Panola County Groundwater Conservation District

District Management Plan

ADOPTED – JANUARY 20, 2009

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I. DISTRICT MISSION

The Panola County Groundwater Conservation District ("District") seeks to preserve and protect the groundwater resources of Panola County. The District will accomplish this mission by working to minimize the drawdown of the groundwater levels, prevent the waste of groundwater and reduce the degradation of the quality of the groundwater located in the Panola County area. The District will also use the authority granted by state law to protect and maintain the economic vitality of the communities within Panola County. The District believes the economy, environment, and quality of life in Panola County will be benefitted by the work of the District to accomplish its mission.

II. PURPOSE OF THE MANAGEMENT PLAN

The purpose of the Management Plan is to provide a planning tool for the District as it moves forward with its efforts to manage and conserve the groundwater resources of Panola County. The Management Plan contains the hydrogeological and technical information provided by the Texas Water Development Board ("TWDB") regarding the groundwater resources of Panola County. As the District obtains more site-specific groundwater information, the District will update and amend the Management Plan.

The development of the Management Plan for the District will enable the District to comply with the requirements of state law. The Texas Legislature created a statewide water planning process with the passage of Senate Bill 1 ("SB 1") in 1997 and Senate Bill 2 ("SB 2") in 2001. The development of management plans by each groundwater conservation district ("GCD") in Texas is an integral part of the statewide planning process. The District's Management Plan satisfies all requirements established for GCDs by SB 1, SB 2, the statutory requirements Chapter 36 of the Texas Water Code, and the administrative requirements of the rules of the TWDB.

III. DISTRICT INFORMATION

A. Creation

The District was created by the 80th Texas Legislature in 2007 with the enactment of House Bill 1498. (Appendix A) The creation of the District was confirmed by the citizens of Panola County at an election held on November 6, 2007. The District was provided with the rights and responsibilities specified in its enabling act, Chapter 36 of the Texas Water Code, the TWDB Rules, this Management Plan, and the District Rules.

B. Directors

The Board of Directors consists of nine members who are elected by the voters of Panola County. The District utilizes the same four precinct boundaries which are used for the Panola County Commissioners when filling eight of the District's director positions. One director position for the District is elected at-large from Panola County. Elections are held in May of each even-numbered years. The directors for the District each are elected to a four-year term and a director may serve consecutive terms.

C. Authority

The District has the authority and duties given to GCDs by Texas Water Code Chapter 36, 31 Texas Administrative Code (TAC) Chapter 356, and the District's enabling act. The District exercises the authority it has been granted to preserve and protect the groundwater resources of Panola County through the adoption and implementation of rules for the District.

D. Location and Extent

The boundaries of the District are the same as Panola County. This area encompasses approximately 801 square miles (approximately 512,640 acres). The District is bounded by Harrison County to the north, Gregg and Rusk Counties to the west, Shelby County to the south, and the State of Louisiana to the east.

E. Groundwater Resources of Panola County

Panola County is located over the outcrop of the Carrizo-Wilcox aquifer. The TWDB has identified the Carrizo-Wilcox aquifer as the only major aquifer in the Panola County area. The TWDB has not recognized any minor aquifers in Panola County. The TWDB defines major aquifers as aquifers that are capable of producing large yields to wells or that produce groundwater over a large area.

A TWDB diagram of the Carrizo-Wilcox aquifer can be found at Figure 1. The TWDB describes the groundwater resources of the Carrizo-Wilcox aquifer as follows:

> "The Wilcox Group and the overlying Carrizo Formation of the Claiborne Group form a hydrologically connected system known as the Carrizo-Wilcox aquifer. This aquifer extends from the Rio Grande in South Texas northeastward into Arkansas and Louisiana, providing water to all or parts of 60 counties. The Carrizo Sand and Wilcox Group crop out along a narrow band that parallels the Gulf Coast and

dips beneath the land surface toward the coast, except in the East Texas structural basin adjacent to the Sabine Uplift, where the formations form a trough.

Municipal and irrigation pumpage account for about 35 percent and 51 percent, respectively, of total pumpage. The largest metropolitan areas dependent on ground water from the Carrizo-Wilcox aquifer are Bryan-College Station, Lufkin-Nacogdoches, and Tyler. Irrigation is the predominant use in the Winter Garden region of South Texas.

The Carrizo-Wilcox aquifer is predominantly composed of sand locally interbedded with gravel, silt, clay, and lignite deposited during the Tertiary Period. South of the Trinity River and north of the Colorado River, the Wilcox Group is divided into three distinct formations: the Hooper, Simsboro, and Calvert Bluff. Of the three, the Simsboro typically contains the most massive water-bearing sands. This division cannot be made south of the Colorado River or north of the Trinity River due to the absence of the Simsboro as a distinct unit. Aquifer thickness in the downdip artesian portion ranges from less than 200 feet to more than 3,000 feet.

Well yields are commonly 500 gal/min, and some may reach 3,000 gal/min downdip where the aquifer is under artesian conditions. Some of the greatest yields (more than 1,000 gal/min) are produced from the Carrizo Sand in the southern, or Winter Garden, area of the aquifer. Yields of greater than 500 gal/min are also obtained from the Carrizo and Simsboro formations in the central region.

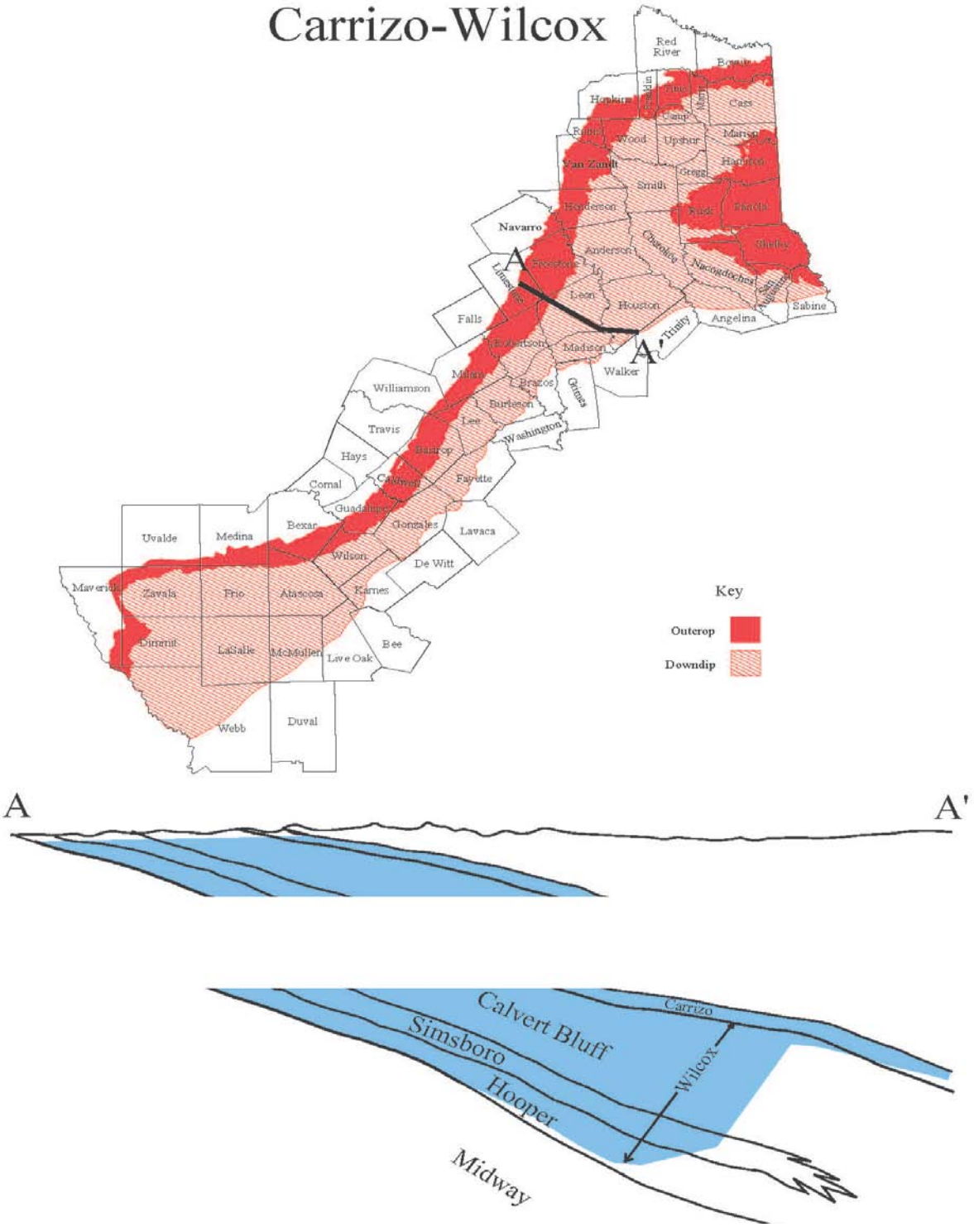
Regionally, water from the Carrizo-Wilcox aquifer is fresh to slightly saline. In the outcrop, the water is hard, yet usually low in dissolved solids. Downdip, the water is softer, has a higher temperature, and contains more dissolved solids. Hydrogen sulfide and methane may occur locally. Excessively corrosive water with a high iron content is common throughout much of the northeastern part of the aquifer. Localized contamination of the aquifer in the Winter Garden area is attributed to direct infiltration of oil field brines on the surface and to downward leakage of saline water to the overlying Bigford Formation.

Significant water-level declines have developed in the semiarid Winter Garden portion of the Carrizo aquifer, as the region is heavily dependent on ground water for irrigation. Since 1920, water levels have declined as much as 100 feet in much of the area and more than 250 feet in the Crystal City area of Zavala County. Significant water-

level declines resulting from extensive municipal and industrial pumpage also have occurred in Northeast Texas. Tyler and the Lufkin-Nacogdoches area have experienced declines in excess of 400 feet, and in a few wells, as much as 500 feet since the 1940s. In this area, conversion to surface-water use is slowing the rate of water-level decline. The northeast outcrop area has been dewatered in the vicinity of lignite surface-mining operations, and the Simsboro Sand Formation of the Wilcox Group has been affected by water-level declines in parts of Robertson and Milam counties."1

1 Aquifers of Texas, Texas Water Development Board, Report 345, by Ashworth and Hopkins, November 1995.

FIGURE 1


Carrizo-Wilcox
Red River
Bowie
Franklin
Titus
Morris
Cass
Hopkins
Camp
Rains
Wood
Upshur
Marion
Van Zandt
Gregg
Harrison
Smith
Henderson
Rusk
Panola
Navarro
Anderson
Cherokee
Shelby
A
Freestone
Limestone
Leon
Houston
Nacogdoches
San Augustine
Sabine
Falls
Robertson
Madison
A'
Trinity
Angelina
Walker
Milam
Brazos
Grimes
Williamson
Burleson
Lee
Washington
Travis
Bastrop
Hays
Caldwell
Fayette
Comal
Guadalupe
Gonzales
Lavaca
Bexar
Uvalde
Medina
Wilson
De Witt
Maverick
Zavala
Frio
Atascosa
Karnes
Dimmit
LaSalle
McMullen
Live Oak
Bee
Webb
Duval
Key
Outcrop
Downdip
A
A'
Calvert Bluff
Carrizo
Simsboro
Wilcox
Hooper
Midway

IV. CRITERIA FOR PLAN APPROVAL

A. Planning Horizon

The Management Plan is adopted to be effective for a ten (10) year planning period. The planning period will begin on the date of approval by the TWDB. In accordance with Section 36.1072(e) and TWDB Rules (31 TAC §356.3), the District will review and readopt the Management Plan, with or without amendments, in five years and resubmit the plan for TWDB approval. The Management Plan will be effective until the plan is replaced by a revised plan which has been approved by the TWDB.

B. Board Resolution

A certified copy of the Panola County Groundwater Conservation District Board of Directors resolution adopting the plan is located in Appendix B - District Resolution.

C. Plan Adoption

Public notices which demonstrate the Management Plan was adopted after the required public hearings and meeting were conducted are found in Appendix C – Notice of Hearings and Meetings.

D. Coordination with Surface Water Management Entities

Correspondence with the Sabine River Authority and the Panola County Fresh Water Supply District No. 1 which demonstrate the District provided the pertinent entities with a copy of the Management Plan is found in Appendix D – Correspondence with Surface Water Management Entities.

V. ESTIMATES OF TECHNICAL INFORMATION REQUIRED BY TWC § 36.1071 / 31 TAC 356.5

A. Managed available groundwater in the district based on the desired future condition established under TWC 36.108— 31 TAC 356.5 (a)(5)(A) / TWC § 36.10701(e)(3)(A)

Managed available groundwater is defined in Section 36.001 of the Texas Water Code as “the amount of water that may be permitted by a district for beneficial use in accordance with the desired future condition of the aquifer.” The desired future condition of the aquifer may only be determined through joint planning with other GCDs in the same groundwater management area (GMA) as required by the 79th Legislature with the enactment of HB 1763. The District is part of

GMA 11. The GCDs of GMA 11 have not completed the joint planning process to determine the desired future condition of the aquifers in the GMA. Therefore, because GMA 11 has not completed the joint planning process, the District is unable to present a final value for the managed available groundwater for the aquifers of Panola County as of the date of adoption of this plan.

B. Amount of groundwater being used within the district on an annual basis—31TAC356.5 (a)(5)(B) / TWC §36.1071(e)(3)(B))

To estimate the annual amount of groundwater being used in the District, the District has looked to the TWDB Annual Water Use Survey Data. Because responses to the TWDB survey have been voluntary for years, the TWDB Water Use Survey Data is subject to variations in the completeness or accuracy of the data. The TWDB estimate of the amount of groundwater being used in the District on an annual basis is 3,992 acre-feet per year. The estimate is from the TWDB Annual Water Use Survey for the Year 2004 which is the most recent data available. TWDB data on estimated groundwater use is available from 1980 to 2004, excepting 1981 to 1983 when no data was collected. Details of the estimate of the total amount of groundwater use are presented in Appendix F. As of the date of the adoption of this plan, the District has been in operation just over one year.

C. Annual amount of recharge from precipitation to the groundwater resources within the district—31 TAC 356.5 (a)(5)(C) / TWC §36.1071(e)(3)(C))

The estimate of the annual amount of recharge from precipitation to the aquifers within the District is based on Groundwater Availability Model ("GAM") 08-50 conducted by the TWDB. GAM 08-50 is the most recent GAM available to assess the amount of available groundwater in the aquifers within Panola County.

Aquifer or confining Unit	Results (in acre-feet)
Sparta	0*
Weches	0*
Queen City	111*
Reklaw	112*
Carrizo	1,118
Wilcox (upper)	6,324
Wilcox (middle)	30,563
Wilcox (lower)	0

NOTE** - ***The Sparta and Queen City aquifers and the Weches and Reklaw confining units are not substantively present within the Panola County GCD. The numbers reported for these groundwater availability model layers are, therefore, very small or zero.

D. For each aquifer, annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers— 31 TAC 356.5 (a)(5)(D) / TWC §36.1071(e)(3)(D)

The estimate of the annual amount of water discharged to surface water systems by the groundwater resources of the District based on GAM 08-50 are as follows:

Aquifer or confining Unit	Results (in acre-feet)
Sparta	0*
Weches	0*
Queen City	0*
Reklaw	0*
Carrizo	0
Wilcox (upper)	1,701
Wilcox (middle)	28,187
Wilcox (lower)	0

NOTE** - ***The Sparta and Queen City aquifers and the Weches and Reklaw confining units are not substantively present within the Panola County GCD. The numbers reported for these groundwater availability model layers are, therefore, very small or zero.

E. Annual volume of flow into and out of the district within each aquifer and between aquifers in the district, if a groundwater availability model is available — 31 TAC 356.5 (a)(5)(E) / TWC §36.1071(e)(3)(E)

E.(1.) Estimated annual volume of flow into the district within each aquifer in the district

The estimates of the amount of water flowing into the District within each aquifer in the District based on GAM 08-50 are as follows:

Aquifer or confining Unit	Results (in acre-feet)
Sparta	0*
Weches	0*
Queen City	3*
Reklaw	5*
Carrizo	200
Wilcox (upper)	992
Wilcox (middle)	4,275
Wilcox (lower)	188

NOTE** - ***The Sparta and Queen City aquifers and the Weches and Reklaw confining units are not substantively present within the Panola County GCD. The numbers reported for these groundwater availability model layers are, therefore, very small or zero.

E.(2.) Estimated annual volume of flow out of the district within each aquifer in the district

The estimates of the amount of water flowing out of the District within each aquifer in the District based on GAM 08-50 are as follows:

Aquifer or confining Unit	Results (in acre-feet)
Sparta	0*
Weches	0*
Queen City	0*
Reklaw	0*
Carrizo	0
Wilcox (upper)	608
Wilcox (middle)	2,390
Wilcox (lower)	125

*** NOTE - The Sparta and Queen City aquifers and the Weches and Reklaw confining units are not substantively present within the Panola County GCD. The numbers reported for these groundwater availability model layers are, therefore, very small or zero.**

E.(3.) Estimated net annual volume of flow between each aquifer in the district

The estimates of the net annual volume of flow between each aquifer in the District based on GAM 08-50 are as follows:

Aquifer or confining Unit	Results (in acre-feet)
Sparta into Weches	0*
Weches into Queen City	0*
Queen City into Reklaw	6*
Reklaw into Carrizo	16*
Carrizo into Wilcox (upper)	174
Wilcox (middle) into Wilcox (upper)	1,235
Wilcox (lower) into Wilcox (middle)	358

**** NOTE - The Sparta and Queen City aquifers and the Weches and Reklaw confining units are not substantively present within the Panola County GCD. The numbers reported for these groundwater availability model layers are, therefore, very small or zero.***

F. Projected surface water supply in the district, according to the most recently adopted state water plan — 31 TAC 356.5 (a)(5)(F) /TWC §36.1071(e)(3)(F)

The most recently adopted state water plan is the 2007 State Water Plan. This Plan indicates a projected surface water supply for Panola County of 12,142 acre-feet/year for year 2010.

Panola County

RWPG	Water User Group	County	River Basin	Source Name	2000	2010	2020	2030	2040	2050	2060
I	Carthage	Panola	Sabine	Murvaul Lake/Reservoir	10,836	3,711	3,685	3,661	3,633	3,611	3,569
I	County-Other	Panola	Sabine	Murvaul Lake/Reservoir	1,487	2,420	2,372	2,335	2,304	2,274	2,223
I	Manufacturing	Panola	Sabine	Sabine River Run-of-River Manufacturing	644	129	129	129	129	129	129
I	Manufacturing	Panola	Sabine	Sabine River Run-of-River Manufacturing	286	114	114	114	114	114	114
I	Manufacturing	Panola	Sabine	Murvaul Lake/Reservoir	1,120	1,656	1,719	1,767	1,814	1,851	1,928
I	Mining	Panola	Sabine	Murvaul Lake/Reservoir	2,130	2,254	2,563	2,752	2,943	3,137	3,322
I	Livestock	Panola	Cypress	Livestock Local Supply	2	30	30	30	30	30	30
I	Livestock	Panola	Sabine	Livestock Local Supply	1,688	1,828	1,828	1,828	1,828	1,828	1,828
Total Projected Surface Water Supplies (acre-feet per year) =					**18,193**	**12,142**	**12,440**	**12,616**	**12,795**	**12,974**	**13,143**

Source: Volume 3, 2007 State Water Planning Database

(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

5/2/2008

G. Projected total demand for water in the district according to the most recently adopted state water plan — 31 TAC 356.5 (a)(5)(G) / TWC §36.1071(e)(3)(G)

The most recently adopted state water plan is the 2007 State Water Plan. This Plan indicates a projected total water demand for Panola County of 12,437 acre-feet/year for year 2010.

2007 State Water Plan Projected Water Demands
Panola County

RWPG	Water User Group	County	River Basin	2010	2020	2030	2040	2050	2060
I	Beckville	Panola	Sabine	133	133	132	131	131	132
I	Carthage	Panola	Sabine	2,274	2,297	2,311	2,317	2,326	2,343
I	Tatum	Panola	Sabine	29	28	28	28	27	28
I	County-Other	Panola	Cypress	5	5	5	5	5	5
I	County-Other	Panola	Sabine	1,693	1,676	1,651	1,620	1,602	1,614
I	Manufacturing	Panola	Sabine	1,357	1,437	1,500	1,561	1,614	1,720
I	Mining	Panola	Sabine	3,756	4,271	4,587	4,905	5,228	5,536
I	Livestock	Panola	Cypress	31	31	31	31	31	31
I	Livestock	Panola	Sabine	3,065	3,065	3,065	3,065	3,065	3,065
I	Gill WSC	Panola	Sabine	94	96	97	99	100	100
Total Projected Water Demands (acre-feet per year) =				**12,437**	**13,039**	**13,407**	**13,762**	**14,129**	**14,574**

Source: Volume 3, 2007 State Water Planning Database 5/2/2008

VI. CONSIDER THE WATER SUPPLY NEEDS AND WATER MANAGEMENT STRATEGIES INCLUDED IN THE ADOPTED STATE WATER PLAN — 31 TAC 356.5 (a)(7) / TWC §36.1071(e)(4)

2007 State Water Plan Projected Water Needs
Panola County

Positive values represent a water surplus;
negative values represent a water need.

RWPG	WUG	County	River Basin	2010	2020	2030	2040	2050	2060
I	Beckville	Panola	Sabine	702	702	703	704	704	703
I	Carthage	Panola	Sabine	1,859	1,807	1,767	1,729	1,696	1,632
I	Tatum	Panola	Sabine	65	66	66	66	67	66
I	County-Other	Panola	Cypress	0	0	0	0	0	0
I	County-Other	Panola	Sabine	1,005	976	968	972	965	904
I	Manufacturing	Panola	Sabine	567	550	535	521	505	476
I	Mining	Panola	Sabine	932	726	599	472	343	220
I	Livestock	Panola	Cypress	0	0	0	0	0	0
I	Livestock	Panola	Sabine	282	282	282	282	282	282
I	Gill WSC	Panola	Sabine	19	17	16	14	13	13
Total Projected Water Needs (acre-feet per year) =				**5,431**	**5,126**	**4,936**	**4,760**	**4,575**	**4,296**

Source:Volume 3, 2007 State Water Planning Database 5/2/2008

(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

Projected Water Management Strategies
Panola County

RWPG	Water User Group	WUG County	River Basin	Water Management Strategy*	Source Name	Source County	2010	2020	2030	2040	2050	2060
I	N/A	Panola	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Projected Water Management Strategies (acre-feet per year) =							**0**	**0**	**0**	**0**	**0**	**0**

TWDB: 05/2/2008

Source: Volume 3, 2007 State Water Planning Database
(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

* Since there are no projected water needs for Panola County through 2060, no Water Management Strategies have been developed to meet these nonexistent needs.

VII. DETAILS ON THE DISTRICT MANAGEMENT OF GROUNDWATER

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

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

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

The District plans to use the regulatory tools granted to GCDs by Chapter 36 to preserve and protect the existing and historic users of groundwater within the District. The Texas Legislature empowered the District to protect existing users of groundwater, which are those individuals or entities currently invested in and using groundwater or the groundwater resources within the District for a beneficial purpose, and preserve historic use by historic users, which are those individuals or entities who used groundwater beneficially in the past. The District strives to protect and preserve such use to the extent practicable under the goals and objectives of this Management Plan.

One of the tools the District can use to protect existing and historic use of groundwater is to create a permitting process through the District's rules. Pursuant to legislative authority, such as Section 36.113(e) of the Texas Water Code, the District will protect existing use by imposing more restrictive permit conditions on new permit applications and increased use by historic users. In protecting existing users, the District will establish limitations that apply to all subsequent new permit applications and increased use by historic users, regardless of type or location of use, which bear a reasonable relationship to this Management Plan, and are reasonably necessary to protect existing use. In accordance with Section 36.116(b) of the Texas Water Code, the District will also preserve historic use when developing and implementing rules limiting groundwater production to the maximum extent practicable consistent with this Management Plan.

In order to better manage the groundwater resources of Panola County, the District may establish management zones for and adopt different rules for each subdivision of an aquifer or geologic strata located in whole or in part within the boundaries of the District or each geographic area overlying a subdivision of an aquifer located in whole or in part within the boundaries of the District. The District may adopt rules to regulate groundwater withdrawals by means of spacing and/or production limits. The relevant factors to be considered in making a determination to grant or deny a permit or limit groundwater withdrawals shall include those set forth in the District's enabling act, Chapter 36 of the Texas Water Code, and the rules of the District.

VIII. ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE FOR PLAN IMPLEMENTATION — 31 TAC 356.5 (a)(4); 31 TAC 356.6 (a)(3) / TWC §36.1071(e)(2)

The District will use the Management Plan to guide the District in its efforts to preserve and protect the groundwater resources of Panola County. The District will ensure that all of its rules development, regulatory activities, planning effects and daily operations are consistent with the Management Plan.

The rules for the District will be developed in coordination with the management goals and technical information provided in the Management Plan. The rules shall be consistent with the provision of the Management Plan and Chapter 36 of the Texas Water Code. The enforcement of the rules will be driven by the hydrogeological and technical information available to the District, including the information provided in the Management Plan.

The enabling act for the District requires the District to work and plan with other GCDs in its GMA – GMA 11. The District will use the Management Plan as part of its cooperation efforts with the neighboring GCDs.

IX. METHODOLOGY FOR TRACKING PROGRESS TO ACHIEVE DISTRICT'S MANAGEMENT GOALS — 31 TAC §356.5 (a)(6)

In order for the District to track its progress in achieving its management goals and objectives, the District will submit an annual report ("Annual Report") for review by its Board of Directors. The Annual Report will be submitted to the Board of Directors no later than 120 days following the end of the District's fiscal year, and will address the District's overall performance regarding each of its management goals and objectives for the previous fiscal year. Completion of the Annual Report will begin following the end of fiscal year 2009. The District will maintain a copy of the Annual Report for public review at the District office after formal adoption by the Board of Directors.

X. DISTRICT GOALS, MANAGEMENT OBJECTIVES AND PERFORMANCE STANDARDS — 31 TAC §356.5.

The District's management goals, objectives and performance standards are addressed as follows:

A. Providing the Most Efficient Use of Groundwater - 31 TAC §356.5 (a)(1)(A); TWC §36.1071(a)(1).

1. Objective: Beginning in 2008, the District will require the registration of all wells within the District's boundaries each year.

   Performance Standard: The number of new and existing wells registered with the District will be provided in the Annual Report for each fiscal year.

2. Objective: The District will require permits for all non-exempt groundwater use within District boundaries pursuant to the District Rules each year.

   Performance Standard: The District will accept and process applications for permits for all non-exempt groundwater use pursuant to the permitting process described in the District Rules each year. The Annual Report for each fiscal year will contain a summary of the number of applications for the permitted use of groundwater and the number and type of permits issued.

B. Controlling and Preventing Waste of Groundwater - 31TAC §356.5 (a)(1)(B); TWC §36.1071(a)(2).

1. Objective: The District will provide information on an annual basis to the public on the elimination, reduction, and prevention of the waste of

groundwater and information focused on water quality protection each year. The District will use one of the following methods to provide information to the public at least once during each fiscal year:

a. distribute literature packets or brochures within Panola County and the surrounding areas;
b. provide public presentations on groundwater and water issues, including waste prevention;
c. sponsor an educational program/course;
d. provide information on the District's web site;
e. submit newspaper articles to local paper for publication;
f. present displays at local public events; or
g. become involved in the distribution of information, such as brochures, in schools in Panola County.

Performance Standard: The District's Annual Report will include a summary of the District's efforts during the fiscal year to provide educational information to the public on the elimination, reduction and prevention of the waste of groundwater.

2. Objective: The District will make an annual evaluation of its Rules to determine whether any amendments are necessary to facilitate prevention of waste of the groundwater within District boundaries.

Performance Standard: The District's Annual Report will include a summary of the evaluation of the District Rules and will provide a recommendation as to whether any amendments to the Rules are needed to facilitate prevention of waste.

C. Addressing Conjunctive Surface Water Management Issues - 31TAC §356.5 (a)(1)(D); TWC §36.1071(a)(4).

1. Objective: The District will participate in the regional planning process by sending a representative to attend at least one meeting of the East Texas Regional Water Planning Group (Region I) each fiscal year.

Performance Standard: The attendance at any Region I meeting by a representative of the District will be included in the District's Annual Report and will indicate the dates of attendance.

D. Addressing Natural Resource Issues which Impact the Use and Availability of Groundwater, and which are Impacted by the Use of Groundwater - 31TAC §356.5 (a)(1)(E); TWC §36.1071(a)(5)

1. Objective: The District will monitor water-levels within District boundaries on an annual basis by measuring the water level of at least 5 wells.

   Performance Standard: The District's Annual Report will include a description of the number of wells measured and the monitoring results of the measured well for each year.

E. Addressing Drought Conditions - 31TAC §356.5 (a)(1)(F); TWC §36.1071(a)(6).

1. Objective: The District will download at least one updated Palmer Drought Severity Index ("PDSI") map each month and will check for the regular updates to the Drought Preparedness Council Situation Report ("Situation Report") posted on the following website: http://www.txdps.state.tx.us/dem/sitrepindex.htm.

   Performance Standard: The District will include the 12 monthly downloaded PDSI maps and Situation Reports in the Annual Report for each fiscal year.

F. Addressing Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, or Brush Control, Where Appropriate and Cost Effective - 31TAC §356.5 (a)(1)(G); TWC §36.1071(a)(7).

1. Objective: The District will promote conservation at least once during each fiscal year by one of the following methods:

   a. distribute literature packets or brochures;
   b. conduct public presentations;
   c. sponsor an educational program/curriculum;
   d. provide information on the District's web site;
   e. submit newspaper articles to local newspaper for publication;
   f. present displays at local public events;
   g. annually conduct a local contest on water conservation; or
   h. conduct classroom presentations on conservation.

   Performance Standard: The District's Annual Report will provide a summary of the District efforts and a copy of any information provided by the District to the public during the previous fiscal year to promote conservation.

2. Objective: The District will provide information relating to recharge enhancement on the District web site at least one time each fiscal year.

Performance Standard: Each year, the District's Annual Report will include a copy of the information that has been provided on the District web site relating to recharge enhancement.

3. Objective: The District will advocate rainwater harvesting each year by providing updated information about rainwater harvesting on the District web site at least once each fiscal year.

Performance Standard: The Annual Report for the District will include a copy of the information on rainwater harvesting which has been provided on the District web site within the previous fiscal year.

XI. MANAGEMENT GOALS DETERMINED NOT APPLICABLE TO THE DISTRICT

A. Controlling and Preventing Subsidence - 31TAC §356.5 (a)(1)(C); TWC §36.1071(a)(3).

This management goal is not applicable to the District because the District is unaware of any issues of subsidence which exist within the boundaries of the District.

B. Addressing in a Quantitative Manner the Desired Future Conditions of the Groundwater Resources - 31TAC §356.5(a)(1)(H); TWC §36.1071(a)(8).

This management goal is not currently applicable to the District because the groundwater management area in which the District is located, GMA 11, is in the process of developing the desired future conditions for the groundwater resources of GMA 11. The District will work with the other GCDs in GMA 11 to define the desired future conditions of the aquifers within GMA 11, pursuant to Texas Water Code §36.108. The District will review and evaluate the GAM simulation results from the Carrizo-Wilcox aquifer GAM and other available hydrogeologic information as a participant in the GMA 11 process. The District understands that GMA 11 must develop the desired future conditions of the aquifers within the GMA on or before the statutory deadline of September 1, 2010.

C. Addressing Precipitation Enhancement – 31 TAC §·356.5(a)(1)(G); TWC §36.1071(a)(7)

Precipitation enhancement is not an appropriate or cost effective program for the District since there is not an operational precipitation enhancement program in nearby counties or groundwater conservation districts that the District could

participate in and share expenses.

D. Addressing Brush Control – 31 TAC §·356.5(a)(1)(G); TWC §36.1071(a)(7)

Brush control is not an appropriate program for the District due to the geographic location, terrain, and hydrogeologic features of the territory within the District.

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2. Texas Almanac 2002-2003, The Dallas Morning News

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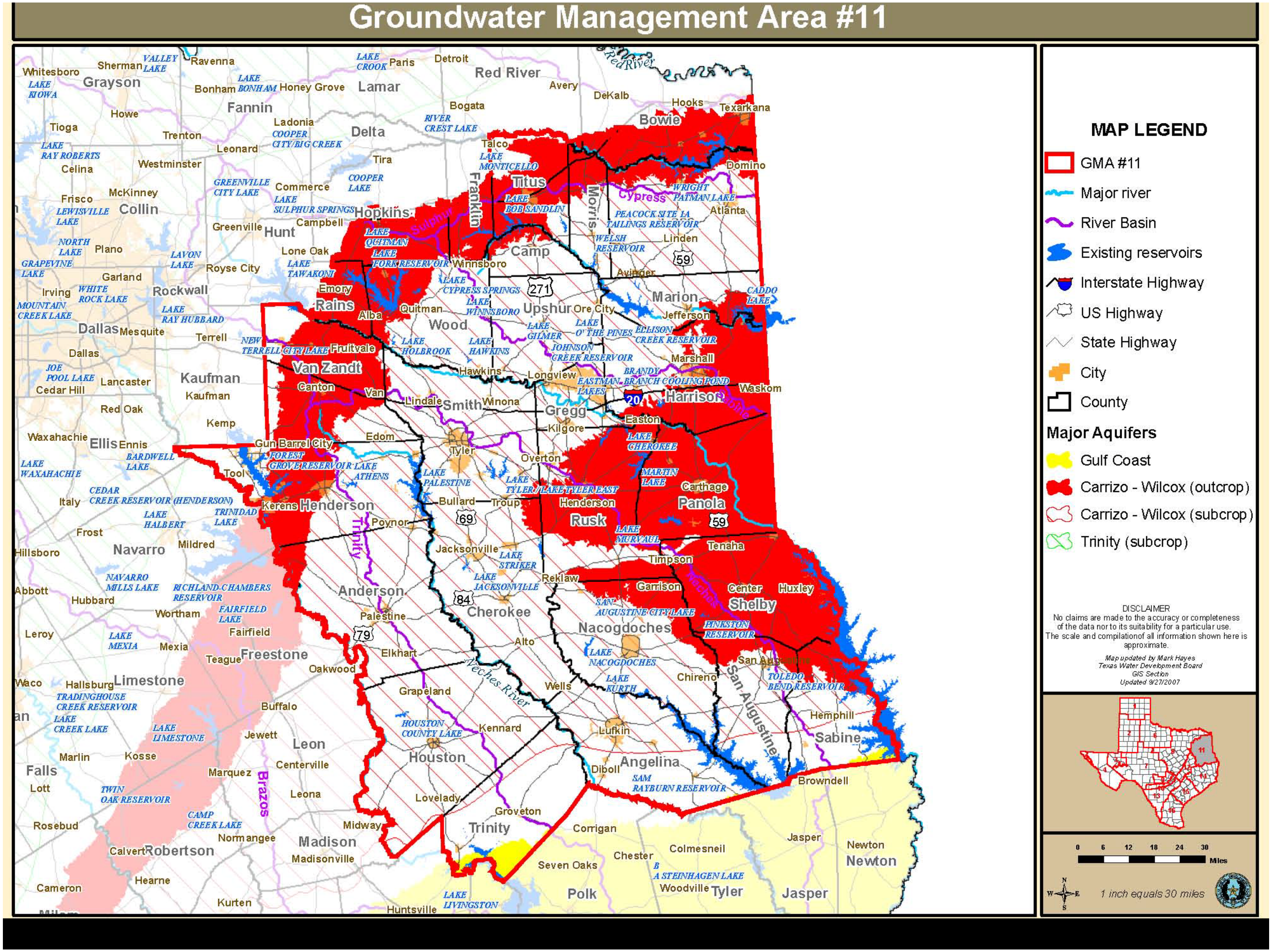
5. Fryar, D., Senger, R., Deeds, N., Pickens, J., Jones, T., Whallon, A.J., Dean, K.E., 2003, Groundwater availability model for the northern Carrizo-Wilcox aquifer; Contract report to the Texas Water Development Board, 529 p.

6. Chiang, W., and Kinzelbach, W., 2001, Groundwater Modeling with PMWIN, 346 p.

7. Kelley, V.A., Deeds, N.E., Fryar, D.G., and Nicot, J.P., 2004, Groundwater availability models for the Queen City and Sparta aquifers; Contract report to the Texas Water Development Board, 867 p.


Groundwater Management Area #11
MAP LEGEND
GMA #11
Major river
River Basin
Existing reservoirs
Interstate Highway
US Highway
State Highway
City
County
Major Aquifers
Gulf Coast
Carrizo - Wilcox (outcrop)
Carrizo - Wilcox (subcrop)
Trinity (subcrop)
DISCLAIMER
No claims are made to the accuracy or completeness of the data nor to its suitability for a particular use. The scale and compilationof all information shown here is approximate.
Map updated by Mark Hayes
Texas Water Development Board
GIS Section
Updated 9/27/2007
0 6 12 18 24 30 Miles
1 inch equals 30 miles

APPENDIX LIST

A - Enabling Act for Panola County Groundwater Conservation District

B - Resolution Adopting Management Plan

C - Notices of Public Hearings and Meetings of Panola County GCD

D - Entities to Notify and Evidence of Coordination with Surface Water Management Entities

E - Groundwater Management Areas in Texas

F - Historical Water Use Summary By Groundwater and Surface Water

APPENDIX A

ENABLING ACT FOR PANOLA COUNTY GCD

H.B. No. 1498

AN ACT

relating to the creation of the Panola County Groundwater Conservation District; providing authority to impose a tax and issue bonds.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. Subtitle H, Title 6, Special District Local Laws Code, is amended by adding Chapter 8819 to read as follows:

CHAPTER 8819. PANOLA COUNTY GROUNDWATER

CONSERVATION DISTRICT

SUBCHAPTER A. GENERAL PROVISIONS

Sec. 8819.001. DEFINITIONS. In this chapter:

(1) "Board" means the board of directors of the district.

(2) "Director" means a member of the board.

(3) "District" means the Panola County Groundwater Conservation District.

Sec. 8819.002. NATURE OF DISTRICT. The district is a groundwater conservation district in Panola County created under and essential to accomplish the purposes of Section 59, Article XVI, Texas Constitution.

Sec. 8819.003. CONFIRMATION ELECTION REQUIRED. If the creation of the district is not confirmed at a confirmation election held on or before December 31, 2008, the district is dissolved on that date, except that:

(1) any debts incurred shall be paid;

(2) any assets that remain after the payment of debts shall be transferred to Panola County; and

(3) the organization of the district shall be maintained until all debts are paid and remaining assets are transferred.

Sec. 8819.004. INITIAL DISTRICT TERRITORY. The initial boundaries of the district are coextensive with the boundaries of Panola County, Texas.

Sec. 8819.005. APPLICABILITY OF OTHER GROUNDWATER CONSERVATION DISTRICT LAW. Except as otherwise provided by this chapter, Chapter 36, Water Code, applies to the district.

[Sections 8819.006-8819.020 reserved for expansion]

SUBCHAPTER A-1. TEMPORARY PROVISIONS

Sec. 8819.021. APPOINTMENT OF TEMPORARY DIRECTORS. (a) Not later than the 45th day after the effective date of this chapter, nine temporary directors shall be appointed as follows:

(1) the Panola County Commissioners Court shall appoint eight temporary directors, with two of the temporary directors appointed from each of the four commissioners precincts in the county to represent the precincts in which the temporary directors reside; and

(2) the county judge of Panola County shall appoint one temporary director who resides in the district to represent the district at large.

(b) Of the temporary directors, at least one director must represent rural water suppliers in the district, one must represent agricultural interests in the district, and one must represent industrial interests in the district.

I If there is a vacancy on the temporary board of directors of the district, the Panola County Commissioners Court shall appoint a person to fill the vacancy in a manner that meets the representational requirements of this section.

(d) Temporary directors serve until the earlier of:

(1) the election of initial directors under Section 8819.023; or

(2) the date this subchapter expires under Section 8819.026.

Sec. 8819.022. ORGANIZATIONAL MEETING OF TEMPORARY DIRECTORS. As soon as practicable after all the temporary directors have qualified under Section 36.055, Water Code, a majority of the temporary directors shall convene the organizational meeting of the district at a location within the district agreeable to a majority of the directors. If an agreement on location cannot be reached, the organizational meeting shall be at the Panola County Courthouse.

Sec. 8819.023. CONFIRMATION AND INITIAL DIRECTORS' ELECTION. (a) The temporary directors shall hold an election to confirm the creation of the district and to elect the initial directors of the district.

(b) The temporary directors shall have placed on the ballot the names of all candidates for an initial director's position who have filed an application for a place on the ballot as provided by Section 52.003, Election Code.

I The ballot must be printed to provide for voting for or against the proposition: "The creation of the Panola County Groundwater Conservation District."

(d) If the district levies a maintenance tax for payment of expenses, the ballot must be printed to provide for voting for or against the proposition: "The levy of a maintenance tax at a rate not to exceed ____ cents for each $100 of assessed valuation."

(e) Section 41.001(a), Election Code, does not apply to an election held under this section.

(f) Except as provided by this section, an election under this section must be conducted as provided by Sections 36.017(b)-(i), Water Code, and the Election Code. The provision of Section 36.017(d), Water Code, relating to the election of permanent directors does not apply to an election under this section.

Sec. 8819.024. INITIAL DIRECTORS. (a) If creation of the district is confirmed at an election held under Section 8819.023, the initial directors of the district serve on the board of directors until permanent directors are elected under Section 8819.025 or 8819.053.

(b) The two initial directors representing each of the four commissioners precincts shall draw lots to determine which of the two directors shall serve a term expiring June 1 following the first regularly scheduled election of directors under Section 8819.025, and which of the two directors shall serve a term expiring June 1 following the second regularly scheduled election of directors. The at-large director shall serve a term expiring June 1 following the second regularly scheduled election of directors.

Sec. 8819.025. INITIAL ELECTION OF PERMANENT DIRECTORS. On the uniform election date prescribed by Section 41.001, Election Code, in May of the first even-numbered year after the year in which the district is authorized to be created at a confirmation election, an election shall be held in the district for the election of four directors to replace the initial directors who, under Section 8819.024(b), serve a term expiring June 1 following that election.

Sec. 8819.026. EXPIRATION OF SUBCHAPTER. This subchapter expires September 1, 2012.

[Sections 8819.027-8819.050 reserved for expansion]

SUBCHAPTER B. BOARD OF DIRECTORS

Sec. 8819.051. DIRECTORS; TERMS. (a) The district is governed by a board of nine directors.

(b) Directors serve staggered four-year terms, with four or five directors' terms expiring June 1 of each even-numbered year.

I A director may serve consecutive terms.

Sec. 8819.052. METHOD OF ELECTING DIRECTORS: COMMISSIONERS PRECINCTS. (a) The directors of the district shall be elected according to the commissioners precinct method as provided by this section.

(b) One director shall be elected by the voters of the entire district, and two directors shall be elected from each county commissioners precinct by the voters of that precinct.

I Except as provided by Subsection (e), to be eligible to be a candidate for or to serve as director at large, a person must be a registered voter in the district. To be a candidate for or to serve as director from a county commissioners precinct, a person must be a registered voter of that precinct.

(d) A person shall indicate on the application for a place on the ballot:

(1) the precinct that the person seeks to represent; or

(2) that the person seeks to represent the district at large.

(e) When the boundaries of the county commissioners precincts are redrawn after each federal decennial census to reflect population changes, a director in office on the effective date of the change, or a director elected or appointed before the effective date of the change whose term of office begins on or after the effective date of the change, shall serve in the precinct to which elected or appointed even though the change in boundaries places the person's residence outside the precinct for which the person was elected or appointed.

Sec. 8819.053. ELECTION DATE. The district shall hold an election to elect the appropriate number of directors on the uniform election date prescribed by Section 41.001, Election Code, in May of each even-numbered year.

Sec. 8819.054. COMPENSATION. (a) Sections 36.060(a), (b), and (d), Water Code, do not apply to the district.

(b) A director is entitled to receive compensation of not more than $50 a day for each day the director actually spends performing the duties of a director. The compensation may not exceed $3,000 a year.

I The board may authorize a director to receive reimbursement for the director's reasonable expenses incurred while engaging in activities on behalf of the board.

Sec. 8819.055. BOARD ACTION. A majority vote of a quorum is required for board action. If there is a tie vote, the proposed action fails.

[Sections 8819.056-8819.100 reserved for expansion]

SUBCHAPTER C. POWERS AND DUTIES

Sec. 8819.101. GENERAL POWERS. Except as otherwise provided by this chapter, the district has all of the rights, powers, privileges, functions, and duties provided by the general law of this state applicable to groundwater conservation districts created under Section 59, Article XVI, Texas Constitution.

Sec. 8819.102. GROUNDWATER WELLS UNDER RAILROAD COMMISSION JURISDICTION. (a) Except as provided by this section, a groundwater well drilled or operated within the district under a permit issued by the Railroad Commission of Texas is under the jurisdiction of the railroad commission, and, in respect to such a well, the district has only the authority provided by Chapter 36, Water Code.

(b) Groundwater produced in an amount authorized by a railroad commission permit may be used within or exported from the district without a permit from the district.

I To the extent groundwater is produced in excess of railroad commission authorization, the holder of the railroad commission permit:

(1) shall apply to the district for the appropriate permit for the excess production; and

(2) is subject to the applicable regulatory fees.

Sec. 8819.103. PROHIBITION ON DISTRICT PURCHASE, SALE, TRANSPORT, OR DISTRIBUTION OF WATER. The district may not purchase, sell, transport, or distribute surface water or groundwater for any purpose.

Sec. 8819.104. PROHIBITION ON DISTRICT USE OF EMINENT DOMAIN POWERS. The district may not exercise the power of eminent domain.

Sec. 8819.105. REGIONAL COOPERATION. (a) In this section, "designated groundwater management area" means an area designated as a groundwater management area under Section 35.004, Water Code.

(b) To provide for regional continuity, the district shall comply with the requirements of Section 36.108, Water Code, and:

(1) participate as needed in coordination meetings with other groundwater conservation districts in its designated groundwater management area;

(2) coordinate the collection of data with other groundwater conservation districts in its designated groundwater management area in such a way as to achieve relative uniformity of data type and quality;

(3) coordinate efforts to monitor water quality with other groundwater conservation districts in its designated groundwater management area, local governments, and state agencies;

(4) provide groundwater level data to other groundwater conservation districts in its designated groundwater management area;

(5) investigate any groundwater or aquifer pollution with the intention of locating its source;

(6) notify other groundwater conservation districts in its designated groundwater management area and all appropriate agencies of any groundwater pollution detected;

(7) annually provide to other groundwater conservation districts in its designated groundwater management area an inventory of water wells and an estimate of groundwater production in the district; and

(8) include other groundwater conservation districts in its designated groundwater management area on the mailing lists for district newsletters, seminars, public education events, news articles, and field days.

[Sections 8819.106-8819.150 reserved for expansion]

SUBCHAPTER D. GENERAL FINANCIAL PROVISIONS

Sec. 8819.151. LIMITATION ON TAXES. The district may not impose ad valorem taxes at a rate that exceeds 1.5 cents on each $100 valuation of taxable property in the district.

Sec. 8819.152. FEES. (a) The board by rule may impose reasonable fees on each well:

(1) for which a permit is issued by the district; and

(2) that is not exempt from district regulation.

(b) A production fee may be based on:

(1) the size of column pipe used by the well; or

(2) the amount of water actually withdrawn from the well, or the amount authorized or anticipated to be withdrawn.

I The board shall base the initial production fee on the criteria listed in Subsection (b)(2). The initial production fee:

(1) may not exceed:

(A) 25 cents per acre-foot for water used for agricultural irrigation; or

(B) 6.75 cents per thousand gallons for water used for any other purpose; and

(2) may be increased at a cumulative rate not to exceed three percent per year.

(d) In addition to the production fee authorized under this section, the district may assess an export fee on groundwater from a well that is produced for transport outside the district.

(e) Fees authorized by this section may be:

(1) assessed annually;

(2) used to pay the cost of district operations; and

(3) used for any other purpose allowed under Chapter 36, Water Code.

Sec. 8819.153. LIMITATION ON INDEBTEDNESS. The district may issue bonds and notes under Subchapter F, Chapter 36, Water Code, except that the total indebtedness created by that issuance may not exceed $500,000 at any time.

SECTION 2. (a) The legal notice of the intention to introduce this Act, setting forth the general substance of this Act, has been published as provided by law, and the notice and a copy of this Act have been furnished to all persons, agencies, officials, or entities to which they are required to be furnished under Section 59, Article XVI, Texas Constitution, and Chapter 313, Government Code.

(b) The governor has submitted the notice and Act to the Texas Commission on Environmental Quality.

I The Texas Commission on Environmental Quality has filed its recommendations relating to this Act with the governor, lieutenant governor, and speaker of the house of representatives within the required time.

(d) All requirements of the constitution and laws of this state and the rules and procedures of the legislature with respect to the notice, introduction, and passage of this Act are fulfilled and accomplished.

SECTION 3. This Act takes effect immediately if it receives a vote of two-thirds of all the members elected to each house, as provided by Section 39, Article III, Texas Constitution. If this Act does not receive the vote necessary for immediate effect, this Act takes effect September 1, 2007.

_____ _____

President of the Senate Speaker of the House

I certify that H.B. No. 1498 was passed by the House on May 2, 2007, by the following vote: Yeas 147, Nays 0, 2 present, not voting; that the House refused to concur in Senate amendments to H.B. No. 1498 on May 24, 2007, and requested the appointment of a conference committee to consider the differences between the two houses; and that the House adopted the conference committee report on H.B. No. 1498 on May 26, 2007, by the following vote: Yeas 140, Nays 0, 2 present, not voting.

_____
Chief Clerk of the House

I certify that H.B. No. 1498 was passed by the Senate, with amendments, on May 21, 2007, by the following vote: Yeas 31, Nays 0; at the request of the House, the Senate appointed a conference committee to consider the differences between the two houses; and that the Senate adopted the conference committee report on H.B. No. 1498 on May 26, 2007, by the following vote: Yeas 30, Nays 0.

_____
Secretary of the Senate

APPROVED: _____

Date

_____

Governor

APPENDIX B

RESOLUTION ADOPTING MANAGEMENT PLAN

APPENDIX C

NOTICES OF PUBLIC HEARINGS AND MEETINGS OF THE PANOLA COUNTY GCD

APPENDIX D

ENTITIES TO NOTIFY AND EVIDENCE OF COORDINATION WITH SURFACE WATER MANAGEMENT ENTITIES

Cities in Panola County:

Brenda Samford, City Manager
812 W. Panola St.
Carthage, Texas 75633

City of Beckville
P.O. Box 97
Beckville, Texas 75631

City of Gary
P. O. Drawer 160
Gary, Texas 75643

City of Tatum
P. O. Box 1105
Tatum, Texas 75691

Groundwater Management Area 11-Groundwater Conservation Districts:

Anderson County Underground Water Conservation District
Tommy Wardell
450 Anderson County Road #409
Palestine, Texas 75803

Neches & Trinity Valleys Groundwater Conservation District
Roy J. Rodgers, Manager
P. O. Box 1387
Jacksonville, Texas 75766

Pineywoods Groundwater Conservation District
David Alford, General Manager
202 E. Pilar, Room 213
Nacogdoches, Texas 75961

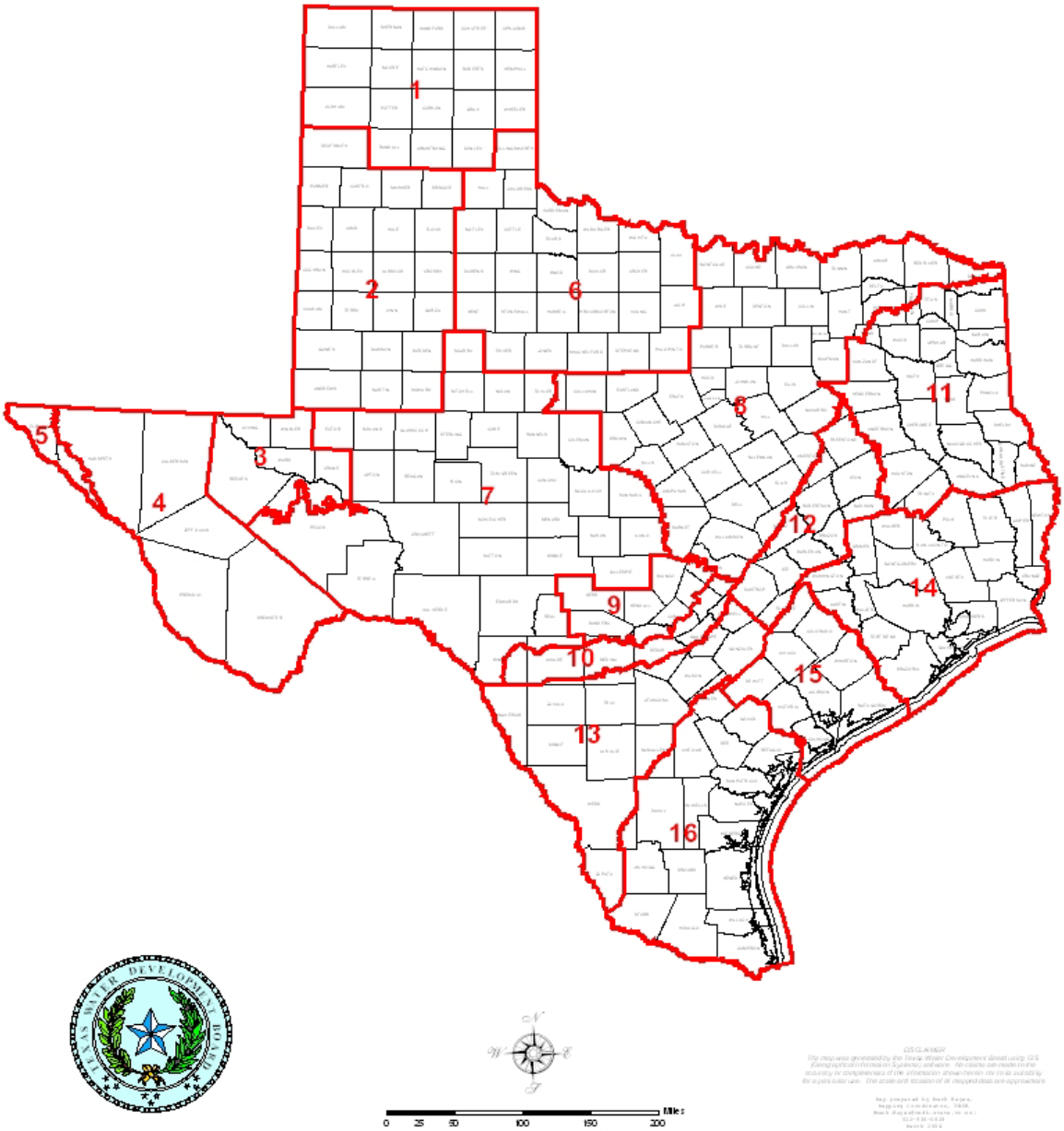
Rusk County Groundwater Conservation District
Len Luscomb, General Manager
P. O. Box 97
Henderson, Texas 75653

Surface Water Management Entities:
Sabine River Authority
Jerry Clark, General Manager
P.O. Box 579
Orange, Texas 77631-0579

Panola County Fresh Water Supply District No. 1
Harry Smith, General Manager
Route 4, Box 331
Carthage, Texas 75633-0331

APPENDIX E

Groundwater Management Areas In Texas



APPENDIX F

HISTORICAL WATER USE SUMMARY BY GROUNDWATER (GW) AND SURFACE WATER (SW)

Panola County
Unit: Acre-Feet (ACFT)

Year	Source	Municipal	Manufacturing	Steam Electric	Irrigation	Mining	Livestock	Total
1980	GW	1,862	108	0	0	139	708	2,817
	SW	817	630	0	0	252	542	2,241
	Total	**2,679**	**738**	**0**	**0**	**391**	**1,250**	**5,058**
1984	GW	1,989	352	0	0	286	654	3,281
	SW	777	409	0	64	0	981	2,231
	Total	**2,766**	**761**	**0**	**64**	**286**	**1,635**	**5,512**
1985	GW	2,020	362	0	0	200	640	3,222
	SW	780	420	0	100	0	960	2,260
	Total	**2,800**	**782**	**0**	**100**	**200**	**1,600**	**5,482**
1986	GW	1,768	243	0	0	3,305	670	5,986
	SW	713	453	0	100	0	1,007	2,273
	Total	**2,481**	**696**	**0**	**100**	**3,305**	**1,677**	**8,259**
1987	GW	1,856	196	0	0	989	695	3,736
	SW	1,202	477	0	100	2,133	1,043	4,955
	Total	**3,058**	**673**	**0**	**100**	**3,122**	**1,738**	**8,691**
1988	GW	1,959	189	0	0	1,047	705	3,900
	SW	1,450	504	0	100	2,108	1,059	5,221
	Total	**3,409**	**693**	**0**	**100**	**3,155**	**1,764**	**9,121**
1989	GW	1,865	196	0	0	1,078	747	3,886
	SW	1,226	477	0	0	2,130	1,121	4,954
	Total	**3,091**	**673**	**0**	**0**	**3,208**	**1,868**	**8,840**
1990	GW	1,898	212	0	0	1,078	858	4,046
	SW	1,117	429	0	0	2,130	1,288	4,964
	Total	**3,015**	**641**	**0**	**0**	**3,208**	**2,146**	**9,010**

1991	GW	1,901	359	0	0	1,044	869	4,173
	SW	1,230	258	0	0	2,047	1,303	4,838
	Total	**3,131**	**617**	**0**	**0**	**3,091**	**2,172**	**9,011**
1992	GW	2,036	205	0	0	1,051	812	4,104
	SW	1,284	389	0	0	2,065	1,217	4,955
	Total	**3,320**	**594**	**0**	**0**	**3,116**	**2,029**	**9,059**
1993	GW	1,965	196	0	0	1,064	815	4,040
	SW	1,445	444	0	0	2,100	1,222	5,211
	Total	**3,410**	**640**	**0**	**0**	**3,164**	**2,037**	**9,251**
1994	GW	1,944	210	0	0	1,064	1,090	4,308
	SW	1,290	420	0	0	2,100	1,635	5,445
	Total	**3,234**	**630**	**0**	**0**	**3,164**	**2,725**	**9,753**
1995	GW	2,004	265	0	0	1,045	1,059	4,373
	SW	1,558	641	0	0	2,090	1,589	5,878
	Total	**3,562**	**906**	**0**	**0**	**3,135**	**2,648**	**10,251**
1996	GW	1,918	247	0	0	1,944	1,126	5,235
	SW	1,508	665	0	0	2,090	1,690	5,953
	Total	**3,426**	**912**	**0**	**0**	**4,034**	**2,816**	**11,188**
1997	GW	1,894	252	0	0	1,947	1,128	5,221
	SW	1,511	744	0	0	2,095	1,693	6,043
	Total	**3,405**	**996**	**0**	**0**	**4,042**	**2,821**	**11,264**
1998	GW	1,959	119	0	0	1,947	1,118	5,143
	SW	1,876	907	0	0	1,881	1,677	6,341
	Total	**3,835**	**1,026**	**0**	**0**	**3,828**	**2,795**	**11,484**
1999	GW	1,989	118	0	0	1,947	1,216	5,270
	SW	1,871	156	0	0	1,881	1,825	5,733
	Total	**3,860**	**274**	**0**	**0**	**3,828**	**3,041**	**11,003**
2000	GW	2,074	269	0	0	1,016	1,238	4,597
	SW	2,018	915	0	0	1,881	1,858	6,672
	Total	**4,092**	**1,184**	**0**	**0**	**2,897**	**3,096**	**11,269**
2001	GW	1,993	326	0	0	1,196	1,264	4,779
	SW	1,615	964	0	0	1,286	1,903	5,768
	Total	**3,608**	**1,290**	**0**	**0**	**2,482**	**3,167**	**10,547**
2002	GW	1,906	263	0	0	434	1,254	3,857
	SW	1,544	778	0	0	467	1,888	4,677
	Total	**3,450**	**1,041**	**0**	**0**	**901**	**3,142**	**8,534**

2003	GW	1,861	746	0	0	832	1,249	4,688
	SW	1,508	2,203	0	0	896	1,880	6,487
	Total	**3,369**	**2,949**	**0**	**0**	**1,728**	**3,129**	**11,175**
2004	GW	1,703	177	0	0	842	1,270	3,992
	SW	1,380	521	0	0	907	1,913	4,721
	Total	**3,083**	**698**	**0**	**0**	**1,749**	**3,183**	**8,713**

NOTE: All Pumpage reported in acre-feet TWDB: 05/2/2008t
Source: TWDB Water Use Survey Database
(http://www.twdb.state.tx.us/wushistorical/DesktopDefault.aspx?PageID=2)