has continued.

3.0 Planned Activities for the Next Reporting Period (Fiscal Year 2017, Period 8)

Task 1: Project Management

The agreements with the two in-kind teaming partners, EAA and BSEACD, will be submitted to TWDB as soon as they have been finalized.

Task 2: Data Acquisition and Method Development

Task 2 has been subdivided into four subtasks. Planned activities for the subtasks are as follows:

Subtask 2.1 Acquisition and Initial Analysis of Groundwater Samples

No work on this task is expected to occur over the next reporting period.

Subtask 2.2 Acquisition and Initial Analysis of Geophysical Logs

Geophysical logs will continue to be correlated with chemical-analysis data. Plots of regional chemistry across the study region will be created for each aquifer. The database with spatial attributes of all logs utilized in this study, with care to adhere to BRACS format, will be finalized. The project database of water quality data relevant to the project domain and preliminary hydrochemical facies analysis for the project domain will be finalized using TWDB's groundwater database.

Subtask 2.3 Develop Technical Approach for Estimating Total Dissolved Solids from Geophysical Logs

Efforts towards developing a method for correlating TDS data and geophysical log attributes will conclude. Deep and shallow resistivity curves will be cross-plotted so that the resistivity of the fluid can be estimated. Feedback from the TWDB regarding the method for correlating TDS data and geophysical log attributes will be incorporated into the approach.

Subtask 2.4 Use Geophysical Log Interpretation to Analyze Stratigraphy and Map Fresh, Brackish, and Saline Groundwater

Shallow and deep resistivity logs and SP logs will be utilized for salinity analysis.

Task 3: Develop a Stratigraphic Framework Model of the Trinity Aquifer and Calculate Brackish Water Volumes

Task 3 has been subdivided into two subtasks. Planned activities for the subtasks are as follows:

Subtask 3.1 Extend Stratigraphy for the Hill Country Trinity

The framework model will be completed over the next reporting period.

Subtask 3.2 Determine Volumes of Fresh, Brackish, and Saline Groundwater

Evaluation of the relationship between electrical resistivity and fluid salinity will conclude during the next period.

Task 4: Delineate Potential Production Areas

Work on identifying the potential production zones will be completed during the next period.

Task 5: Determine the Amount of Brackish Groundwater that can be Produced without

Causing Impact on Lateral and Vertical Fresh Water

Efforts toward determining the amount of brackish groundwater available for production without causing negative impact on lateral and vertical fresh water will be completed during the next reporting period.

Task 6: Stakeholder Communication

No work is expected to occur over the next reporting period.

Task 7: Reporting

Task 7 has been subdivided into 2 subtasks. Planned activities for the subtasks are as follows:

Subtask 7.1 Project Monitoring Procedures

The project timeline will continue to be reviewed frequently. The project budget will continue to be monitored on a weekly basis using the SwRI Project Cost System. Project activity will continue to be summarized in status reports for review by TWDB.

Subtask 7.2 Project Deliverables

The fourteenth (current) progress report (covering Period 8, FY 2017) will be submitted to TWDB during Fiscal Year 2017, Period 9.

Team members will consider and incorporate feedback regarding the Draft Methods Report from TWDB as appropriate. Work on the Draft Final Report will continue.

4.0 Problems/Issues and Actions Required/Taken

No problems or issues were encountered during this period.

Table 1. Project Budget Versus Expenses

Task	Description	Task Budget	Spent This Period Per Task	Total Spent Per Task	Remaining Task Budget
1	Project Management	$22,640.00	$0.00	$16,872.03	$5,767.97
2	Data Acquisition and Method Development	$134,555.00	$2,657.19	$107,732.57	$26,822.43
3	Develop a Stratigraphic Framework Model of the Trinity Aquifer and Calculate Brackish Water Volumes	$116,878.00	$3,579.76	$67,236.96	$49,641.04
4	Delineate Potential Production Areas	$40,001.00	$0.00	$2,259.39	$37,741.61
5	Determine the Amount of Brackish Groundwater that can be Produced without Causing Impact on Lateral and Vertical Fresh Water	$56,740.00	$18,626.48	$19,627.44	$37,112.56
6	Stakeholder Communication	$35,631.00	$95.75	$95.75	$35,535.25
7	Reporting	$13,555.00	$0.00	$9,585.00	$3,970.00
Total		$420,000.00	$24,959.18	$223,409.14	$196,590.86

Northern Trinity Brackish Groundwater Study results Stakeholder Meeting

November 1, 2017
Region G Planning Group
Waco, Texas
Presented by Mark Robinson
Innovative Water Technologies

- The following presentation is based upon professional research and analysis within the scope of the Texas Water Development Board's statutory responsibilities and priorities but, unless specifically noted, does not necessarily reflect official Board positions or decisions.

Brackish Groundwater Production Zones

- In 2015, the 84th Texas Legislature passed House Bill 30, directing the TWDB to
  - (1) identify and designate brackish groundwater production zones in four aquifers and to report to the legislature by December 1, 2016,
  - (2) determine the volumes of groundwater that a brackish groundwater production zone can produce over 30- and 50-year periods without causing significant impact to water availability or water quality,
  - (3) work with groundwater conservation districts and stakeholders, and
  - (4) make recommendations on reasonable monitoring to observe the effects of brackish groundwater production within the zone.
- Furthermore, the TWDB shall identify and designate brackish groundwater production zones in all aquifers in the state by the legislatively mandated date of December 1, 2022.
- www.twdb.texas.gov/innovativewater/bracs/HB30.asp

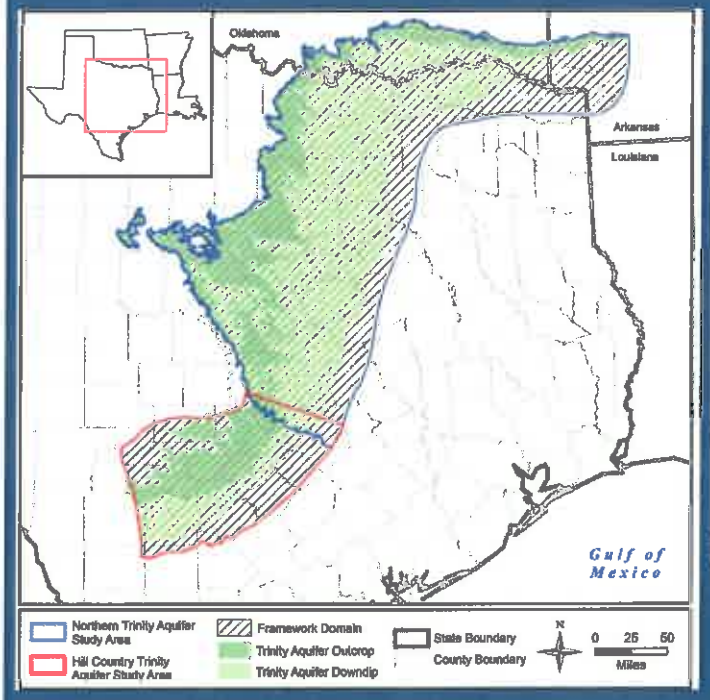
Project Team

- Leanne Stepchinski (SwRI)
  - Project management, hydrogeology
- Ronald Green (SwRI)
  - Hydrogeology
- Paul Bertetti (SwRI)
  - Geochemistry
- Ronald McGinnis (SwRI)
  - Structure and stratigraphy, log interpretation
- Nathaniel Toll (SwRI)
  - Hydrogeology, groundwater modelling
- Beth Fratesi (SwRI)
  - Hydrogeology, groundwater modelling
- Daniel Lupton (INTERA, Inc.)
  - Hydrogeology, log analysis, structure and stratigraphy, geochemistry
- Neil Deeds (INTERA, Inc.)
  - Hydrogeology, log analysis, structure and stratigraphy, geochemistry
- Jevon Harding (INTERA, Inc.)
- Rebecca Nunu, Kirk Gulliver, and Mauricio Flores (SwRI)
- Marcus Gary and Steve Johnson (EAA)
- Brian Smith and Brian Hunt (BSEACD)

Project Objectives and Accomplishments

- Objective: Evaluate the fresh, brackish, and saline groundwater resources of the Trinity Aquifer
- Accomplishments:
  - Evaluated all groundwater, water chemistry, and geophysical log data available in the study area
  - Developed a stratigraphic framework model with available structural, stratigraphic, and lithologic data
  - Developed and employed a technical approach for estimating total dissolved solids (TDS) from geophysical logs
  - Delineated fresh, brackish, and saline groundwater both horizontally and vertically in the aquifers of the project area
  - Delineated Potential Production Areas (PPAs)
  - Calculated brackish groundwater volumes in the PPAs
  - Calculated potential 30- and 50- year drawdowns in the PPAs

Geology of the Trinity Aquifer



Northern Trinity Hydrostratigraphic Units

Period	Age	Group	North Formation	Central Formation	South Formation	Hill Country Formation
Cretaceous	Cenomanian	Washita	Grayson Marl	Buda	Buda	Buda
				Del Rio	Del Rio	Del Rio
			Mainstreet	Georgetown	Georgetown	Georgetown
			Pawpaw			
			Weno			
			Denton			
			Duck Creek			
			Fort Worth			
	Albian	Fredericksburg	Kiamichi	Kiamichi	Kiamichi	Edwards
			Goodland	Edwards	Edwards	
				Comanche Peak	Comanche Peak	
			Walnut Clay	Walnut Clay	Walnut Clay	
	Aptian	Trinity	Antlers	Paluxy	Paluxy	Paluxy
				Glen Rose (Twin Mountains)	Glen Rose (Travis Peak)	Upper Glen Rose / Lower Glen Rose
				Hensell	Hensell	Hensell
				Pearsall	Pearsall	Cow Creek
					Cow Creek	Hammett
					Hammett	Sligo
				Hosston	Sligo	Hosston
	Pre-Aptian				Hosston	
Pre-Cretaceous	Tithonian	Pre-Cretaceous Undifferentiated	Pre-Cretaceous Undifferentiated	Pre-Cretaceous Undifferentiated	Pre-Cretaceous Undifferentiated	Pre-Cretaceous Undifferentiated

Hill Country Trinity Hydrostratigraphic Units

Northern Trinity Geologic Framework:
GAM Hydrostratigraphy Work Flow (Kelley and others, 2014)

Build Well Log Database
- BRACS, BEG, TCEQ PWS, Q-logs, commercial sources

Correlate Stratigraphic Surfaces
- Original work but built off of previous studies

Interpret Lithologies from Well Logs
- Vertical record of interbedded lithologies – 5 to 10 foot scale

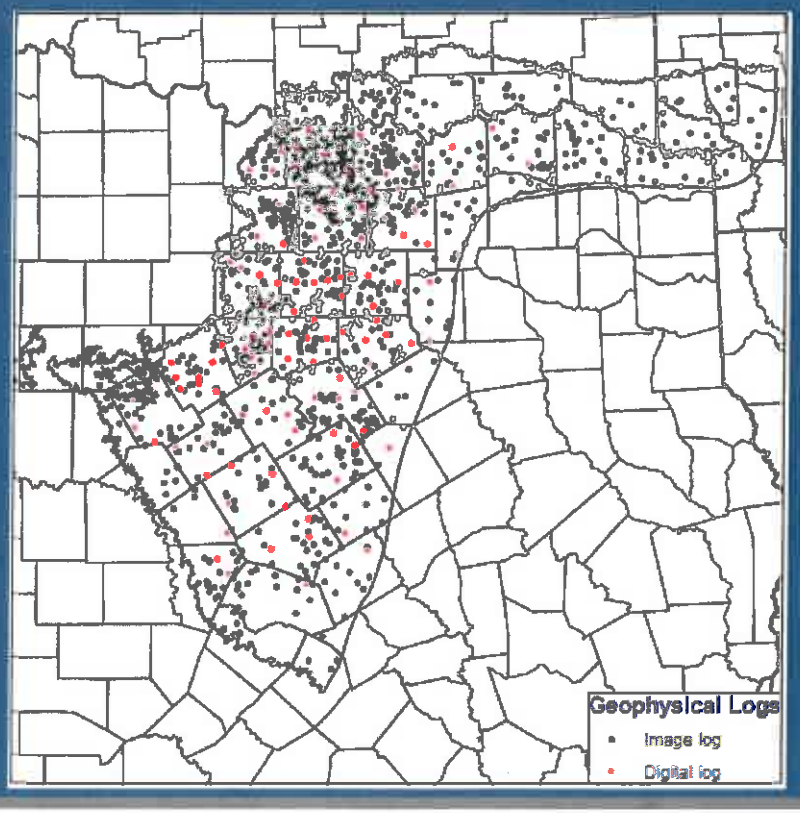
Map Layer Thicknesses and Compositions
- Structure, isopach, net sandstone maps

Interpret Depositional Environments
- Enhance predictability between wells – defines properties

Build Well Log Database (Kelley and others, 2014)

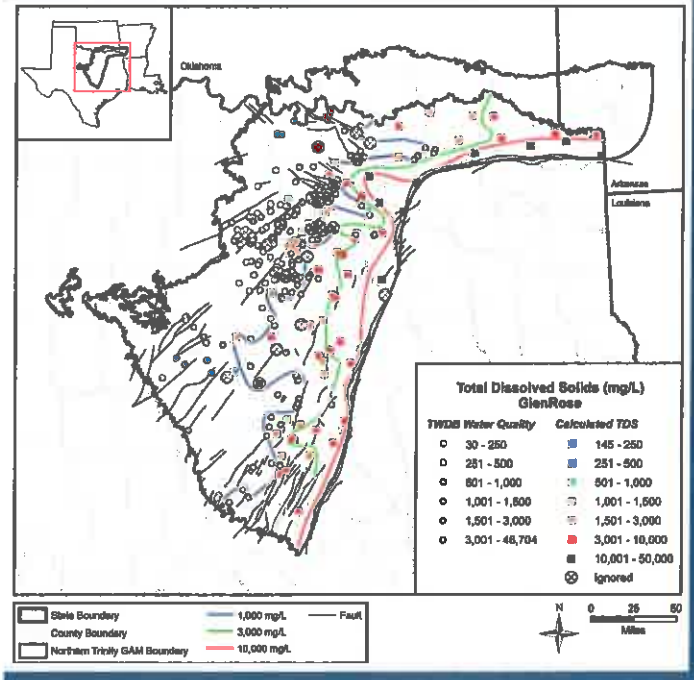
The well log database for the Northern Trinity Aquifer GAM utilized:

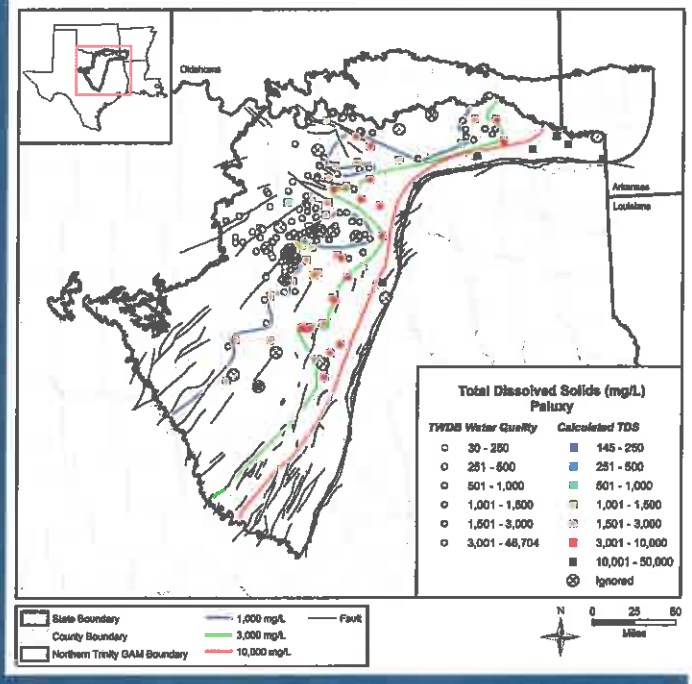
- 1193 wells with depth registered image logs
- 109 wells with digitized logs



Northern Trinity Salinity Zones:

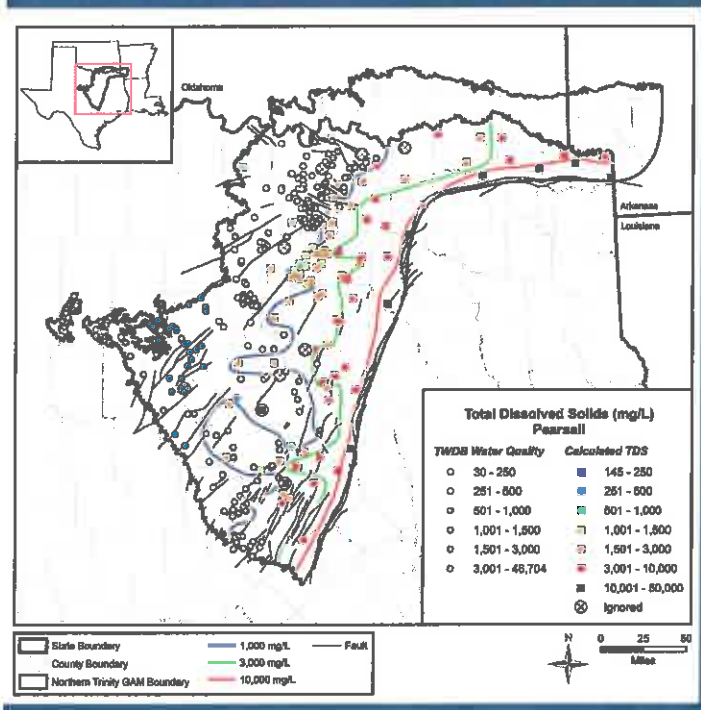
Measured and calculated water quality for Glen Rose and Paluxy formations

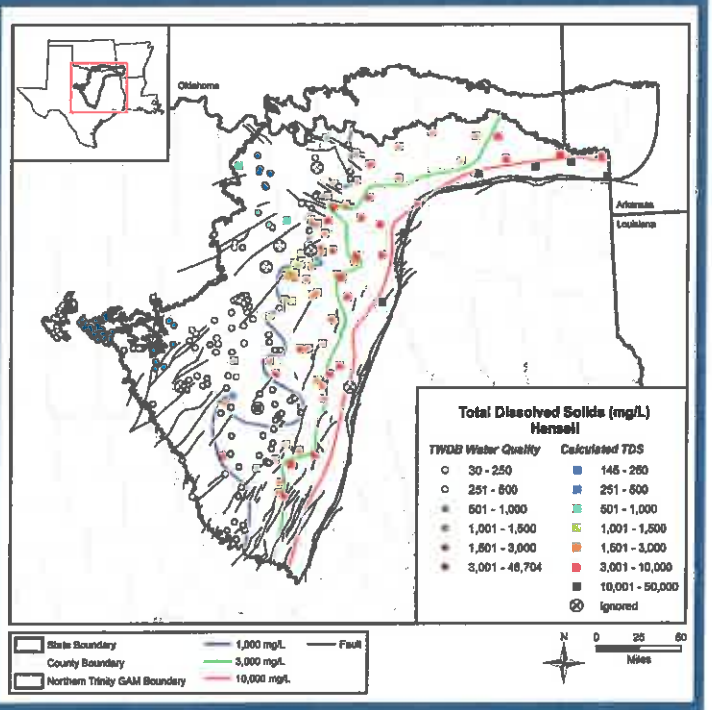




Northern Trinity Salinity Zones:

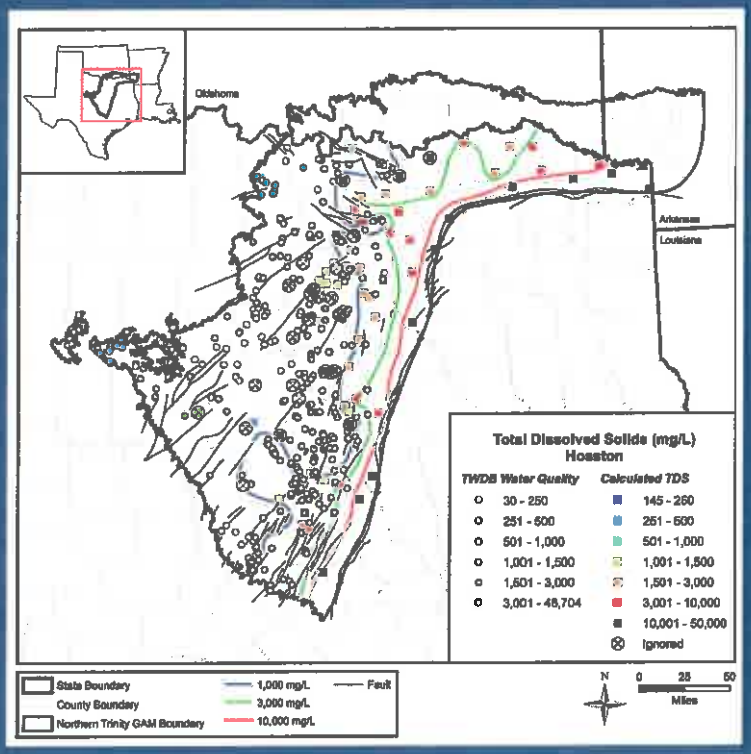
Measured and calculated water quality for Pearsall and Hensell formations





Northern Trinity Salinity Zones:

Measured and calculated water quality for Hosston Formation



Volumes- Northern Trinity

The volumes of fresh, moderately saline, slightly saline, very saline, and total groundwater volumes in the Northern Trinity Aquifer:

Aquifer Unit	Total Volume (Acre-feet)				
	Fresh	Slightly saline	Moderately saline	Very saline	Total
Paluxy	114,748,000	80,676,000	64,503,000	81,312,000	341,239,000
Glen Rose	107,622,000	137,657,000	114,292,000	79,875,000	439,446,000
Hensell	94,766,000	63,080,000	34,648,000	20,647,000	213,141,000
Pearsall	31,834,000	52,494,000	52,433,000	31,124,000	167,885,000
Hosston	171,110,000	246,770,000	232,964,000	256,357,000	907,201,000

Potential Production Areas

- House Bill 30 required the identification of potential brackish groundwater production zones.
- Potential production zones are zones that could yield significant quantities of brackish water for 30-50 years or more without impacting fresh water sources.
- The bill prescribed certain criteria the production zones must meet.

> *(5) identification and designation of local or regional brackish groundwater production zones in areas of the state with moderate to high availability and productivity of brackish groundwater that can be used to reduce the use of fresh groundwater and that:*
>
> *Excerpt H.B. No. 30*

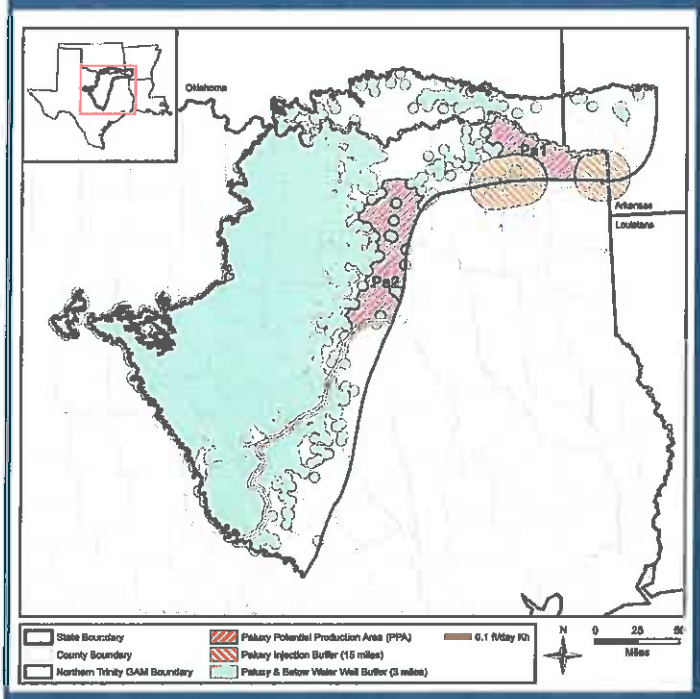
Potential Production Areas

- Exclusion criteria enumerated in H.B. No. 30
  - Separation by hydrogeologic barriers to prevent impacts on water availability and water quality in fresh groundwater sources
  - Not located in the Edwards Aquifer under the jurisdiction of the Edwards Aquifer Authority
  - Not in the boundaries of:
    - Barton Springs-Edwards Aquifer Conservation District
    - Harris-Galveston
    - Fort Bend Subsidence District
  - Not in a brackish groundwater source that is already in use by municipal, domestic, or agriculture entities
  - Not in a geologic stratum designated or used for wastewater injection through the use of injection wells

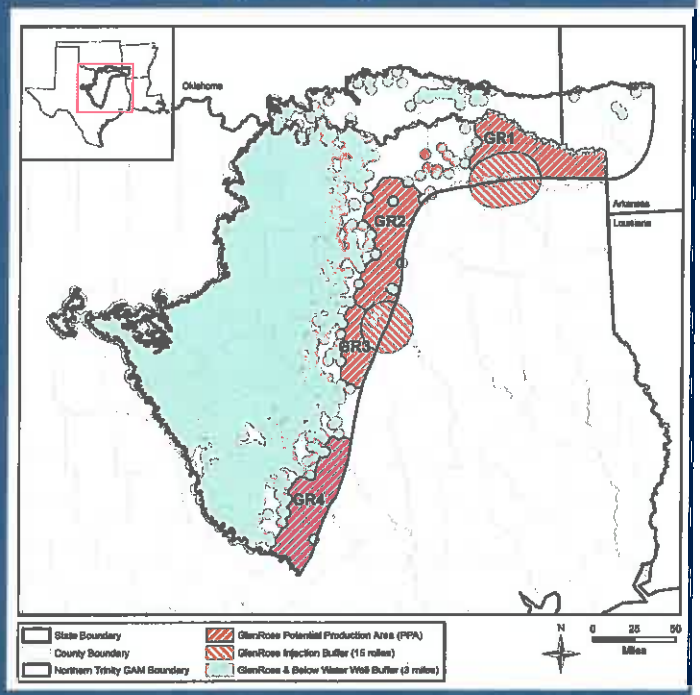
Potential Production Areas

- How exclusion criteria were applied in practice for the Trinity Aquifer
  - A 3 mile buffer is extended around wells identified from public sources with screened intervals in the Trinity Aquifer or fresh water aquifers hydraulically connected to the Trinity Aquifer
  - A 15 mile buffer extended around injection wells identified in the Texas RRC database with screened intervals in the Trinity Aquifer or fresh water aquifers hydraulically connected to the Trinity Aquifer
  - Exclude brackish portions of the Trinity Aquifer hydraulically connected to fresh water aquifers

PPAs – Northern Trinity Aquifer

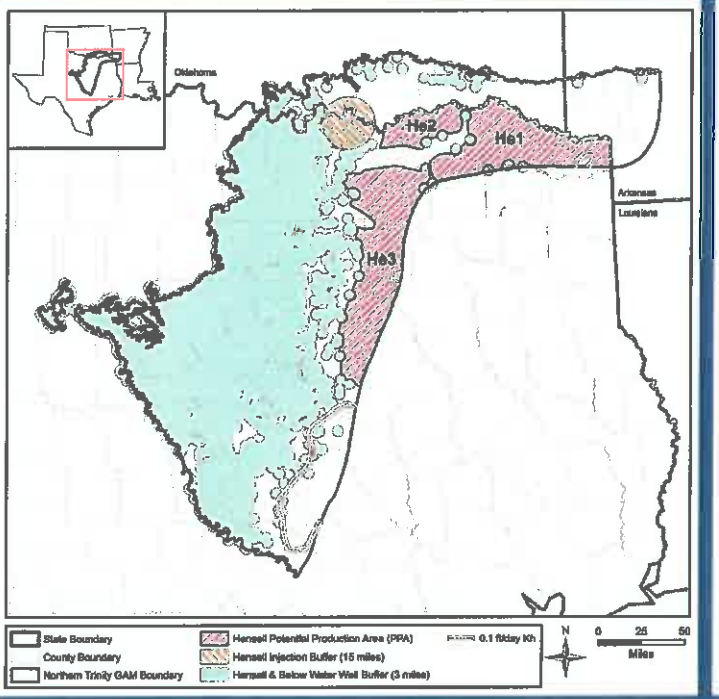


Paluxy PPAs

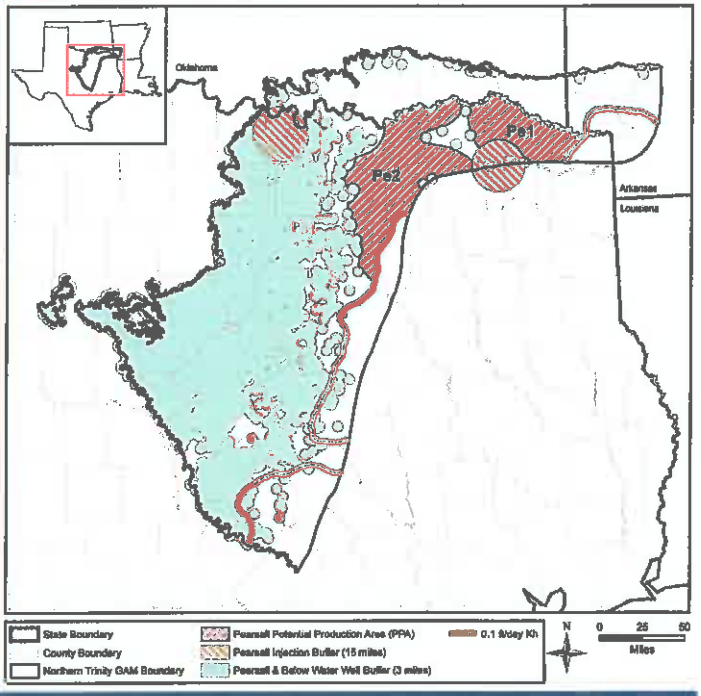


Glen Rose PPAs

PPAs – Northern Trinity Aquifer

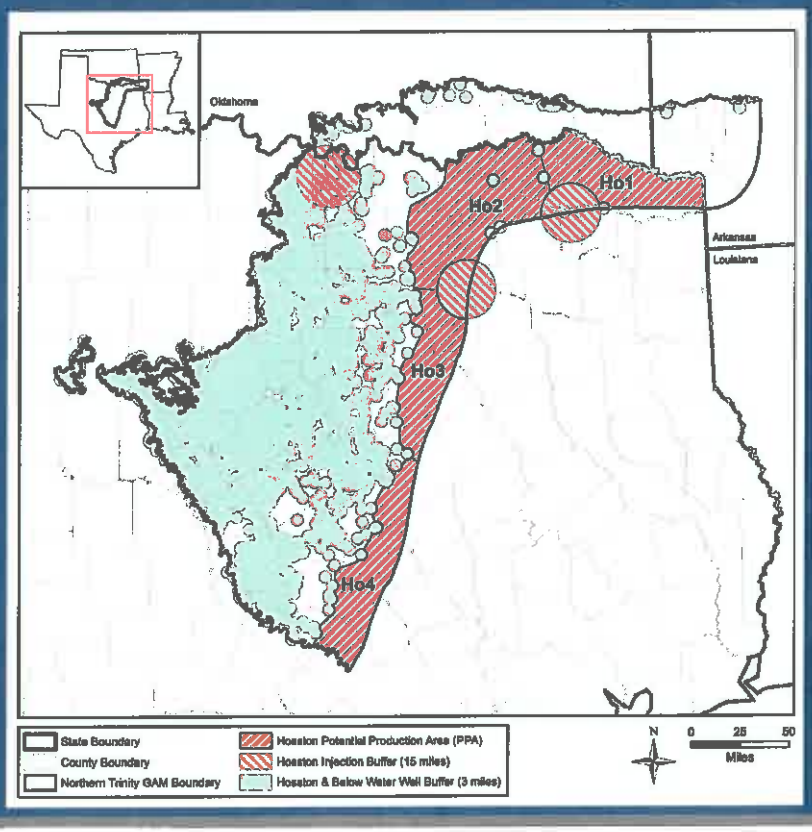


Hensell PPAs



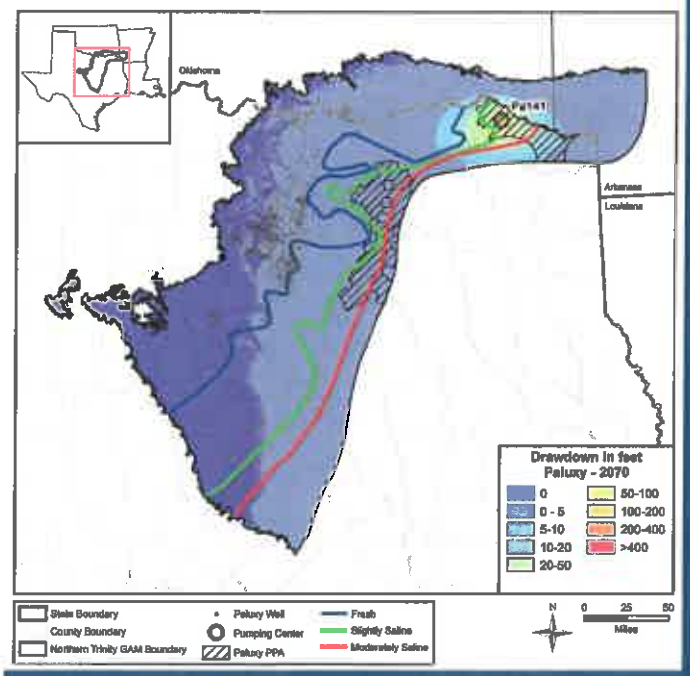
Pearsall PPAs

PPAs – Northern Trinity Aquifer

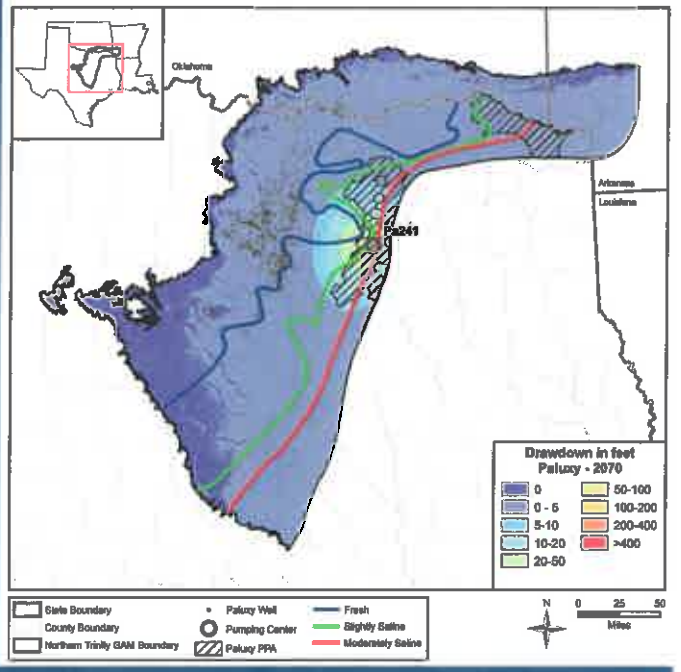


Hosston PPAs

NTA: Paluxy Drawdowns

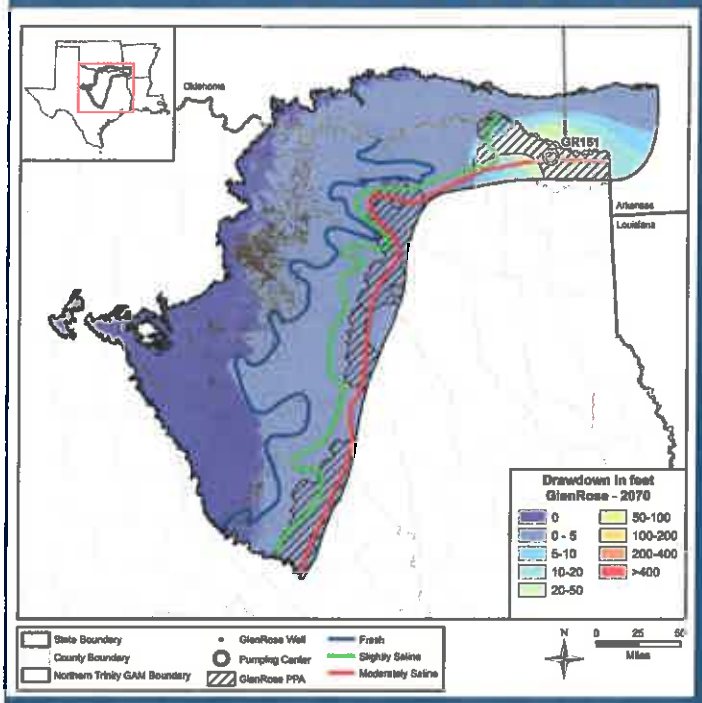


Estimated drawdown in the Paluxy Formation in the North Trinity Aquifer after 50 years of production in PPA 1, Wellfield 1.

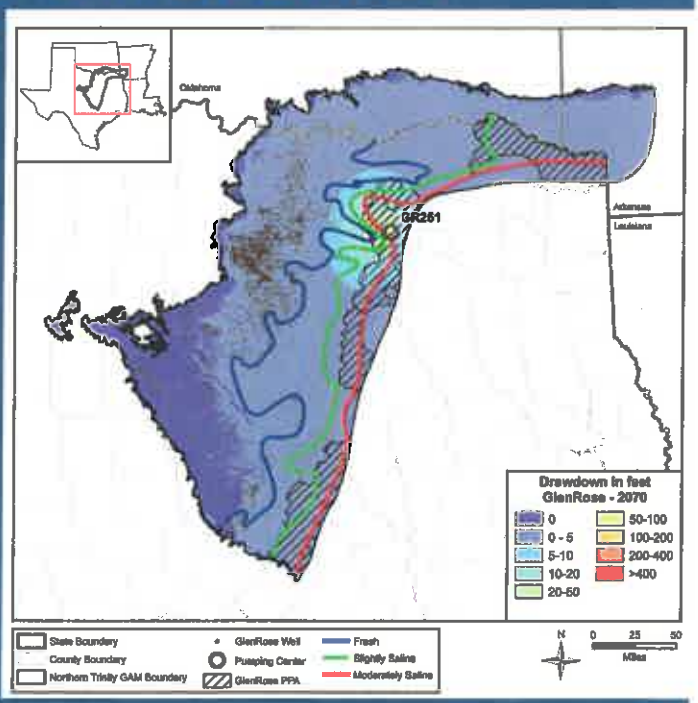


Estimated drawdown in the Paluxy Formation in the North Trinity Aquifer after 50 years of production in Paluxy PPA 2, Wellfield 1.

NTA: Glen Rose Drawdowns

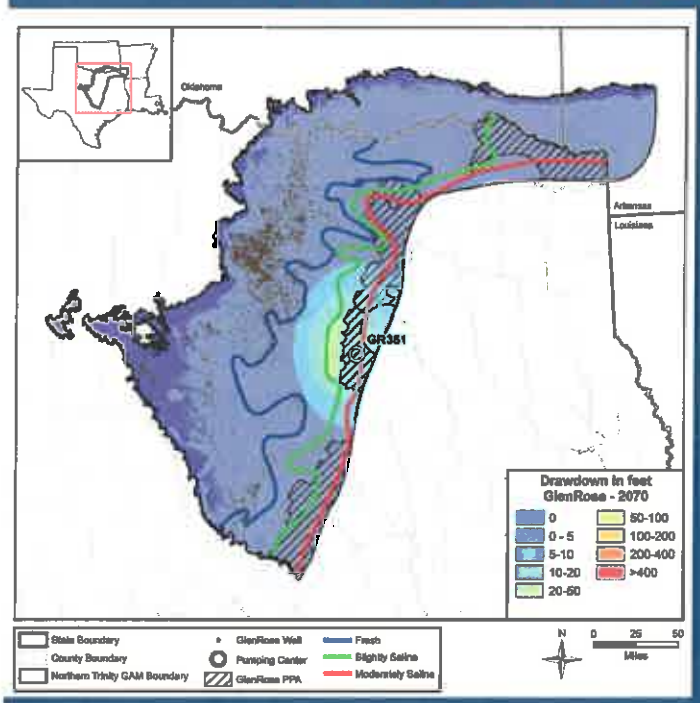


Estimated drawdown in the Glen Rose Formation in the North Trinity Aquifer after 50 years of production in Glen Rose PPA 1, Wellfield 1.

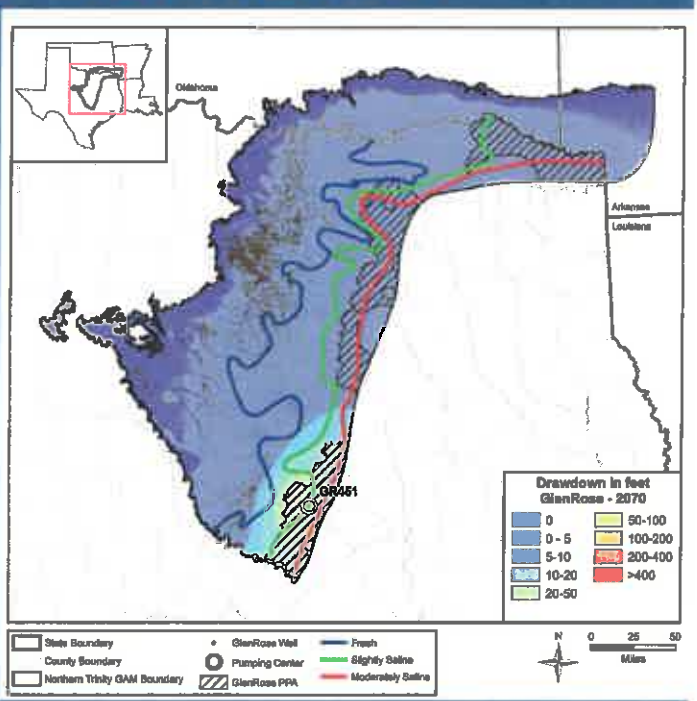


Estimated drawdown in the Glen Rose Formation in the North Trinity Aquifer after 50 years of production in Glen Rose PPA 2, Wellfield 1.

NTA: Glen Rose Drawdowns

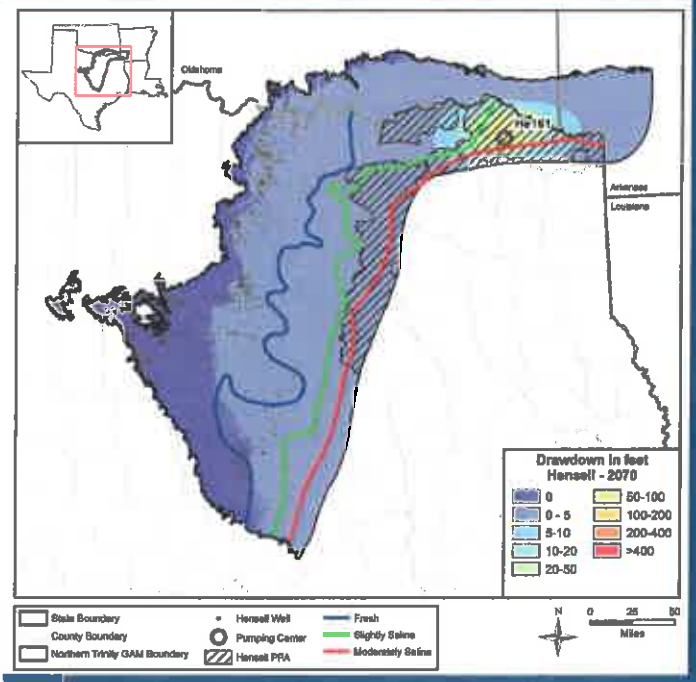


Estimated drawdown in the Glen Rose Formation in the North Trinity Aquifer after 50 years of production in Glen Rose PPA 3, Wellfield 1.

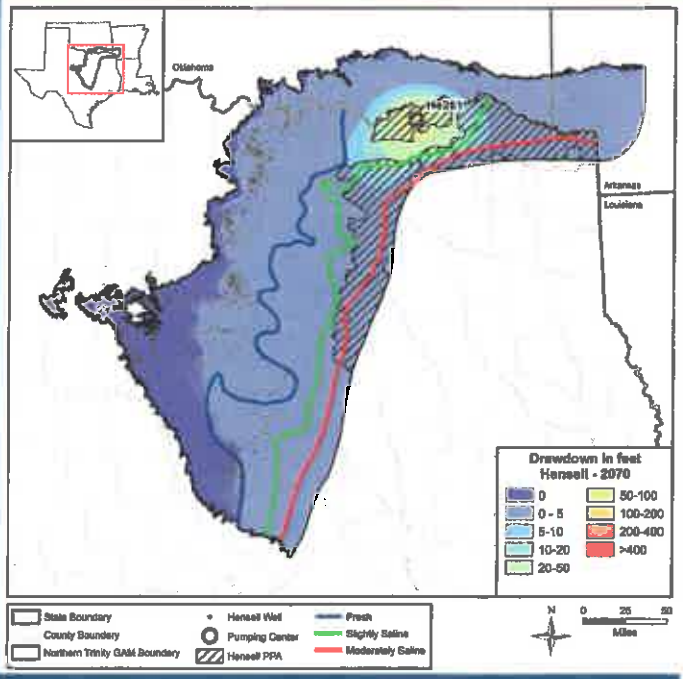


Estimated drawdown in the Glen Rose Formation in the North Trinity Aquifer after 50 years of production in Glen Rose PPA 4, Wellfield 1.

NTA: Hensell Drawdowns

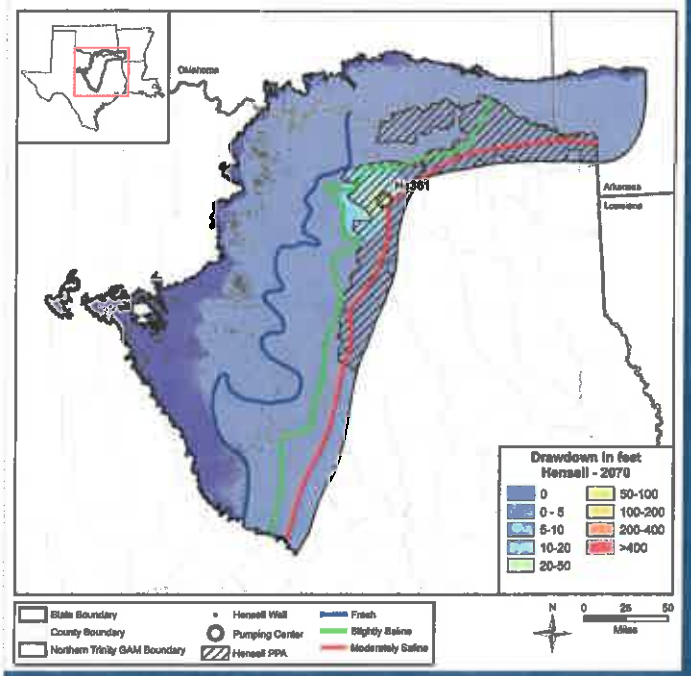


Estimated drawdown in the Hensell Formation in the North Trinity Aquifer after 50 years of production in in Hensell PPA 1, Wellfield 1.

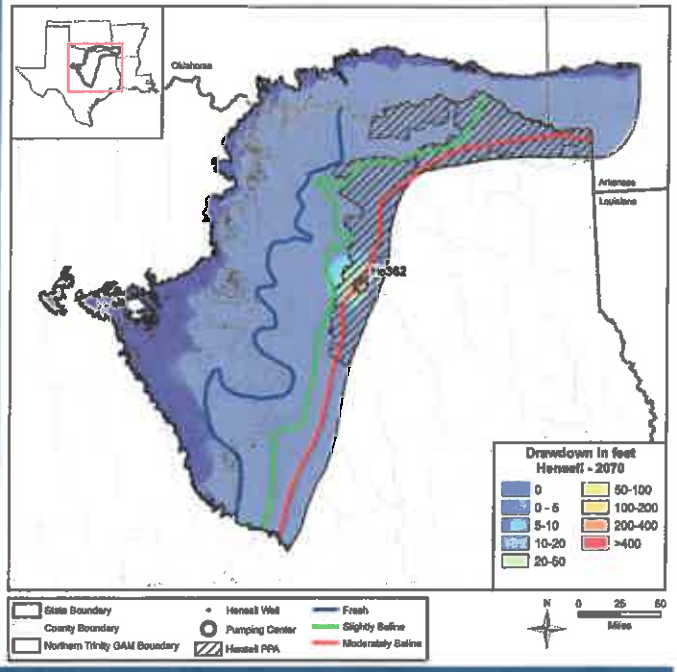


Estimated drawdown in the Hensell Formation in the North Trinity Aquifer after 50 years of production in Hensell PPA 2, Wellfield 1.

NTA: Hensell Drawdowns

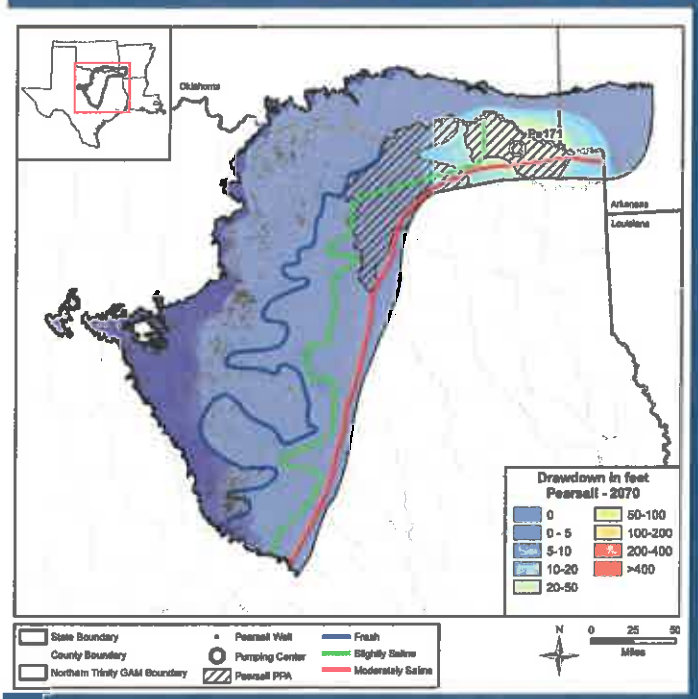


Estimated drawdown in the Hensell Formation in the North Trinity Aquifer after 50 years of production in in Hensell PPA 3, Wellfield 1.

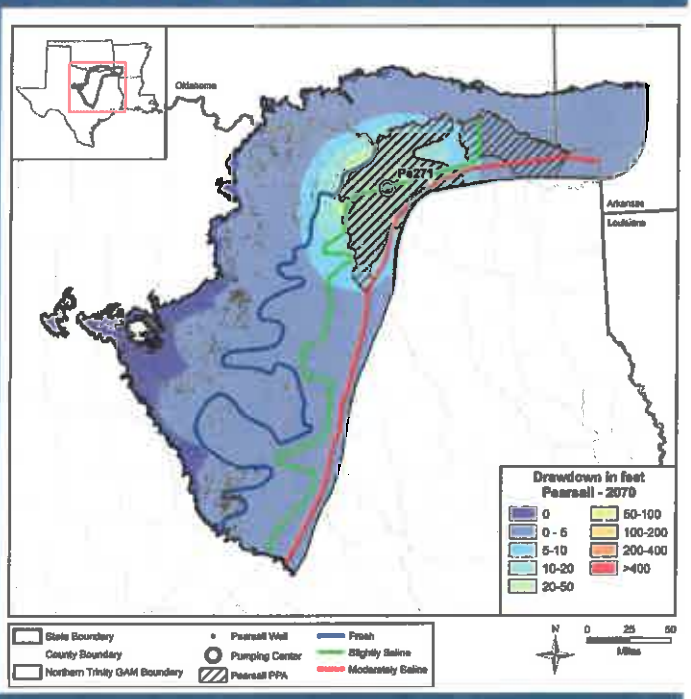


Estimated drawdown in the Hensell Formation in the North Trinity Aquifer after 50 years of production in in Hensell PPA 3, Wellfield 2.

NTA: Pearsall Drawdowns

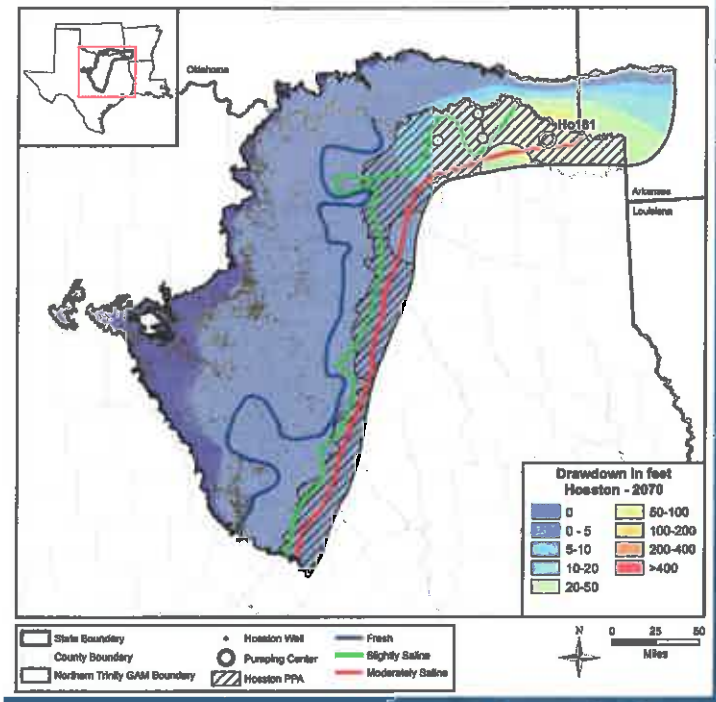


Estimated drawdown in the Pearsall Formation in the North Trinity Aquifer after 50 years of production in Pearsall PPA 1, Wellfield 1.

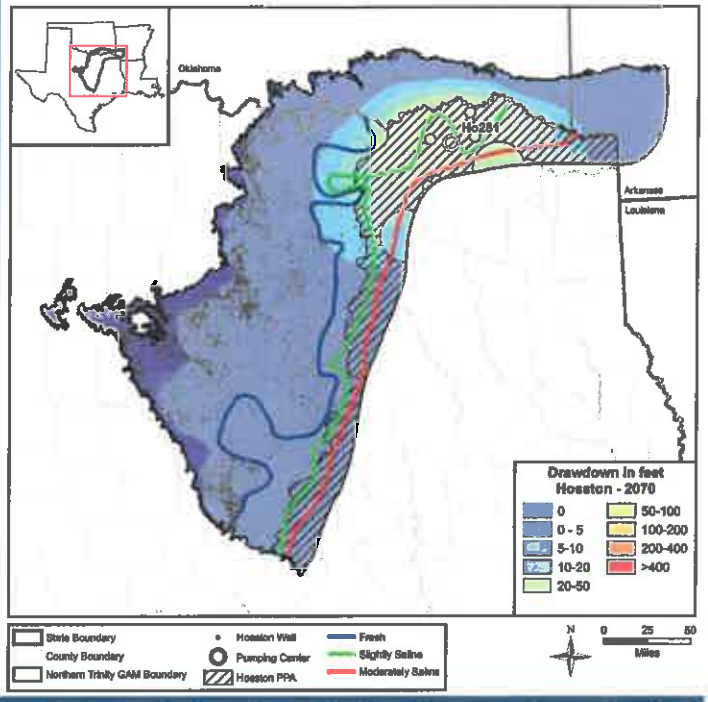


Estimated drawdown in the Pearsall Formation in the North Trinity Aquifer after 50 years of production in in Pearsall PPA 2, Wellfield 1.

NTA: Hosston Drawdowns

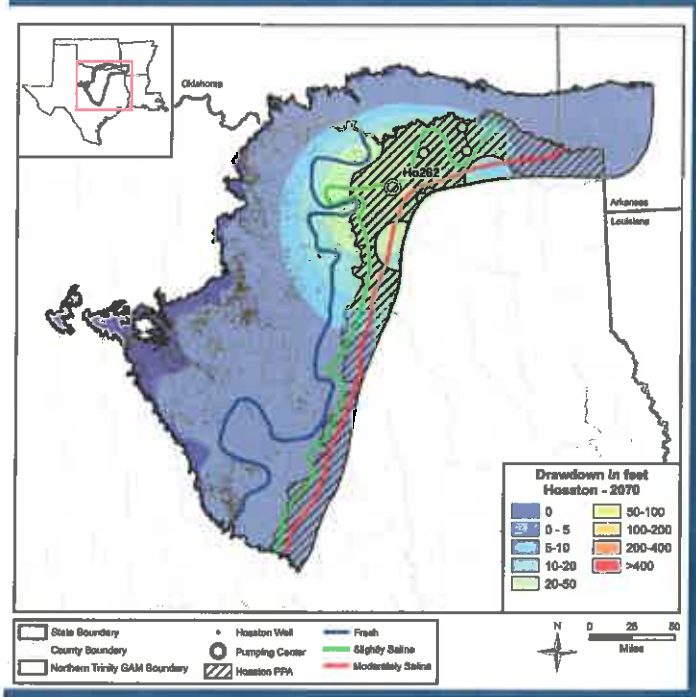


Estimated drawdown in the Hosston Formation in the North Trinity Aquifer after 50 years of production in Hosston PPA 1, Wellfield 1.

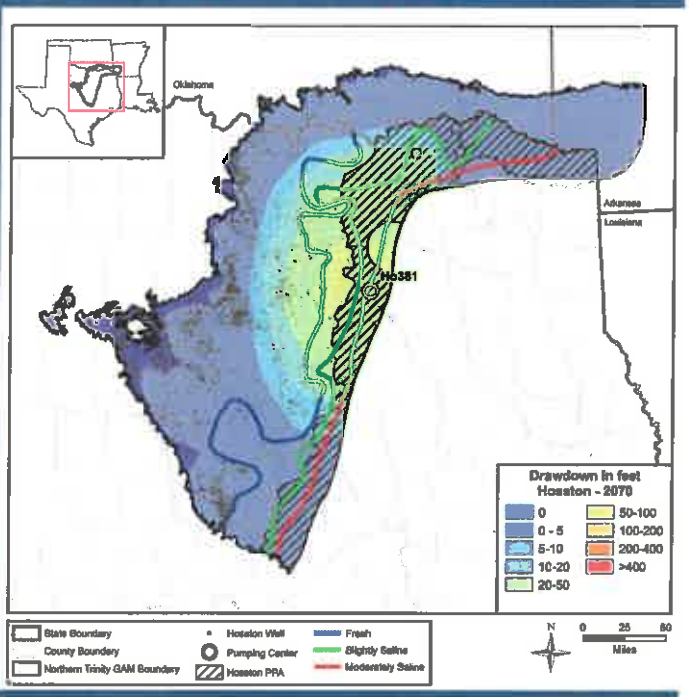


Estimated drawdown in the Hosston Formation in the North Trinity Aquifer after 50 years of production in Hosston PPA 2, Wellfield 1.

NTA: Hosston Drawdowns

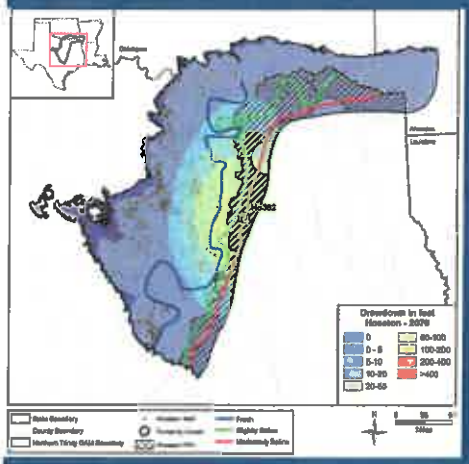


Estimated drawdown in the Hosston Formation in the North Trinity Aquifer after 50 years of production in Hosston PPA 2, Wellfield 2.

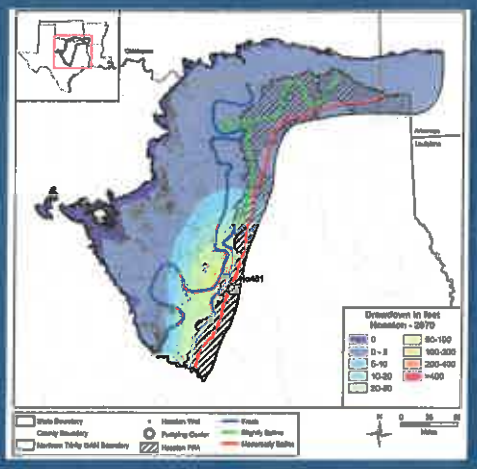


Estimated drawdown in the Hosston Formation in the North Trinity Aquifer after 50 years of production in Hosston PPA 3, Wellfield 1.

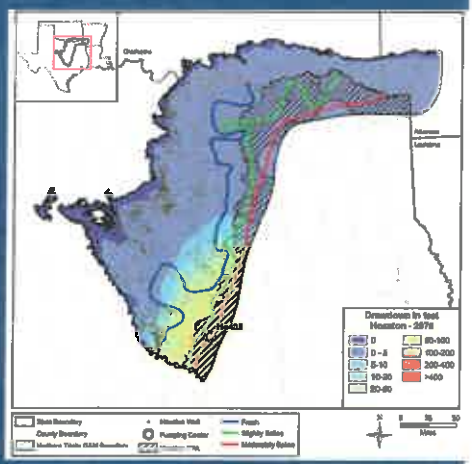
NTA: Hosston Drawdowns



Estimated drawdown in the Hosston Formation in the North Trinity Aquifer after 50 years of production in Hosston PPA 3, Wellfield 2.

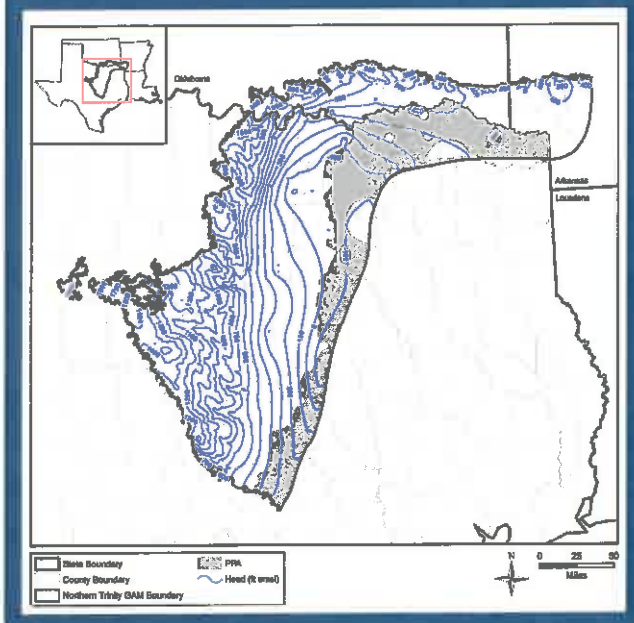


Estimated drawdown in the Hosston Formation in the North Trinity Aquifer after 50 years of production in Hosston PPA 4, Wellfield 1.

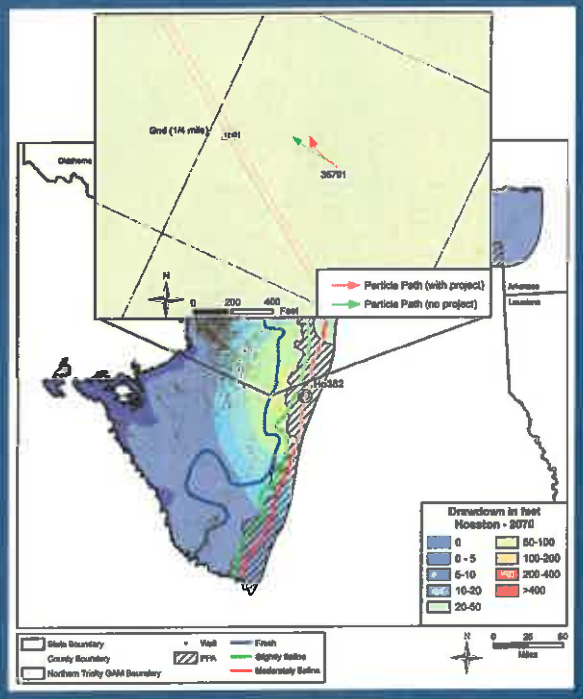


Estimated drawdown in the Hosston Formation in the North Trinity Aquifer after 50 years of production in Hosston PPA 4, Wellfield 2.

NTA: Drawdowns



Head contours in the Hosston Formation at the end of the basecase simulation.



Example of particle tracks after 50 years for simulation of pumping Hosston PPA #3 Wellfield #2.

What's next?

- The delineation of potential production areas presented today are draft and open to public comment
- This presentation will be publicly available at the TWDB BRACS website; Stakeholders will receive an email when it is posted
- Stakeholders should send their comments to the TWDB
- The Final Report will be posted to the TWDB website
- Brackish Groundwater Production Zones will be designated by the TWDB at a public board meeting in Spring 2018
- Stakeholders will receive an email with the meeting date, time, and location

Questions, Comments, and Input from Stakeholders

- Contact Info:
  Mark Robinson
  512-463-7657
  mark.robinson@twdb.texas.gov

http://www.twdb.texas.gov/innovativewater/bracs/projects/HB30_Trinity/index.asp

PPA drawdown details

- Backup slides

Simulation of drawdown in the North Trinity Aquifer after 30 years of production

					Total Pumping Rate (afy)			Max. Drawdown at Existing Well (ft)			Max Drawdown at Fresh Water Line (ft)			Max Drawdown in Unit (ft)		
Formation	PPA#	Well Field	Label	Depth to Unit Top (ft)	low	med.	high	low	med.	high	low	med.	high	low	med.	high
Paluxy	1	1	Pa141	1,279	205	411	822	15	29	59	4	8	15	95	191	382
Paluxy	2	1	Pa241	3,873	77	155	309	9	18	36	10	19	38	73	147	294
Glen Rose	1	1	GR151	2,808	164	328	657	4	8	16	0	1	1	102	205	409
Glen Rose	2	1	GR251	4,527	65	129	258	6	12	23	7	13	27	65	130	259
Glen Rose	3	1	GR351	2,754	121	242	483	11	22	43	1	3	5	76	152	305
Glen Rose	4	1	GR451	3,024	145	290	581	7	14	29	3	7	14	75	151	301
Hensell	1	1	He161	3,387	92	184	368	4	8	16	0	0	0	100	201	401
Hensell	2	1	He261	2,180	83	166	332	16	31	62	1	2	4	84	168	335
Hensell	3	1	He361	4,497	18	36	73	2	4	7	1	2	4	42	84	168
Hensell	3	2	He362	4,165	10	19	39	3	6	13	0	0	1	77	154	308
Pearsall	1	1	Pe171	4,010	445	890	1,780	5	10	19	0	1	1	101	203	406
Pearsall	2	1	Pe271	3,634	376	752	1,504	7	13	27	9	17	34	63	126	252
Hosston	1	1	Ho181	3,913	317	633	1,267	16	32	63	1	1	2	102	203	407
Hosston	2	1	Ho281	5,099	553	1,105	2,211	19	37	74	4	8	17	85	171	341
Hosston	2	2	Ho282	4,408	465	931	1,861	9	19	37	11	21	42	53	106	213
Hosston	3	1	Ho381	4,752	479	957	1,915	21	42	83	13	26	51	71	141	282
Hosston	3	2	Ho382	4,506	699	1,398	2,796	17	34	67	13	25	51	73	146	292
Hosston	4	1	Ho481	3,098	163	327	653	18	36	72	17	34	69	46	93	186
Hosston	4	2	Ho482	3,615	154	308	616	23	46	91	10	21	42	68	135	270

Estimated drawdown for a 1,000 afy wellfield after 50 years of production – Northern Trinity Aquifer

Formation	PPA#	Well Field	Label	Depth to Unit Top (ft)	Total Pumping Rate (afy)	Max. Drawdown at Existing Well (ft)	Max Drawdown at Fresh Water Line (ft)	Max Drawdown in Unit (ft)
Paluxy	1	1	Pa141	1,279	1,000	73	20	466
Paluxy	2	1	Pa241	3,873	1,000	123	128	954
Glen Rose	1	1	GR151	2,808	1,000	26	3	625
Glen Rose	2	1	GR251	4,527	1,000	94	107	1,007
Glen Rose	3	1	GR351	2,754	1,000	91	12	633
Glen Rose	4	1	GR451	3,024	1,000	52	25	523
Hensell	1	1	He161	3,387	1,000	44	1	1,093
Hensell	2	1	He261	2,180	1,000	188	14	1,010
Hensell	3	1	He361	4,497	1,000	102	57	2,315
Hensell	3	2	He362	4,165	1,000	341	25	7,993*
Pearsall	1	1	Pe171	4,010	1,000	12	1	229
Pearsall	2	1	Pe271	3,634	1,000	19	24	169
Hosston	1	1	Ho181	3,913	1,000	53	3	325
Hosston	2	1	Ho281	5,099	1,000	35	9	156
Hosston	2	2	Ho282	4,408	1,000	22	25	117
Hosston	3	1	Ho381	4,752	1,000	48	31	152
Hosston	3	2	Ho382	4,506	1,000	26	20	107
Hosston	4	1	Ho481	3,098	1,000	118	114	293
Hosston	4	2	Ho482	3,615	1,000	174	84	463

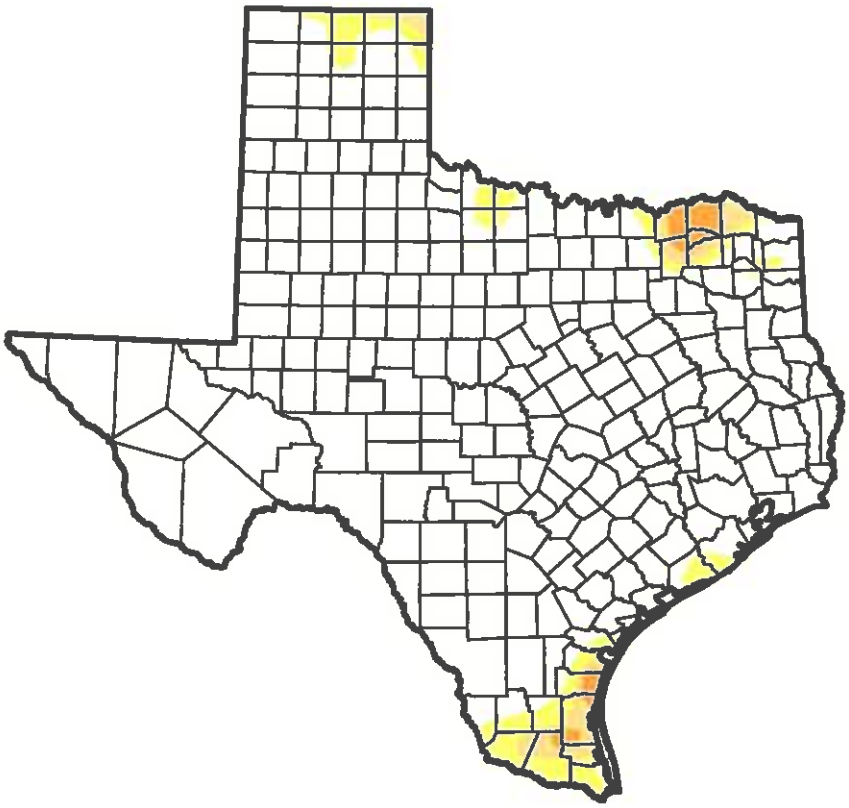
Minimum and maximum change in simulated travel distances at 50 years – Northern Trinity Aquifer

				Maximum Difference in Distance				Minimum Difference in Distance			
Formation	PPA#	Well Field	Label	Particle ID	Base Distance (ft)	Project Distance (ft)	Difference (ft)	Particle ID	Base Distance (ft)	Project Distance (ft)	Difference (ft)
Paluxy	1	1	Pa141	6733	56	78	22	7060	52	41	-11
Paluxy	2	1	Pa241	6109	59	101	42	5944	35	4	-31
Glen Rose	1	1	GR151	13598	43	44	1	13640	44	42	-2
Glen Rose	2	1	GR251	13925	10	17	7	10753	102	99	-3
Glen Rose	3	1	GR351	8514	355	361	5	13755	3,117	3,111	-5
Glen Rose	4	1	GR451	16171	127	140	13	13755	3,117	2,541	-576
Hensell	1	1	He161	17106	1,814	1,815	1	19546	1,225	1,224	-1
Hensell	2	1	He261	17106	1,814	1,820	6	19950	1,373	1,363	-10
Hensell	3	1	He361	17594	1,079	1,089	10	17172	1,514	1,495	-19
Hensell	3	2	He362	20376	1,779	1,787	8	19827	567	562	-5
Pearsall	1	1	Pe171	32457	1,627	1,631	4	34056	1,413	1,409	-4
Pearsall	2	1	Pe271	32394	1,587	1,617	30	33721	575	553	-23
Hosston	1	1	Ho181	32796	1,636	1,716	80	33096	5,978	5,904	-74
Hosston	2	1	Ho281	36045	368	429	61	34935	814	725	-89
Hosston	2	2	Ho282	36046	143	226	82	35770	201	104	-97
Hosston	3	1	Ho381	35671	3,057	3,137	80	37614	1,441	1,297	-144
Hosston	3	2	Ho382	36712	2,316	2,494	177	36748	1,970	1,816	-153
Hosston	4	1	Ho481	23677	889	892	2	27515	280	278	-2
Hosston	4	2	Ho482	27467	280	307	27	26908	380	347	-33

ATTACHMENT G

Monthly Drought Monitor Maps for Texas

U.S. Drought Monitor
Texas



January 24, 2017
(Released Thursday, Jan. 26, 2017)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	92.24	7.76	3.19	1.08	0.01	0.00
Last Week *1/17/2017*	82.78	17.22	4.01	0.94	0.15	0.00
3 Months Ago *10/25/2016*	64.92	35.08	10.84	1.10	0.00	0.00
Start of Calendar Year *1/3/2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *9/27/2016*	94.83	5.17	0.62	0.00	0.00	0.00
One Year Ago *1/26/2016*	98.05	1.95	0.00	0.00	0.00	0.00

Intensity:

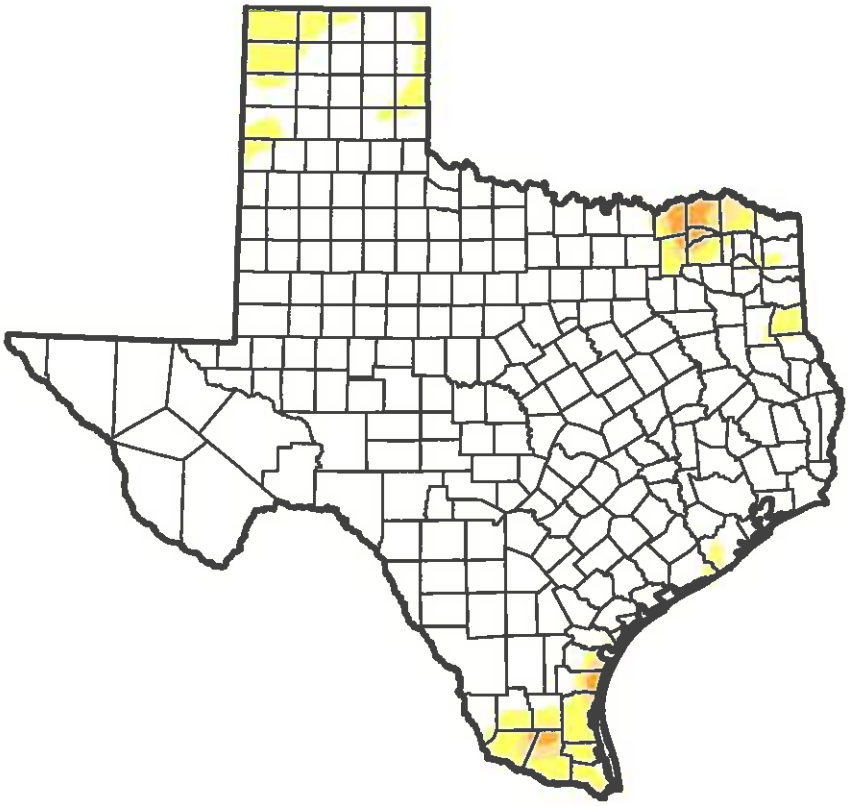
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Richard Tinker
CPC/NOAA/NWS/NCEP

http://droughtmonitor.unl.edu/

U.S. Drought Monitor
Texas



February 21, 2017
(Released Thursday, Feb. 23, 2017)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	91.57	8.43	2.07	0.82	0.00	0.00
Last Week *2/14/2017*	88.14	11.86	3.89	1.26	0.53	0.00
3 Months Ago *11/22/2016*	66.53	33.47	14.73	7.91	1.09	0.00
Start of Calendar Year *1/3/2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *9/27/2016*	94.83	5.17	0.62	0.00	0.00	0.00
One Year Ago *2/23/2016*	77.61	22.39	0.79	0.00	0.00	0.00

Intensity:

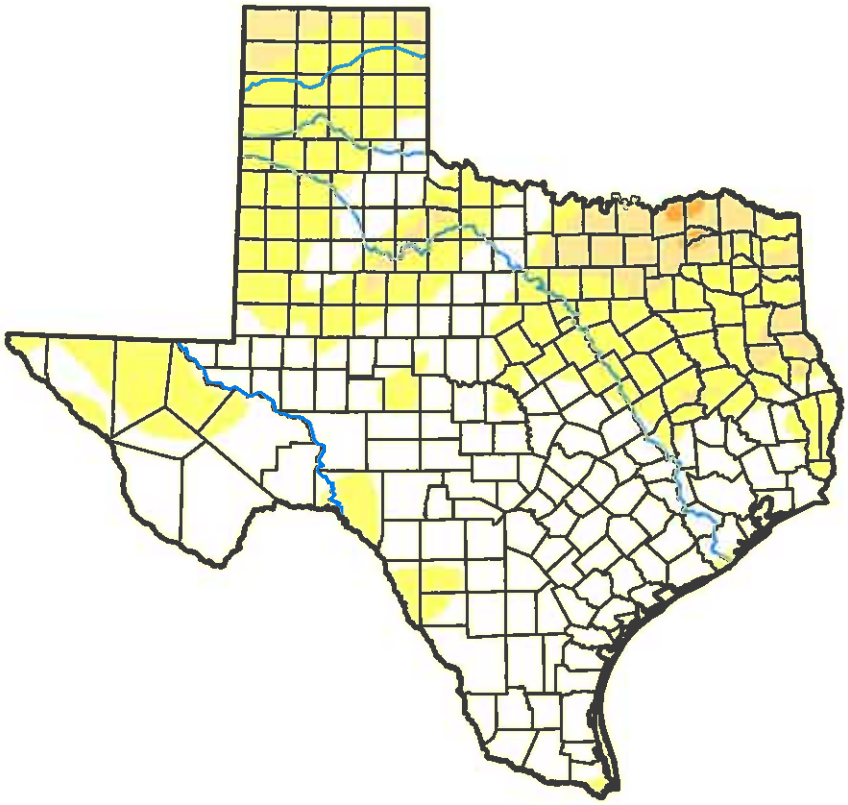
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Richard Heim
NCEI/NOAA

http://droughtmonitor.unl.edu/

U.S. Drought Monitor
Texas



March 28, 2017
(Released Thursday, Mar. 30, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	55.06	44.94	8.67	0.40	0.00	0.00
Last Week *03-21-2017*	53.46	46.54	8.63	0.93	0.00	0.00
3 Months Ago *12-27-2016*	75.85	24.15	6.97	1.77	0.04	0.00
Start of Calendar Year *01-03-2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *09-27-2016*	94.83	5.17	0.62	0.00	0.00	0.00
One Year Ago *03-29-2016*	75.16	24.84	2.96	0.00	0.00	0.00

Intensity:

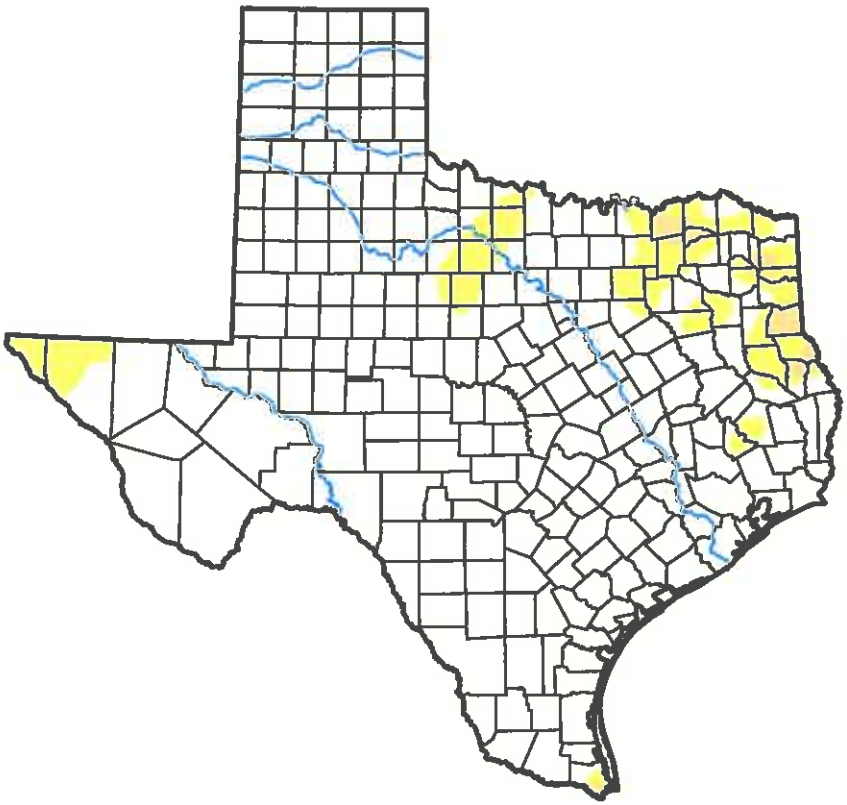
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Eric Luebehusen
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/

U.S. Drought Monitor
Texas



April 25, 2017
(Released Thursday, Apr. 27, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	90.58	9.42	1.34	0.00	0.00	0.00
Last Week *04-18-2017*	90.30	9.70	1.54	0.00	0.00	0.00
3 Months Ago *01-24-2017*	92.24	7.76	3.19	1.08	0.01	0.00
Start of Calendar Year *01-03-2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *09-27-2016*	94.83	5.17	0.62	0.00	0.00	0.00
One Year Ago *04-26-2016*	86.91	13.09	2.28	0.27	0.00	0.00

Intensity:

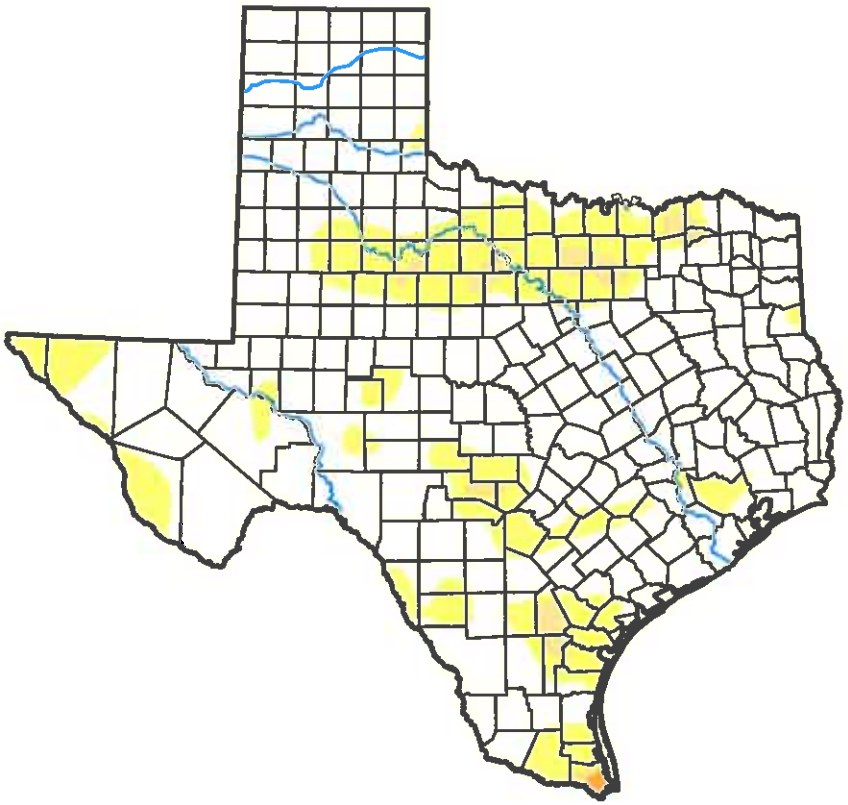
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Eric Luebehusen
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/

U.S. Drought Monitor
Texas



May 23, 2017
(Released Thursday, May. 25, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	77.70	22.30	2.41	0.19	0.00	0.00
Last Week *05-16-2017*	65.58	34.42	6.15	1.20	0.00	0.00
3 Months Ago *02-21-2017*	91.57	8.43	2.07	0.82	0.00	0.00
Start of Calendar Year *01-03-2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *09-27-2016*	94.83	5.17	0.62	0.00	0.00	0.00
One Year Ago *05-24-2016*	97.30	2.70	0.00	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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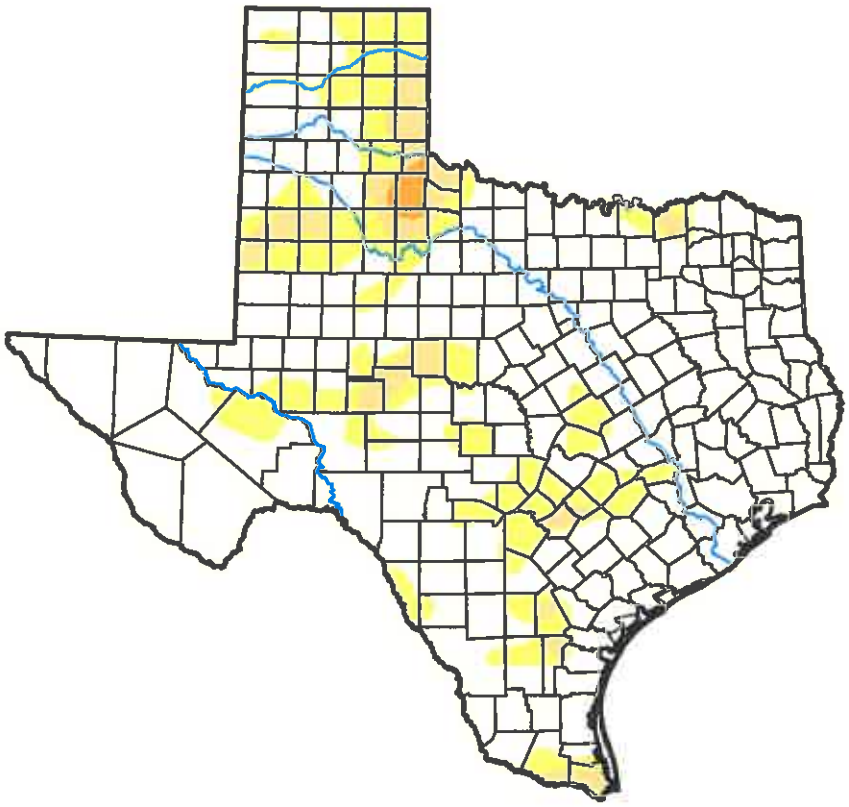
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/

U.S. Drought Monitor
Texas



June 27, 2017
(Released Thursday, Jun. 29, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	76.48	23.52	5.98	0.61	0.00	0.00
Last Week *06-20-2017*	72.65	27.35	4.84	0.00	0.00	0.00
3 Months Ago *03-28-2017*	55.06	44.94	8.67	0.40	0.00	0.00
Start of Calendar Year *01-03-2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *09-27-2016*	94.83	5.17	0.62	0.00	0.00	0.00
One Year Ago *06-28-2016*	98.62	1.38	0.00	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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http://droughtmonitor.unl.edu/

U.S. Drought Monitor
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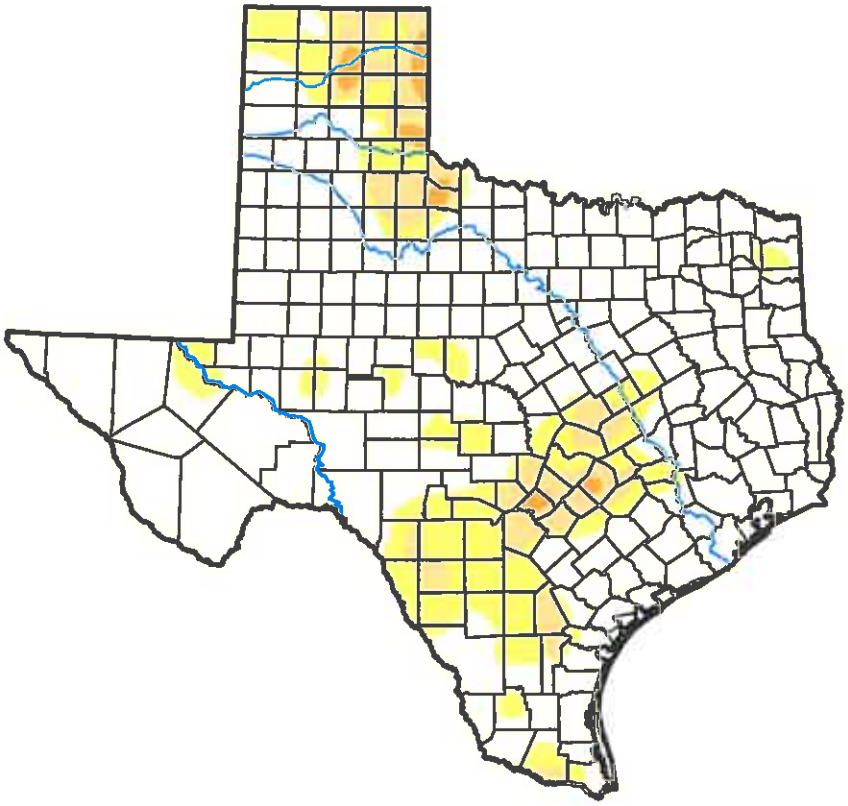

July 25, 2017
(Released Thursday, Jul. 27, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	75.04	24.96	8.99	1.26	0.00	0.00
Last Week *07-18-2017*	74.42	25.58	7.85	0.46	0.00	0.00
3 Months Ago *04-25-2017*	90.58	9.42	1.34	0.00	0.00	0.00
Start of Calendar Year *01-03-2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *09-27-2016*	94.83	5.17	0.62	0.00	0.00	0.00
One Year Ago *07-26-2016*	63.03	36.97	5.89	0.18	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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U.S. Drought Monitor
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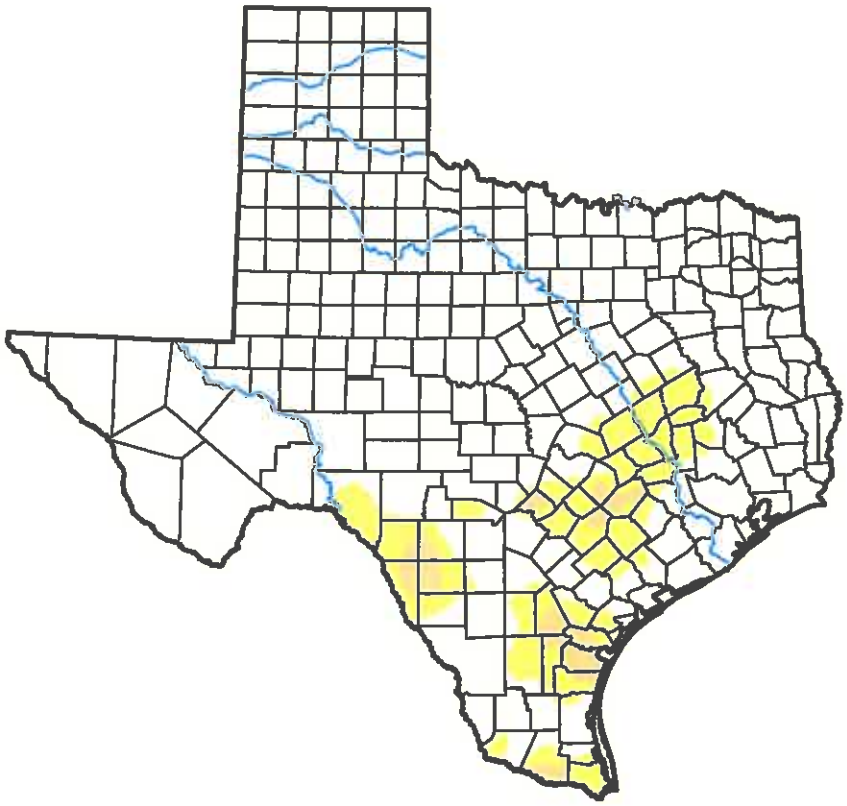

August 22, 2017
(Released Thursday, Aug. 24, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	86.44	13.56	2.47	0.00	0.00	0.00
Last Week *08-15-2017*	89.71	10.29	1.23	0.00	0.00	0.00
3 Months Ago *05-23-2017*	77.70	22.30	2.41	0.19	0.00	0.00
Start of Calendar Year *01-03-2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *09-27-2016*	94.83	5.17	0.62	0.00	0.00	0.00
One Year Ago *08-23-2016*	85.07	14.93	3.91	0.74	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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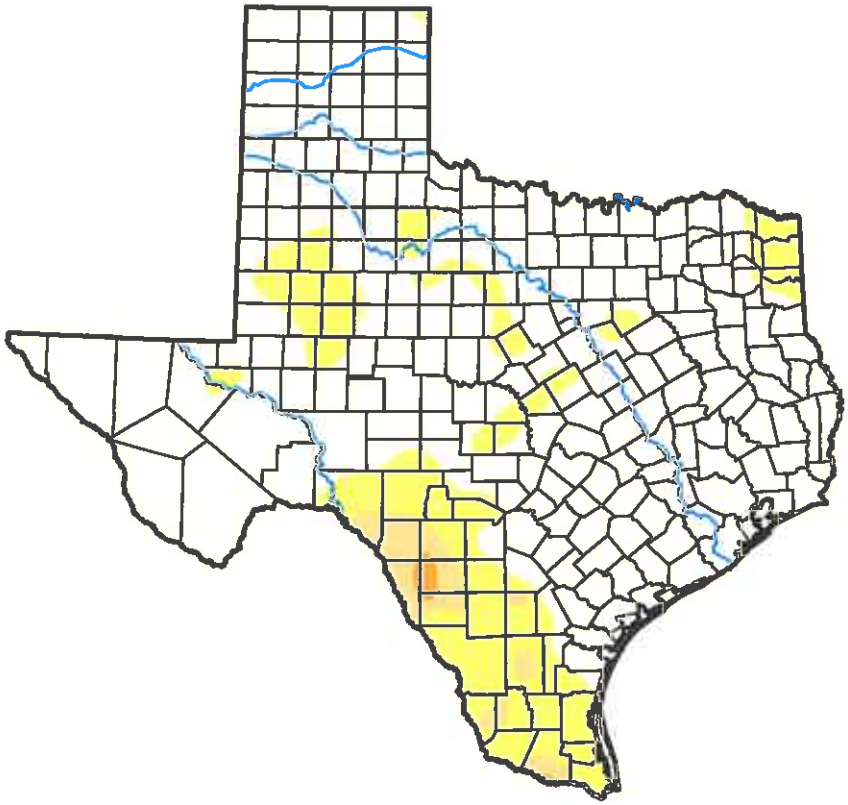

September 19, 2017
(Released Thursday, Sep. 21, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	79.27	20.73	3.27	0.35	0.00	0.00
Last Week *09-12-2017*	92.45	7.55	1.52	0.04	0.00	0.00
3 Months Ago *06-20-2017*	72.65	27.35	4.84	0.00	0.00	0.00
Start of Calendar Year *01-03-2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *09-27-2016*	94.83	5.17	0.62	0.00	0.00	0.00
One Year Ago *09-20-2016*	95.44	4.56	0.94	0.12	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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U.S. Drought Monitor
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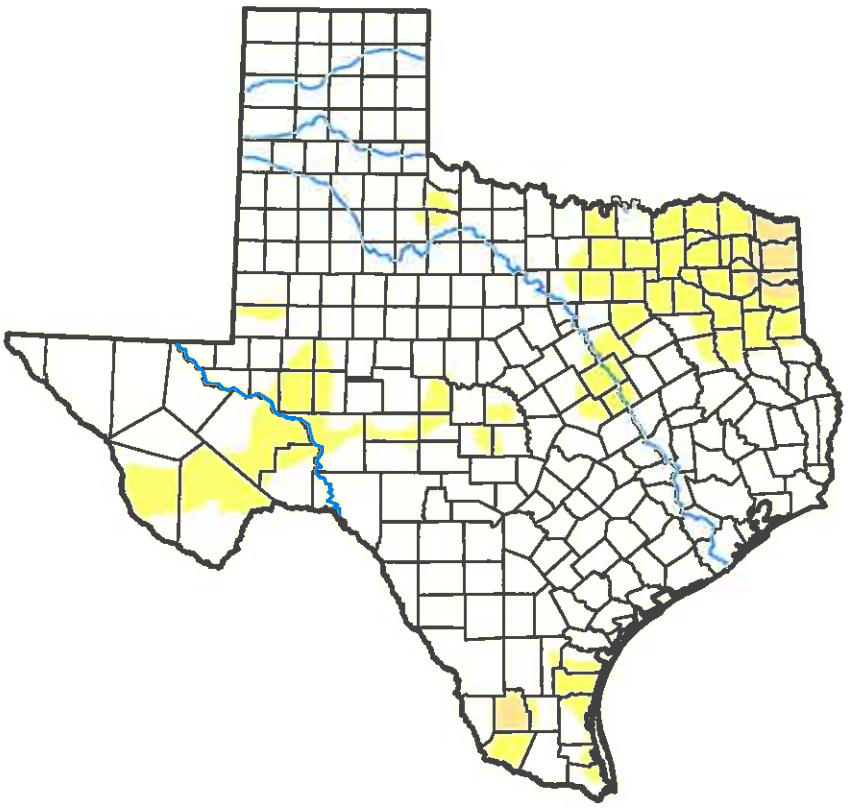

October 24, 2017
(Released Thursday, Oct. 26, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	80.89	19.11	1.74	0.00	0.00	0.00
Last Week *10-17-2017*	80.83	19.17	4.32	0.00	0.00	0.00
3 Months Ago *07-25-2017*	75.04	24.96	8.99	1.26	0.00	0.00
Start of Calendar Year *01-03-2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *09-26-2017*	70.54	29.46	4.17	0.04	0.00	0.00
One Year Ago *10-25-2016*	64.92	35.08	10.84	1.10	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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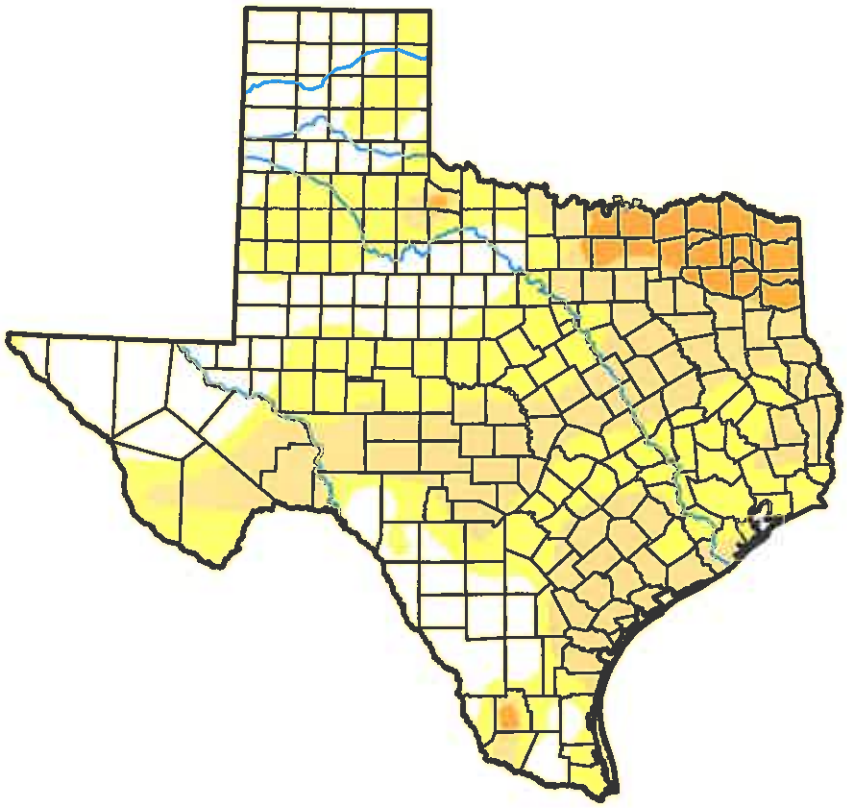

November 28, 2017
(Released Thursday, Nov. 30, 2017)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	28.73	71.27	35.11	5.50	0.00	0.00
Last Week *11-21-2017*	40.02	59.98	20.23	3.25	0.00	0.00
3 Months Ago *08-29-2017*	96.14	3.86	0.87	0.00	0.00	0.00
Start of Calendar Year *01-03-2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *09-26-2017*	70.54	29.46	4.17	0.04	0.00	0.00
One Year Ago *11-29-2016*	66.37	33.63	14.18	3.27	0.08	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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U.S. Drought Monitor
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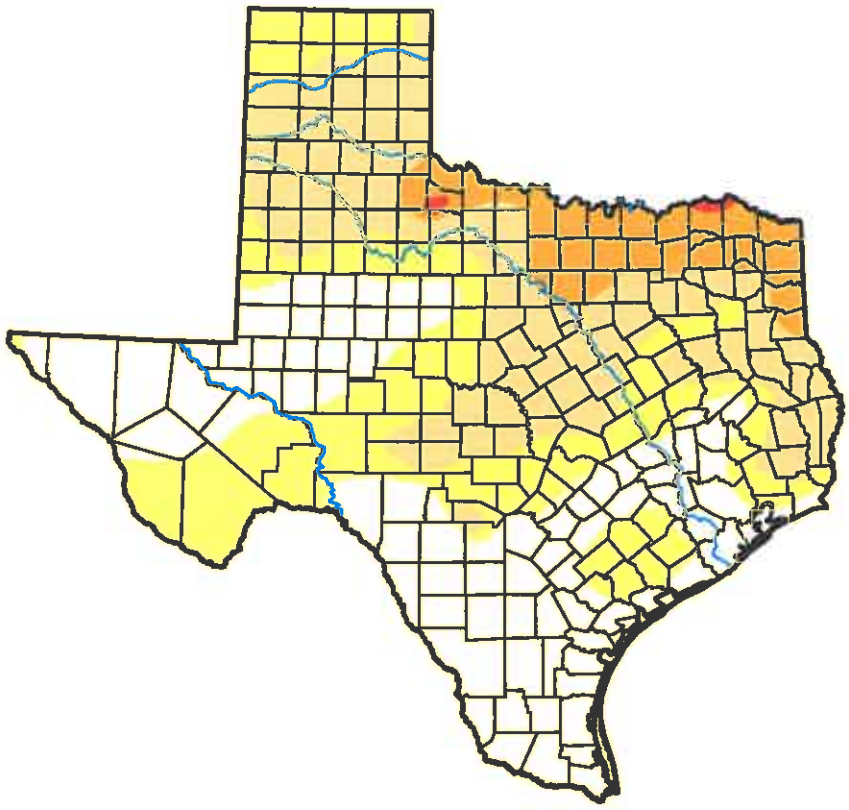

December 19, 2017
(Released Thursday, Dec. 21, 2017)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	36.13	63.87	37.03	8.84	0.25	0.00
Last Week *12-12-2017*	28.56	71.44	26.17	11.74	0.76	0.00
3 Months Ago *09-19-2017*	79.27	20.73	3.27	0.35	0.00	0.00
Start of Calendar Year *01-03-2017*	81.50	18.50	6.29	1.97	0.04	0.00
Start of Water Year *09-26-2017*	70.54	29.46	4.17	0.04	0.00	0.00
One Year Ago *12-20-2016*	79.50	20.50	7.52	1.94	0.04	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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ATTACHMENT H

Water Loss Information

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Entity	PWS ID	Year of Audit	Population Size	Retail Connections Served	Service Connection Density (#/mile)	Average Yearly Operating Pressure (pounds per square inch)	Customer Meter Accuracy %	Data Handling Discrepancy Loss (gallons per connection per day)	Unauthorized Consumption (gallons per connection per day)	Apparent Loss per Connection (gallons per connection per day)	Real Loss per Connection (gallons per connection per day)	Real Loss per Mile (gallons per mile per day)	OK?
2	**Fannin County**													
3	Arledge Ridge WSC	TX074001	2015	1,580	527	1	65	80.0	0.0	0.8	46	n/a	88	N
4	Bois D Arc MUD	TX0740044	2016	2760	1103	5.1	80	97	0.4	0.7	6	n/a	330	Y
5	City of Bonham	TX0740001	2016	10058	4711	62.8	56	98	0.0	0.7	5	51	n/a	N
6	City of Ector	TX074000	2010	600	327	23	70	99.0	0.0	0.5	2	n/a	621	Y
7	City of Honey Grove	TX0740003	2016	1668	748	32.5	56	98	0.0	0.4	4	31	n/a	Y
8	City of Ladonia	TX0740004	2016	602	454	15.1	40	95	0.0	1.1	6	n/a	4,838	N
9	City of Leonard	TX0740005	2016	2154	854	213.5	45	99	0.0	0.8	3	43	n/a	Y
10	City of Savoy	TX0740006	2016	831	346	34.2	80	80	0.0	0.0	38	50	n/a	N
11	City of Trenton	TX074000	2010	662	330	10	58	98.0	0.0	0.9	8	n/a	104	Y
12	City of Windom	TX074000	2010	245	130	22	60	100.0	0.0	0.4	0	n/a	63	Y
13	Dial WSC	TX074002	2015	205	110	4	65	90.0	0.0	0.4	15	n/a	87	N
14	Gober MUD	TX074002	2015	250	145	10	60	98.0	0.0	0.5	4	n/a	363	Y
15	Randolph WSC	TX074002	2010	390	151	10	60	100.0	0.0	0.4	0	n/a	1,576	Y
16	Ravenna Nunnelee WSC	TX074003	2015	317	317	10	60	90.0	0.0	0.5	15	n/a	697	N
17	Southwest Fannin County SUD	TX074003	2015	7,878	2,251	3	70	99.0	0.0	0.6	2	n/a	136	Y
18	West Leonard WSC	TX0740034	2016	1851	627	10.5	48	90	0.0	0.6	21	n/a	418	N
19	White Shed WSC	TX074003	2015	2,800	1,067	9	60	98.0	0.0	0.0	3	n/a	258	Y
20														
21	**Grayson County**													
22	Carriage House Estates	TX091008	2013	486	162	41	54	97.0	0.0	0.7	9	6	n/a	Y
23	City of Bells	TX091000	2014	1,980	596	37	42	97.0	5.7	0.6	12	47	n/a	N
24	City of Collinsville	TX091000	2015	2,420	913	11	65	95.0	0.0	0.5	10	n/a	79	Y
25	City of Denison	TX0910003	2016	22907	10177	40.7	47	99.6	0.0	1.0	2	48	n/a	N
26	City of Dorchester	TX091002	2011	1,268	576	8	60	98.0	0.0	0.9	5	n/a	912	N
27	City of Gunter	TX091001	2015	1,512	504	6	65	95.0	0.0	0.8	14	n/a	219	Y
28	City of Howe	TX091001	2015	2,600	1,090	103	60	100.0	0.0	0.5	1	5	n/a	Y
29	City of Pottsboro	TX0910004	2016	2130	1037	51.9	80	99	0.0	0.7	3	55	n/a	N
30	City of Sadler	TX0910014	2016	400	188	26.9	60	94	0.0	0.5	9	n/a	680	N
31	City of Sherman - updated to ma	TX0910006	2016	40667	18607	63.3	68	98	0.0	1.0	8	39	n/a	Y
32	City of Southmayd	TX091004	2015	500	157	7	65	95.0	0.0	0.8	16	n/a	150	Y
33	City of Southmayd Westview Su	TX091004	2015	950	317	32	65	95.0	0.0	0.3	5	n/a	239	Y
34	City of Tioga	TX0910007	2016	1407	504	38.8	65	97	0.1	0.5	7	10	n/a	Y
35	City of Tom Bean	TX0910008	2016	1045	461	32.1	55	98	0.0	0.7	4	59	n/a	N
36	City of Van Alstyne	TX0910009	2016	3230	1499	25.0	60	96	0.1	0.6	9	n/a	205	Y
37	City of Whitesboro	TX0910010	2016	3899	1978	68.2	65	95	0.0	0.5	10	6	n/a	Y
38	City of Whitewright	TX0910011	2016	2150	860	31.9	50	98	0.0	0.9	7	n/a	2,378	N
39	High Country Estates	TX091011	2013	342	114	18	52	96.0	0.0	0.9	14	n/a	245	Y
40	Kentuckytown WSC	TX091006	2015	3,300	1,101	16	60	99.0	0.0	0.7	3	n/a	1,174	Y
41	Luella SUD	TX091003	2015	3,300	1,130	13	60	98.0	0.0	0.6	5	n/a	230	Y
42	Marilee Elmont	TX0910055	2015	1,602	534	6	55	100.0	0.0	0.7	1	n/a	224	Y
43	Marilee SUD	TX091008	2015	5,226	1,742	6	55	98.0	0.0	0.9	7	n/a	433	Y
44	Oak Ridge South Gale WSC	TX0910033	2016	3000	931	93.1	75	98	0.0	0.4	3	27	n/a	Y
45	Pink Hill WSC	TX091003	2015	2,290	730	7	61	98.0	0.0	0.6	4	n/a	163	Y
46	PRESTON CLUB UTILITY	TX0910143	2016	262	105	21.0	65	95	0.0	0.6	7	n/a	2,049	N

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Entity	PWS ID	Year of Audit	Population Size	Retail Connections Served	Service Connection Density (#/mile)	Average Yearly Operating Pressure (pounds per square inch)	Customer Meter Accuracy %	Data Handling Discrepancy Loss (gallons per connection per day)	Unauthorized Consumption (gallons per connection per day)	Apparent Loss per Connection (gallons per connection per day)	Real Loss per Connection (gallons per connection per day)	Real Loss per Mile (gallons per mile per day)	OK?
47	Ridgecrest	TX091003	2015	1,737	579	41	50	100.0	0.0	0.3	0	13	n/a	Y
48	Rocky Point Estates	TX091003	2015	441	147	34	50	100.0	0.0	0.4	0	48	n/a	Y
49	RRA Preston Shores Water Syste	TX0910037	2016	1710	683	34.2	65	99	0.0	0.4	1	37	n/a	Y
50	Sherwood Shores	TX091004	2015	1,821	779	37	50	100.0	0.0	0.3	0	24	n/a	Y
51	South Grayson WSC	TX091006	2010	3,900	1,391	15	80	100.0	0.0	0.8	1	n/a	446	Y
52	Starr WSC	TX0910046	2016	2500	888	12.9	69	96	0.0	0.5	7	n/a	224	Y
53	Texoma Estates WSC	TX091004	2015	85	63	23	60	96.0	0.0	0.5	7	n/a	764	Y
54	Two Way SUD	TX091002	2015	5,061	1,687	8	75	98.0	0.0	0.6	5	n/a	200	Y

ATTACHMENT I

Annual Financial Report

RED RIVER GROUNDWATER CONSERVATION DISTRICT

Annual Financial Report

Year Ended December 31, 2016

RED RIVER GROUNDWATER CONSERVATION DISTRICT
Annual Financial Report
Year Ended December 31, 2016

McClanahan and Holmes, LLP

CERTIFIED PUBLIC ACCOUNTANTS

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INDEPENDENT AUDITORS' REPORT

Members of the Board
Red River Groundwater Conservation District
Denison, Texas

We have audited the accompanying financial statements of the governmental activities and the major fund of the Red River Groundwater Conservation District (District), as of and for the year ended December 31, 2016, and the related notes to the financial statements, which collectively comprise the District's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant account estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and the major fund of the Red River Groundwater Conservation District as of December 31, 2016, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Members of the Board
Red River Groundwater Conservation District
Denison, Texas

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the budgetary comparison schedule be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated May 11, 2017, on our consideration of the District's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the District's internal control over financial reporting and compliance.

McClanahan and Holmes, LLP
Certified Public Accountants

Bonham, Texas
May 11, 2017

RED RIVER GROUNDWATER CONSERVATION DISTRICT
Management's Discussion and Analysis
Year Ended December 31, 2016

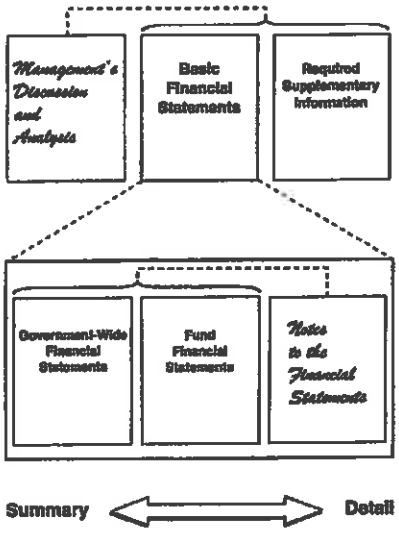
The Red River Groundwater Conservation District (District) is pleased to present its financial statements. This required supplementary information presents our discussion and analysis of the District's financial performance during the year ended December 31, 2016. Please read this section in conjunction with the basic financial statements which follow this section.

FINANCIAL HIGHLIGHTS

- The District's total net position was $492,084 at December 31, 2016.
- During the year, the District's expenses were $48,272 less than the $315,867 generated from groundwater production fees and other revenues.
- The General Fund presents a year end fund balance of $470,051 at December 31, 2016.

OVERVIEW OF THE FINANCIAL STATEMENTS

Figure A-1, Required Components of the District's Annual Financial Report



In addition to this Management's Discussion and Analysis, this report consists of government-wide financial statements, fund financial statements, and the notes to the financial statements. The first two statements are condensed and present a government-wide view of the District's finances. The government-wide statements are designed to be more corporate-like in that all activities are consolidated into a total for the District.

Basic Financial Statements

- The Statement of Net Position focuses on resources available for future operations. In simple terms, the statement presents a snapshot of the assets of the District, the liabilities it owes, and the net difference. The net difference is further separated into amounts restricted for specific purposes, if any, and unrestricted amounts. The information presented in this statement is reported on the accrual basis of accounting.

- The Statement of Activities focuses on gross and net costs of the District's programs and the extent to which such programs rely on general revenues. The statement summarizes and simplifies the users analysis to determine the extent to which programs are self-supporting and/or subsidized by general revenues.

- Fund financial statements focus separately on individual funds, including assets liabilities and fuel equity. Separate revenues and expenditures analysis are presented to each major fund.

- The notes to the financial statements provide additional disclosures required by governmental accounting standards and provide information to assist the reader in understanding the District's financial condition.

OVERVIEW OF THE FINANCIAL STATEMENTS (Continued)

Other Information

In addition to the basic financial statements and accompanying notes, this report also presents required supplementary information concerning the District's budgetary comparison schedule. Required supplementary information can be found on page 16 of this report.

FINANCIAL ANALYSIS OF THE DISTRICT AS A WHOLE

Net position may serve over time as a useful indicator of a government's financial position. For the District, the total combined net position was $492,084 at year end. A comparative condensed summary of the District's statements of net position is presented here.

Table A-1

Red River Groundwater Conservation District's Net Position

	2016	2015	Total Percentage Change 2015-2016
Assets:			
Cash and Cash Equivalents	$ 196,201	$ 179,316	9.42%
Certificates of Deposit	210,000	200,000	5.00%
Receivables and Other Assets	87,562	88,049	-0.55%
Vehicle, Net of Accumulated Depreciation	22,033	-	100.00%
Total Assets	515,796	467,365	10.36%
Liabilities:			
Current Liabilities	23,712	23,553	0.68%
Total Current Liabilities	23,712	23,553	0.68%
Net Position:			
Unrestricted	492,084	443,812	10.88%
Total Net Position	$ 492,084	$ 443,812	10.88%

At year end, 78.8% of the District's total assets were held in cash and cash equivalents and certificates of deposit, with fees receivable and prepaid expenses representing 16.9%, and fixed assets representing 4.3%.

The District's liabilities consist of accounts payable for items or services received during the year, but not paid out in cash until after year end.

Unrestricted net position represents amounts available for future spending.

CHANGES IN NET POSITION

The District's total revenues were $315,867 generated from Groundwater Production Fees assessed upon residents of the District and other revenues.

The total cost of all services was $267,595, for third party administration of the program.

A condensed summary of the District's statements of activities and changes in net position for the years ended December 31, 2016 and 2015 is presented here:

Table A-2

Changes in Red River Groundwater Conservation District's Net Position

	2016	2015	Total Percentage Change 2015-2016
General Revenues:			
Groundwater Production Fees	$ 313,987	$ 329,279	-4.64%
Interest Income	1,880	888	111.71%
Total Revenues	315,867	330,167	-4.33%
Expenses:			
Administration	267,595	213,481	25.35%
Total Expenses	267,595	213,481	25.35%
Increase (Decrease) in Net Position	$ 48,272	$ 116,686	-58.63%

FINANCIAL ANALYSIS OF THE DISTRICT'S FUNDS

The governmental funds of the District reported revenues of $315,867 during the year, with total expenditures of $289,628.

BUDGETARY HIGHLIGHTS

The District's Board of Directors adopted a final operating budget for the 2016 fiscal year, based on anticipated receipts and expenditures (unaudited), prior to year end. The budget encompasses all the activities of the District, which would normally include both revenues and expenditures.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

Capital Assets amounted to $22,033, net of accumulated depreciation of $2,003 as of December 31, 2016. This investment in capital assets includes a vehicle.

A summary of capital asset activity is shown in Note 1.E of the financial statements.

Debt

As of December 31, 2016, the District has not entered into any debt agreements. The District has no outstanding long-term debt at year end.

ECONOMIC FACTORS AND NET YEAR'S BUDGET AND RATES

The District adopted the next year's budget to provide for the developing nature of the services provided by the District, which will increase over the current year.

CONTACTING THE DISTRICT'S FINANCIAL MANAGEMENT

This financial report is designed to provide our citizens, taxpayers, investors, and creditors with a general overview of the District's finances and to demonstrate the District's accountability for the money it receives. If you have any questions about this report or need additional financial information, contact Drew Satterwhite, General Manager for the District.

RED RIVER GROUNDWATER CONSERVATION DISTRICT
Statement of Net Position
December 31, 2016

	Governmental Activities
ASSETS	
Current Assets	
Cash and Cash Equivalents	$ 196,201
Certificates of Deposit	210,000
Accounts Receivable, Net of Allowance for Uncollectibles of $1,530	85,956
Prepaid Expenses	1,606
Total Current Assets	493,763
Noncurrent Assets	
Capital Assets, Net of Accumulated Depreciation:	
Vehicle	22,033
Total Noncurrent Assets	22,033
Total Assets	515,796
LIABILITIES	
Current Liabilities	
Accounts Payable	23,712
Total Current Liabilities	23,712
Total Liabilities	23,712
NET POSITION	
Unrestricted	492,084
Total Net Position	$ 492,084

The notes to financial statements are an integral part of this statement.

RED RIVER GROUNDWATER CONSERVATION DISTRICT
Statement of Activities
Year Ended December 31, 2016

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Net (Expense) Revenue and Changes in Net Position: Governmental Activities
Primary Government				
Governmental Activities:				
Administration	$ 267,595	$ -	$ -	$ (267,595)
Total Governmental Activities	267,595	-	-	(267,595)
Total Primary Government	$ 267,595	$ -	$ -	(267,595)
General Revenues:				
Groundwater Production Fees				313,987
Interest Income				1,880
Total General Revenues				315,867
Change in Net Position				48,272
Net Position - Beginning (January 1)				443,812
Net Position - Ending (December 31)				$ 492,084

The notes to financial statements are an integral part of this statement.

RED RIVER GROUNDWATER CONSERVATION DISTRICT
Balance Sheet - Governmental Fund
December 31, 2016

	General Fund
ASSETS	
Current Assets	
Cash and Cash Equivalents	$ 196,201
Certificates of Deposit	210,000
Accounts Receivable, Net	85,956
Prepaid Expenses	1,606
Total Current Assets	493,763
Total Assets	$ 493,763
LIABILITIES	
Current Liabilities	
Accounts Payable	$ 23,712
Total Current Liabilities	23,712
Total Liabilities	23,712
FUND BALANCE	
Unassigned	470,051
Total Fund Balance	470,051
Total Liabilities and Fund Balance	$ 493,763
Amounts reported for governmental activities in the statement of net position are different because:	
Fund Balance - Total Governmental Fund (above)	$ 470,051
Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of these assets is allocated over their estimated useful lives and reported as depreciation expense. This is the amount by which capital outlays exceeded depreciation expense in the current year.	22,033
Net Position of Governmental Activities	$ 492,084

The notes to financial statements are an integral part of this statement.

RED RIVER GROUNDWATER CONSERVATION DISTRICT
Statement of Revenues, Expenditures, and Changes
In Fund Balance - Governmental Fund
Year Ended December 31, 2016

	General Fund
REVENUES	
Groundwater Usage Fees	$ 313,987
Interest Income	1,880
Total Revenues	315,867
EXPENDITURES	
Administration	240,126
Legal Fees	25,466
Capital Outlay:	
Vehicle	24,036
Total Expenditures	289,628
Excess (Deficiency) of Revenues over Expenditures	26,239
Net Change in Fund Balance	26,239
Fund Balance - Beginning (January 1)	443,812
Fund Balance - Ending (December 31)	$ 470,051
Amounts reported for governmental activities in the statement of activities are different because:	
Net Change in Fund Balance - Total Governmental Fund (above)	26,239
Capital assets used in government activities are not financial resources and therefore are not reported in the funds. The cost of the asset is $24,036 and the accumulated depreciation is $2,003.	22,033
Change in Net Position of Governmental Activities	$ 48,272

The notes to financial statements are an integral part of this statement.

I. Summary of Significant Accounting Policies

The basic financial statements of the Red River Groundwater Conservation District (District) have been prepared in conformity with accounting principles generally accepted in the United States of America (GAAP) applicable to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard setting body for establishing governmental accounting and financial reporting principles.

A. Reporting Entity

The Red River Groundwater Conservation District (District), is a political subdivision of the State of Texas, created under the authority of Article XVI, Section 59, Texas Constitution, and operating pursuant to the provisions of the Texas Water Code, Chapter 36, and Senate Bill 2497, Acts of the 81st Texas Legislature, Regular Session, 2010. The District encompasses the Red River counties of Grayson and Fannin. The Board of Directors (Board), a six member group constituting an on-going entity, is the level of government which has governance responsibilities over all activities within the jurisdiction of the District. The Board is not included in any other governmental "reporting entity" as defined in Section 2100, Codification of Governmental Accounting and Reporting Standards, since Board members are appointed, have decision making authority, the power to designate management, the responsibility to significantly influence operations, and primary accountability for fiscal matters.

As required by accounting principles generally accepted in the United States of America, the basic financial statements of the reporting entity include those of the District (primary government) and its component units. There are no component units included in these basic financial statements.

B. Basis of Presentation – Basis of Accounting

Government-Wide Statements - The statement of net position and the statement of activities include the financial activities of the overall government, except for fiduciary activities. Eliminations have been made to minimize the double-counting of internal activities. Governmental activities generally are financed through taxes, intergovernmental revenues, and other non-exchange transactions.

The statement of activities presents a comparison between direct expenses and program revenues for each function of the District's governmental activities. Direct expenses are those that are specifically associated with a program or function and therefore, are clearly identifiable to a particular function. The District does not allocate indirect expenses in the statement of activities. Program revenues include (1) fees, and other charges paid by the recipients of goods or services offered by the programs and (2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular program. Revenues that are not classified as program revenues, including taxing entities allocations and investments, are presented as general revenues.

Fund Financial Statements – The fund financial statements provide information about the District's funds, with separate statements presented for each fund category. The emphasis of fund financial statements is on major governmental funds, each displayed in a separate column. Any remaining governmental funds are aggregated and reported as non-major funds.

I. Summary of Significant Accounting Policies (Continued)

B. Basis of Presentation – Basis of Accounting (continued)

District accounts are organized on the basis of funds, each of which is considered a separate accounting entity. Governmental resources allocated to individual funds are recorded for the purpose of carrying on specific activities in accordance with laws, regulations or other appropriate requirements. The fund types and funds utilized by the District are described below:

Government fund types include the following:

The *General Fund* is used to account for financial resources used for general operating. This is a budgeted fund and any fund balances are considered resources available for current operations. All revenues and expenditures not required to be accounted for in other funds are accounted for in this fund.

C. Measurement Focus – Basis of Accounting

Government-Wide Statements – These financial statements are reported using the economic resources measurement focus. The government-wide financial statements are reported using the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded at the time liabilities are incurred, regardless of when the related cash flows take place. Non-exchange transactions, in which the District gives (or receives), value without directly receiving (or giving) equal value in exchange, including taxing entity allocations. Revenue from grants, entitlements, and donations are recognized in the fiscal year in which all eligibility requirements have been satisfied.

Fund Financial Statements – These financial statements are reported using the current financial resources measurement focus and are accounted for using the modified accrual basis of accounting. Under the modified accrual basis of accounting, revenues are recognized when susceptible to accrual; i.e., when they become both measurable and available. "Measurable" means the amount of the transaction can be determined and "available" means collectible within the current period or soon enough thereafter to be used to pay liabilities of the current period. The District considers revenues as available if they are collected within 60 days after year end. Expenditures are recorded when the related fund liability is incurred. However, debt service expenditures, as well as expenditures related to compensated absences are recorded only when payment is due.

D. Receivable and Payable Balances

The District believes that sufficient detail of receivable and payable balances is provided in the financial statements to avoid the obscuring of significant components by aggregation. Therefore, no disclosure is provided which disaggregates those balances.

E. Financial Statement Amounts

Cash and Cash Equivalents

Cash and Cash Equivalents are comprised of deposits in financial institutions, including time deposits. A cash equivalent is considered any highly liquid investment with a maturity of three months or less. Restricted assets and temporary investments are not included.

I. Summary of Significant Accounting Policies (Continued)

E. Financial Statement Amounts (continued)

Capital Assets

Capital assets, which includes a vehicle, are reported in the government-wide statement of net position. All capital assets are valued at historical cost. The cost of normal repairs and maintenance that do not add to the value of the asset or materially extend asset life are not capitalized.

Assets capitalized have an original cost of more than $5,000 and useful life in excess of one year. Depreciation has been provided over the estimated useful life using the straight-line method of depreciation. The estimated useful life of the asset is five years.

	Balance 12/31/15	Additions	Retirements	Balance 12/31/16
Governmental Activities:				
Capital Assets being Depreciated:				
Vehicle	$ -	$ 24,036	$ -	$ 24,036
	-	24,036	-	24,036
Less Accumulated Depreciation for:				
Vehicle	-	2,003	-	2,003
	-	2,003	-	2,003
Governmental Activities Capital Assets, Net	$ -	$ 22,033	$ -	$ 22,033

Fund Balance

Governmental funds utilize a fund balance presentation for equity. Fund balance is categorized as nonspendable, restricted, committed, assigned, or unassigned.

Nonspendable fund balance – represents amounts that cannot be spent because they are either not in spendable form (such as inventory or prepaids) or legally required to remain intact (such as notes receivable or principal or a permanent fund).

Restricted fund balance – represents amounts with external constraints placed on the use of these resources (such as debt covenants, grantors, other governments, etc.) or imposed by enabling legislation. Restrictions may be changed or lifted only with the consent of resource providers. The District does not have any restricted fund balances by enabling legislation.

Committed fund balance – represents amounts that can only be used for specific purposes imposed by a formal action of the District's highest level of decision-making authority, the Board. Committed resources cannot be used for any other purpose unless the Board removes or changes the specific use by taking the same formal action that imposed the constraint originally.

Assigned fund balance – represents amounts the District intends to use for specific purposes as expressed by the Board or an official delegated the authority. The Board has delegated the authority to assign fund balances to the Superintendent.

Unassigned fund balances – represents the residual classification for the general fund or deficit balances in other funds.

I. Summary of Significant Accounting Policies (Continued)

E. Financial Statement Amounts (continued)

Fund Balance (continued)

In circumstances where an expenditure is to be made for the purpose for which amounts are available in multiple fund balance classifications, the order in which resources will be expended is as follows: restricted fund balance, followed by committed fund balance, assigned fund balance, and lastly, unassigned fund balance. The District has adopted a policy that sets a minimum fund balance equal to twenty-five percent (25%) of the total general fund expenditures.

The following schedule provides information about the specific fund balance classification by fund:

	General
Unassigned	$ 470,051
Total	$ 470,051

II. Stewardship, Compliance, and Accountability

By its nature as a local government unit, the District is subject to various federal, state, and local laws and contractual regulations.

Object Category	Expenditures Exceeding Appropriations
Legal Fees	$ 466
Capital Outlay	4,736
Total Expenditures Exceeding Appropriations	$ 5,202

III. Deposits, Securities, and Investments

The District's maintains deposits in First United, Sherman, Texas that at times exceed the insured amount of $250,000 provided by the U.S. Federal Deposit Insurance Corporation (FDIC). The District was not exposed to custodial credit risk as its deposits were fully insured with FDIC insurance at year-end.

The District maintains certificates of deposit at two different banks as of December 31, 2016. The District was not exposed to custodial credit risk as its deposits were fully insured with FDIC insurance at year-end.

GASB Statement No. 40 requires a determination as to whether the District was exposed to the following specific investment risks at year end and if so, the reporting of certain related disclosures:

Custodial Credit Risk

Deposits are exposed to custodial credit risk if they are not covered by depository insurance and the deposits are uncollateralized, collateralized with securities held by the pledging financial institution, or collateralized with securities held by the pledging financial institution's trust department or agent but not in the District's name.

III. Deposits, Securities, and Investments (Continued)

Investment securities are exposed to custodial risk if the securities are uninsured, are not registered in the name of the government, and are held by either the counterparty or the counterparty's trust department or agent but not in the District's name.

IV. Risk Management

The District is exposed to various risks of loss related to torts: theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters. During the year ended December 31, 2016, the District purchased commercial insurance to cover these liabilities. There were no significant reductions in coverage in the last year, and there were no settlements exceeding insurance coverage in the past year.

V. Concentrations

Two customers individually comprised approximately 41% of gross accounts receivable at December 31, 2016. One of these customer's individually comprised approximately 31% of revenue for the year ended December 31, 2016. One vendor comprised approximately 57% of expenses for the year ended December 31, 2016.

RED RIVER GROUNDWATER CONSERVATION DISTRICT
General Fund
Budgetary Comparison Schedule
Year Ended December 31, 2016

	Budgeted Amounts			Variance with
	Original	Final	Actual	Final Budget
REVENUES				
Groundwater Usage Fees	$ 325,000	$ 325,000	$ 313,987	$ (11,013)
Interest Income	-	-	1,880	1,880
Total Revenues	325,000	325,000	315,867	(9,133)
EXPENDITURES				
Administration	279,600	279,600	240,126	39,474
Legal Fees	25,000	25,000	25,466	(466)
Capital Outlay:				
Vehicle	19,300	19,300	24,036	(4,736)
Total Expenditures	323,900	323,900	289,628	34,272
Net Change in Fund Balance	1,100	1,100	26,239	25,139
Fund Balance - Beginning (January 1)	443,812	443,812	443,812	-
Fund Balance - Ending (December 31)	$ 444,912	$ 444,912	$ 470,051	$ 25,139

McClanahan and Holmes, LLP
CERTIFIED PUBLIC ACCOUNTANTS

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Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

Members of the Board
Red River Groundwater Conservation District
Denison, Texas

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities and the major fund of the Red River Groundwater Conservation District (District), as of and for the year ended December 31, 2016, and the related notes to the financial statements, which collectively comprise the District's basic financial statements, and have issued our report thereon dated May 11, 2017.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the District's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the District's internal control. Accordingly, we do not express an opinion on the effectiveness of the District's internal control.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that have not been identified. However, as described below, we identified certain deficiencies in internal control that we consider to be material weaknesses and significant deficiencies.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis.

A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance. We consider the following deficiencies to be material weaknesses and significant deficiencies in internal control over financial reporting.

Members of the Board
Red River Groundwater Conservation District
Denison, Texas

Financial Accounting and Reporting:

The District does not prepare the financial statements nor control the period-end financial reporting process, including controls over the selection and application of accounting principles that are in conformity with generally accepted accounting principles; controls over procedures used to analyze transactions comprising general ledger activity; controls over initiating, authorizing, recording, and processing journal entries into the general ledger; and controls over recording recurring and nonrecurring adjustments to the financial statements.

Segregation of Duties:

A critical element in any internal control structure is the characteristic known as segregation of duties. Assigning different personnel the responsibility of authorizing transactions, recording transactions, and maintaining custody of assets achieves this internal control structure attribute. Due to the District's small number of personnel, there is limited segregation of duties in substantially all areas of the accounting system. To the extent possible, every effort should be made to utilize a "best practices" approach when considering controls over cash transactions and preparation of accounting records. We encourage the board to closely monitor its financial activities which may help offset the weaknesses associated with limited segregation of duties.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the District's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the District's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the District's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

McClanahan and Holmes, LLP
Certified Public Accountants

Bonham, Texas
May 11, 2017