Spotlight on Groundwater Conservation Districts in Texas

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All recommendations, opinions expressed or any errors in the report are the sole responsibility of Environmental Defense.

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Preface

The Texas office of Environmental Defense, a leading national non-profit organization representing more than 300,000 members, prepared this report as part of our ongoing efforts to improve water management policy in Texas. Since 1967, Environmental Defense has linked science, economics and law to create innovative, equitable and cost-effective solutions to the most urgent environmental problems.

One of today's most urgent problems in Texas is securing plentiful clean water. Across the state, municipal and agricultural water consumers could face shortages as our population grows, straining both the economy and ecology of urban and rural areas. This report focuses on the role and activities of the state's groundwater districts. The districts are an essential component of the state's ability to protect the communities, agricultural and ranching operations, and the rivers and springs that depend on the state's nine major and 20 minor aquifers.

The Texas legislature has established groundwater districts as the preferred method of protecting and managing groundwater resources. But many districts are facing tough rule-making and management issues. This report highlights those issues - particularly as they relate to aquifer sustainability - and differing strategies that 10 specific groundwater districts are using to address them. The report also includes recommendations that we believe will help districts across the state fulfill their important mandate.

Executive Summary

This report makes several recommendations regarding actions that could be taken by the Texas legislature to increase the ability and effectiveness of groundwater conservation districts. The recommendations are summarized briefly below, and explained in more detail in the full report.

Recommendations

- To increase the likelihood that confirmation elections for proposed groundwater conservation districts will be successful, a neutral entity, such as Texas A&M Cooperative Extension Service, should be provided with additional resources to conduct public information awareness campaigns.

- To enable them to fulfill their mission, districts should be able to use the complete range of funding options afforded by Chapter 36 of the Texas Water Code.

- Because public education is an essential tool for managing groundwater resources, the legislature should encourage districts to make it a high priority and examine the Texas A&M Cooperative Extension Service's need for additional resources to assist districts in their educational efforts.

- The legislature should reinforce the recent trend of groundwater conservation districts that are establishing a sustainable management goal by requiring districts to include a clear management goal for the aquifer(s) within their jurisdiction, with sustainability as the preferred goal in most cases.

- The legislature should review the definition of "waste" in Chapter 36 to ensure groundwater districts have full authority to prevent waste of water.

- The legislature should ensure that groundwater conservation districts have sufficient resources to analyze the effect of out-of-district exports on local communities, the environment and the economy. In addition, the legislature should clarify what procedures the districts should follow regarding large export proposals in providing permit applicants due process while encouraging meaningful participation by the districts' residents.

- Groundwater districts should have the option of being represented by the Texas Attorney General's Office in legal challenges involving district rules or management plans. Districts should also be able to request an Attorney General's opinion when necessary.

Introduction

The population of Texas is expected to double by 2050, with the bulk of the growth occurring within and around the major urban centers of the state. With this growth, there will be increasing pressure on the state's surface and groundwater supplies. According to current projections in the 2002 State Water Plan, an 18 % increase in water demand is expected over the next 50 years.[1]

In 1999, the state used 16 million acre-feet of water, 58 % (9.28 million acre-feet) of which was groundwater withdrawals (see Figure 1).[2] Agriculture accounts for most of the groundwater used in Texas; about 80 % of all groundwater used in the state is for irrigating crops. But Texas cities also depend on groundwater. Amarillo, Bryan-College Station, El Paso, Lubbock, Houston, and San Antonio all use groundwater to supply residences, businesses and industry.[3] Hundreds of thousands of Texas homeowners living in unincorporated areas rely on groundwater from individual wells. Between 12,000 and 28,000 new supply wells are drilled into Texas aquifers every year. According to the Texas Water Development Board (TWDB) projections, by 2050 groundwater will supply only 4.6 million acre-feet or 31 % of Texas' water supply. Because agricultural use of groundwater is declining, it is expected that by 2050 the municipal share of groundwater will double.

Groundwater also makes important contributions to our surface water supply. The flow of several Texas rivers are dependent on spring flow from aquifers. For instance, the Edwards-Trinity aquifer discharges as springs that form the headwaters of the Guadalupe River; the Edwards aquifer springs are also the headwaters of the San Antonio, Comal and San Marcos Rivers.

In some parts of the state more groundwater is being used than is being replenished in the aquifers, a practice known as "mining" the aquifer. In these areas (including the Ogallala in West Texas and the Hueco Bolson in the El Paso area), groundwater levels will fall substantially over the next decades at current pumping rates.

Concern for the depletion of aquifers from overpumping, particularly after the Texas Supreme Court adopted the "rule of capture" in 1907, motivated the Texas Legislature in 1947 to authorize the creation of groundwater conservation districts to conserve and protect groundwater. The first district - the High Plains Underground Water Conservation District - was established in 1951.

In 1997, the legislature added language to the Texas Water Code explicitly recognizing groundwater conservation districts as the "preferred method of determining, controlling, and managing groundwater resources"(§36.0015).[4] By statute, the purpose of groundwater districts is to "provide for the conservation, preservation, protection, recharging, and prevention of waste

[1] Water for Texas – 2002, Texas Water Development Board , January 2002. A second round of regional planning, which may result in significantly revised demand estimates, is currently underway.

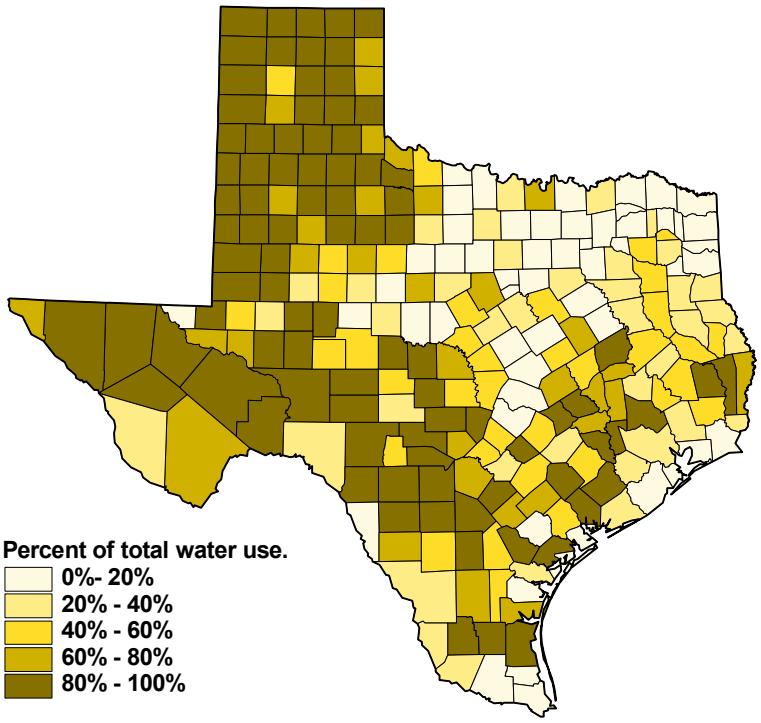
[2] One acre-foot equals 325,851gallons, or approximately enough water to cover a football field one foot deep.

[3] Bruce Lesikar, Ronald Kaiser, Valeen Silvy, Questions about Groundwater Conservation Districts in Texas, (Texas Cooperative Extension, Texas Water Resources Institute, Bryan-College Station, 2002)

[4] Outside of groundwater districts, Texas has no regulation of groundwater pumping. Instead the state relies on the "rule of capture," which essentially allows the overlying landowner to pump as much as they want, without requiring a permit or other authorization. For more discussion, see http://www.texaswatermatters.com/water_planning_groundwater.htm. The application of the rule of capture outside groundwater districts was most recently reaffirmed by the Texas Supreme Court in Sipriano v. Great Spring Waters of America, 1 S.W.3d 75 (Tex. 1999).

of groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence caused by withdrawals of water from those groundwater resources or their subdivision …" (Texas Water Code §36.0015).

Figure 1. Estimated Groundwater Use in Texas, 2000



Source: TWDB, 2000.

Current Major Issues

Today's groundwater districts face both administrative and regulatory issues. Administrative issues include how the districts are established (such as the confirmation election process); the ability of districts to adequately fund their operations and carry out their mandates; and their efforts to incorporate public education into district operations. Regulatory issues include the districts' ability to establish standards for, and enforce, sustainable use of groundwater within their jurisdiction; the definition of "waste" of groundwater; and the ability to control exportation of groundwater outside district boundaries.

In an effort to provide a current perspective on these issues and how districts around the state are addressing them, Environmental Defense collected and analyzed extensive information on the following 10 groundwater districts:

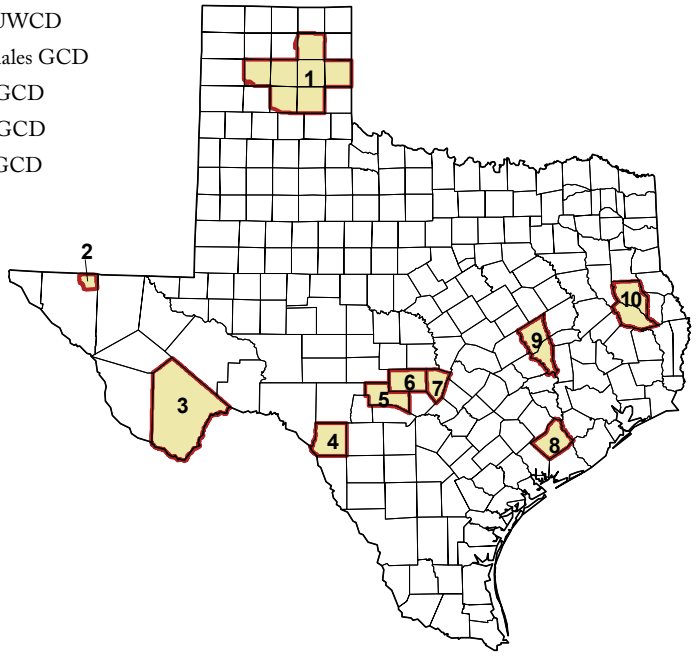
Blanco-Pedernales GCD
Brazos Valley GCD
Brewster County GCD
Coastal Bend GCD
Headwaters UWCD
Hill Country UWCD
Hudspeth County UWCD No. 1
Kinney County GCD
Panhandle GCD
Pineywoods GCD

These districts were selected to represent different areas of the state (see Figure 2), to include both mature and newly-created districts, and for the purpose of highlighting specific groundwater issues that certain parts of the state are experiencing. Reviews were conducted through assessments of the districts' management plans, their rules and enabling legislation, and through interviews with district representatives.

An overview of each district is included in Appendix A.

Figure 2. Spotlighted Groundwater Conservation Districts.

1 Panhandle GCD
2 Hudspeth County UWCD
3 Brewster County GCD
4 Kinney County GCD
5 Headwaters UWCD
6 Hill Country UWCD
7 Blanco-Pedernales GCD
8 Coastal Bend GCD
9 Brazos Valley GCD
10 Pineywoods GCD



Findings, Conclusions and Recommendations

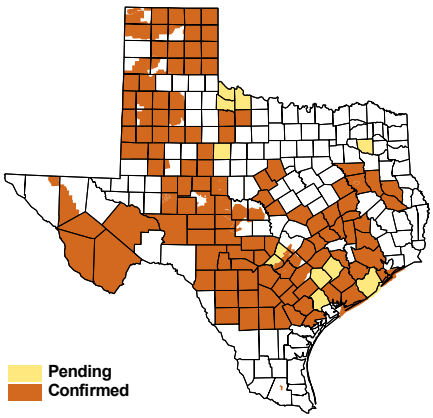
Administrative Issues

DISTRICT CREATION

Groundwater districts may be created by one of three methods:[5] by the legislature, by petition of the property owners, or by the Texas Commission on Environmental Quality (TCEQ).[6] In addition, new areas can be annexed into an existing district.[7] With the exception of districts created by the TCEQ, it is up to the voting populace in the newly-created district or annexation area to confirm the district through an election. District confirmation is often dependent on the area's political climate and whether there are any special management issues concerning the area's groundwater resources. Well-funded opposition and general lack of understanding of the benefits of being a district are common culprits in confirmation election failures.

As of November 2002, Texas has 79 confirmed groundwater conservation districts (see Figure 3). There are 10 districts that have been created but not confirmed. Of these 10, five have yet to host their elections (Hays Trinity GCD, Lower Seymour GCD, Tri-County GCD, Brazoria County GCD, and Lake County GCD), and four others have been defeated at least once (Southeast Trinity GCD, Lavaca County GCD, Crossroads GCD, Post Oak GCD). In addition, in the November 2002 election, Bluebonnet GCD, created as a five-county district, was voted down in two of its member counties (Washington and Waller counties). This district will now serve Austin, Grimes, and Walker counties.

Figure 3. Groundwater Conservation Districts



Source: TWDB, November 2002

Some counties have tried multiple times, unsuccessfully, to establish groundwater conservation districts. In Comal County, for example, there have been two efforts over the last decade to establish a district. In 1995, the Comal County GCD, which was created through the landowner petition process, failed confirmation. In 2001, the Southeast Trinity GCD, created by the legislature and also covering Comal County, was voted down. Situated within a Priority Groundwater Management Area,[8] Comal County is experiencing heightened pressure on local groundwater.

[5] The majority of groundwater districts are created along county boundaries, rather than following the aquifers' contours. In fact, using county boundaries to design a groundwater district has been preferred by those seeking to create districts either through voter petition or legislation.

[6] Formerly the Texas Natural Resource Conservation Commission.

[7] For more information on groundwater district creation, see Texas Cooperative Extension Service, "Questions About Groundwater Conservation Districts in Texas," Publication No. B-6120, Texas A&M University System, June 2002, available at www.twri.tamu.edu.

[8] Priority Groundwater Management Areas are areas designated by the TCEQ that are either experiencing or expect to experience within the next 25 years critical groundwater problems including shortages, subsidence or contamination (Texas Water Code § 35.007). The Hill Country Priority Groundwater Management Area was created in 1999.

The establishment of a district is essential to better management of the limited resources of the Trinity aquifer. In 2000, Comal County had a population of 78,021. If the county experiences moderate population growth for the next two decades, its population will exceed 120,600 by 2020; if the county experiences the type of explosive growth the state experienced in the 1990s, the population could be over 173,000 by 2020. As it stands now, the district has until 2005 to host another election(s), but it is anticipated that the temporary district board will request the legislature to dissolve the district. However, because Comal County is part of a Priority Groundwater Management Area, the TCEQ will then have the opportunity to create a district.[9]

According to one proponent of creating the Southeast Trinity GCD, there were three major factors that helped defeat the district. First, the Canyon Lake Water Supply Corporation, which serves approximately 5,000 water users within the proposed district, included fliers in all customer billings claiming that the formation of a groundwater district would increase the cost of water for all of Corporation's customers. Another opponent of the district took out newspaper ads declaring that the district would be able to use eminent domain, put meters on all wells and take other actions perceived as interfering with private property rights. There was also difficulty in raising public awareness about the need for a groundwater district.

The legislatively-created Post Oak GCD - proposed to cover a portion of the Gulf Coast aquifer in Colorado County - was defeated in two consecutive elections, in 2001 and in November 2002. Unlike the other three districts that were defeated in recent elections, the Post Oak GCD will not have the opportunity to re-host a confirmation election due to time limitations set forth in their enabling legislation.

The TCEQ is aware of six annexation elections occurring over the last two years.10 Two of these were unsuccessful: a petition by Swisher County residents to join the High Plains UWCD No. 1 and an effort by southern Bexar County landowners to be incorporated into the Evergreen UWCD.

Southern Bexar County exemplifies an area that would benefit greatly from district management. The effort to join the Evergreen UWCD was fueled by residents concerned about San Antonio Water System's (SAWS) plan to implement an aquifer storage and recovery project on 3,200 acres owned by the utility in southern Bexar County. The utility proposes to withdraw 14,000 acre-feet per year from the Carrizo Wilcox aquifer underneath their property in 2004 and 2005 alone. Under Evergreen UWCD's rules, SAWS would have been limited to 6,400 acre-feet per year, a rate that the district believes the aquifer can support on a more sustainable basis. With only 8 % of the estimated 8,000 residents living in the annexation area voting, the effort was defeated by a vote of 348 to 322.[11]

Under Senate Bill 2, enacted in 2001, groundwater districts within the same groundwater management areas are required to share management plans and to cooperate.[12] Senate Bill 2 does not specify all the ways in which the districts within a management area must cooperate, but it does state that one district may compel another district(s) to share management plans. The groundwater districts reviewed in this report that have formed cooperative relationships include the Headwaters UWCD, the Blanco-Pedernales GCD and the Hill Country UWCD.

[9] See Sections 35.012 and 36.0151, Texas Water Code.
[10] Per conversation with Kelly Mills, TCEQ, November 2002.
[11] "Evergreen annexation is rejected," San Antonio Express News, 05/05/02.
[12] Section 36.108, Texas Water Code.

These districts, along with others in the Hill Country Groundwater Management Area have established the Hill Country Alliance of Groundwater Districts.[13]

Conclusion and Recommendation: The reasons behind the failures of confirmation and annexation elections are varied, but there are some common threads. Fear of increased taxes, regulation, and government control over private property are familiar explanations for the confirmation failures. In some cases, these fears may be fueled by opponents of the district with pending pumping plans - plans that might be curtailed by the establishment of a district. One way to confront this problem would be to have a neutral entity provide public information/workshops on the benefits of groundwater districts as well as the pros and cons of continuing under the rule of capture during the run-up to the confirmation election. The Texas Agricultural Extension Service (TAES) is one possible choice for providing such information, though increased financial support for TAES may be required. (See discussion on public education, below).

FUNDING CAPACITY

The primary methods used by districts to finance their operations include property taxes, well production fees, and administrative fees for well permits and export permits. By statute, most districts may levy taxes if the tax is approved by majority vote at an election in the district held for that purpose. Districts may also accept outside funding for their operations in the form of grants and loans (Texas Water Code § 36.207). For example, some districts are supported in part by the county with which they share jurisdiction and some receive grants from state agencies such as the TWDB and private foundations. Districts may also issue and sell bonds for capital improvements.

Under Texas Water Code Section 36.020, the general ad valorem tax rate may not exceed $0.50 on each $100 of assessed property valuation. Table 1 provides information on current and maximum allowable tax rates and annual budgets of the spotlighted districts.

[13] The Texas Water Development Board formally designated groundwater management area boundaries in December 2002. See www.twdb.state.tx.us for more information.

TABLE 1. FUNDING CAPACITIES, SPOTLIGHTED DISTRICTS

District	Current Tax Rate Per $100 valuation	Maximum Rate Authorized Per $100 valuation	Approximate Current Budget
Blanco-Pedernales GCD	$0.03	$0.05	$150,000
Brazos Valley GCD	Not authorized	Not authorized	$ 351,000
Brewster County GCD	None	$0.50	$10,000
Coastal Bend GCD	$0.02	$0.05	$307,000
Headwaters UWCD	$0.01	$0.01	$268,000
Hill Country UWCD	$0.0089	Not available	$176,000
Hudspeth County UWCD No. 1	$ 0.26	$0.50	$ 65,000
Kinney County GCD	$0.10	$ 0.05	$ 60,000 to $ 67,000
Panhandle GCD	$0.015	$0.05	$1,229,900
Pineywoods GCD	Not authorized	Not authorized	$150,000 to $170,000

For many districts, funding options are limited by their enabling legislation. Of the 11 districts confirmed in November 2002, six were created without taxing authority, i.e. the use of an ad valorem tax to support the district's operation. Other limitations experienced by districts include a lower cap on their taxing rate than established for districts in the Texas Water Code; a lower ceiling established for production fees; or limitations on the type of fees they can collect. Of the districts surveyed for this report, two (Pineywoods GCD and Brazos Valley GCD) were created without the authority to tax while one that was given that authority, Brewster County GCD, has chosen not to use it. Of the 11 districts confirmed in November 2002, four were created without taxing authority (Bluebonnet GCD, Brazos Valley GCD, Lost Pines GCD and Mid-East Texas GCD.) Despite these limited funding options, however, the districts still have a wide range of responsibilities under Chapter 36 of the Texas Water Code.[14] Furthermore, expensive technical studies may be required in some districts to fully characterize the aquifer and determine sustainable pumping levels.

The Hays-Trinity GCD, which covers the Trinity aquifer in western Hays County, is another example of a legislatively-created district with extremely limited funding capabilities. This district was ratified by the legislature in 2001 and plans to host its confirmation election in May 2003. If confirmed, the legislature mandated that the district's only funding source would be a water utility service connection fee, which cannot exceed $300 per well. Ironically, the district would be trying to operate in an area where a rapidly growing population is putting increasing pressure on limited groundwater resources, but its only method of financing will be to issue permits for new wells.

In the 2002 State Water Plan, TWDB included the following major policy recommendation to the legislature:

> "TWDB continues to maintain that groundwater management in Texas is best accomplished through local groundwater conservation districts. Further, these districts should be constituted considering both hydrology and the availability of sufficient financial resources to accomplish key management tasks while recognizing existing local governmental entities and mutual local agreements."

[14] See, for example, the discussion of management plans and sustainability below.

Conclusion and Recommendation: Only with sufficient funding will the districts be able to serve the public and fulfill their mandate to "determine, control, and manage groundwater resources within their jurisdiction" (Texas Water Code §36.0015). It is imperative that any newly-created groundwater districts have the ability, if they so choose, to fully use the complete range of funding options afforded by Chapter 36. In addition, the enabling legislation for those districts created without sufficient funding mechanisms should be amended to ensure those districts will be more than a paper exercise. Furthermore, given the state's dependence on groundwater districts as the "preferred" management method, the state should consider providing general revenue funds to the districts to help them meet critical needs, such as aquifer characterization, recharge studies and setting up real-time water monitoring.

EDUCATION

Districts are not currently required to include public education as a component of their management plans. As a consequence, there is a wide range of emphasis on educational programs among districts. Some have chosen to incorporate strong public outreach components into their objectives, while others have not. The degree of educational activity is often dependent on the age and maturity of the district. More established districts have had time to build up their educational campaigns and seem more likely to have the financial resources needed to support them.

The Panhandle GCD provides a good example of what districts can do. To meet its objective of providing the most efficient use of groundwater, the district has adopted a specific goal for disseminating educational information on the efficient use of water resources. The district's educational program includes outreach to schools and civic organizations, the production of water conservation literature, publishing a quarterly newsletter entitled "Panhandle Water News" and hosting a website. The district's management plan also has a commitment to expanding the conservation education program.

Unfortunately, newly-created and unconfirmed districts often lack the resources needed to finance educational campaigns. This lack of education is commonly cited as one reason why some of the legislatively-authorized districts have not been confirmed. The only funds available to the temporary districts for educational outreach in the pre-election stage are small user fees that can be imposed to pay for the creation and initial operation of the district until the confirmation is complete.

The TAES has responsibility for statewide public education activities relating to groundwater districts. In 1999, the TAES was appropriated $600,000 ($300,000 for 1998 and $300,000 for 1999) to provide educational opportunities for the public in priority groundwater management areas. TEAS has since expanded its program to include the rest of the state. However, appropriations have not increased correspondingly. As part of its program, TAES produces informative brochures and publications on the benefits of districts and a TAES employee is available to give public presentations upon request.

Conclusion and Recommendation: Public education and outreach regarding the need for managing local groundwater resources should be an integral part of groundwater district creation and operation. The state should encourage the districts to make it a high priority and to include public education and outreach in their management plans. The resulting increased public awareness will facilitate district creation and help the public understand the need for sound regulation and management plans in an operational district. The state should examine whether increased funding should be provided to TAES to assist in public education efforts or whether TAES should focus on those areas of the state where districts are being created or investigated.

Regulatory Issues

SUSTAINABILITY

In the context of groundwater management, sustainability generally means the practice of limiting use of an aquifer to a rate at which it can be replenished on a continual basis. Replenishment can occur through both natural recharge (precipitation, runoff, or inflows from rivers) and through artificial recharge (reinjection, catchment structures, brush removal or precipitation enhancement programs). With groundwater resources, one of the first steps in achieving sustainability is for resource managers and their community to plan how future demand for pumping from the aquifer will be managed.

Given that Texas still operates under the rule of capture, sustainable management of groundwater is only possible within groundwater districts, since only within districts can future use be planned and managed.[15] State law requires that districts include the following items in their management plans: the existing total usable volume of groundwater; the amount of annual groundwater use; and the annual amount of recharge in the district. In addition, the plans must include suggestions for increasing recharge potential (TWC §36.1071). While districts are not currently required to state their long-term objective for aquifer maintenance, state law does facilitate adoption of sustainability as a management goal. In 2001, Senate Bill 2 explicitly provided districts with the ability to establish pumping limitations and well spacing requirements to prevent interference between wells and to ensure availability of groundwater within the district boundaries.[16]

Like others around the state, the districts spotlighted in this report are at different stages in terms of their technical understanding of the volume of groundwater available for withdrawal and natural recharge rates. Even so, many of the reviewed districts have identified a management strategy to address the issue of sustainability or are planning to do so once they have a better understanding of the pumping levels their aquifer(s) can support.

Two of the management styles currently being discussed by districts are “prioritized use” and “correlative rights.” A prioritized-use "style" is usually followed in districts that have

[15] Even within groundwater districts, it may be difficult to achieve sustainability. This is because sometimes districts, which are often set by county lines, do not cover an entire aquifer. Thus, pumping in a part of the aquifer that is not under the district’s control but instead is governed by the rule of capture can defeat local efforts to achieve sustainability.

[16] Section 36.116, Texas Water Code.

minimal water resources, like many of the Hill Country districts that manage portions of the Trinity aquifer. These districts are forced to make decisions on the value of the groundwater use because supply is limited. Headwaters UWCD serves as an example of a priority use district.

A correlative-rights "style" of management is practiced in areas of West Texas where equal rights to groundwater is precedent, regardless of use. The choice of management style seems to be driven by both groundwater availability and the level of "control" the districts feel comfortable enforcing. An example of a correlative rights district is Brewster County GCD.

Table 2 lays out the status of the spotlighted districts' knowledge of groundwater availability within their jurisdiction and their long-term strategies for aquifer management.

TABLE 2. STATUS OF GROUNDWATER AVAILABILITY ASSESSMENTS, SPOTLIGHTED DISTRICTS

District	Water Availability Estimation Status	Aquifer Management Strategy
Blanco-Pedernales GCD	The district relies on TWDB Regional Water Plan estimations. It is awaiting Groundwater Availability Model (GAM) results from the TWDB.	The district's policy is in agreement with the opposition to groundwater mining expressed in the Region K Regional Water Plan. Therefore, the district's policy is to limit withdrawal of groundwater from permitted wells to no more than current groundwater availability volumes indicated for the individual aquifers in the Region K plan. The district will establish "Critical Groundwater Areas" where it could set the total annual production from all wells, both exempt and non-exempt.
Brazos Valley GCD	Availability is currently based on TWDB investigations.	The district has hired a hydrologist and appointed a citizens advisory board to help develop their aquifer management strategy.
Brewster County GCD	Water availability estimations are based on TWDB research.	Promoting constructive and sustainable development of the groundwater resources is part of the district's mission statement. The district also amended the management goal of providing for the most efficient use of groundwater to include long-term sustainability and conservation of groundwater resources.
Coastal Bend GCD	Available volume has not been established by the district.	The district is currently drafting its management plan. Its chosen strategy will be based on updated volume estimations once complete.
Headwaters UWCD	Water availability estimations are based on TWDB research.	The district is mounting efforts to keep up with projected increased demands on the aquifer. These include looking at aquifer storage and recovery projects, research into aquifer recharge, and recharge enhancement procedures such as brush control and water catchment basins.

TABLE 2. STATUS OF GROUNDWATER AVAILABILITY ASSESSMENTS, SPOTLIGHTED DISTRICTS, CONT.

District	Water Availability Estimation Status	Aquifer Management Strategy
Hill Country UWCD	Water availability estimations are based on TWDB research and water table estimations.	The district does not expect demand to exceed recharge, though population growth might cause a shortfall in specific geographical areas. If this occurs, the district may regulate the production of permitted wells in order to minimize draw-down. After public comment, the district may declare a "Critical Groundwater Depletion Area." Once such an area has been designated, the district may deny drilling permits and set production limits within that area.
Hudspeth County UWCD No. 1	The district currently bases estimations on TWDB research. Because estimations of availability vary among sources, the district has established a series of recorder wells to better define availability.	The district states in its management plan that it will manage groundwater production in a sustainable manner, balancing permitted withdrawals with long-term sustainable recharge.
Kinney County GCD	The district will use TWDB groundwater availability models, saturation rates and other information to determine amount of recharge available for withdrawal in management zones, which will be created by 01/05.	The district plans to create management zones for the administration of groundwater by 01/05. The zones will serve as areas where the district will determine water availability, authorize total production, and implement proportional reduction of production among various classes of permit holders. Currently, for new permits, there is a two acre-feet per acre of land pumping limitation. For existing wells, pumping limitations are based on demonstrated historical use up to an upper limit of five acre-feet per acre of land.
Panhandle GCD	Estimations are based on historical data, available datasets, and TWDB investigations.	The district has an overall management goal of maintaining an acceptable decline rate for the aquifer (50 % over the next 50 years). This goal is an effort to balance groundwater withdrawals with economic viability, and existing needs with the need to ensure future supplies.
Pineywoods GCD	The district is awaiting the results of the GAM in order to establish available volume.	The district believes that current withdrawal rates can be supported by the aquifer. Pumping rates are evaluated on a case-by-case basis.

There is growing pressure to require districts to address the future condition of their aquifer(s) in their management plans. The 2002 State Water Plan contains the following two recommendations from the TWDB:

- "The Legislature should consider requiring groundwater conservation districts to include in their groundwater management plans a management goal quantifying the desired future condition of the aquifer. The future condition could be described using water quantity and water quality parameters.

- The goal of groundwater management in Texas should be to move toward sustainability but, because aquifers and the social and economic needs of the State vary from place to place, groundwater availability should be locally or regionally assessed, balancing all interests. This is clearly a situation where one size does not fit all. Groundwater conservation districts and regional water planning groups should determine whether sustainable management is appropriate for their area or whether another management scenario better fits the needs of their locality. The TWDB, working cooperatively with groundwater conservation districts and regional water planning groups, should evaluate, as data become available, the hydrologic, environmental, social, and economic impacts of withdrawal of groundwater at various rates on the basis of the identified management strategies, including the long-term sustainable level if appropriate, for the major and minor aquifers."

The goal of sustainability can be achieved by a district's adoption of an overall cap on pumping. While many of the spotlighted districts have established pumping limitations, none of the districts surveyed have established such a cap.

- Both Brewster County GCD and Kinney County GCD have established pumping limitations;
- Four of the districts (Blanco-Pedernales GCD, Coastal Bend GCD, Hudspeth County UWCD No. 1 and Pineywoods GCD) are awaiting additional information on their groundwater resources in order to refine management goals;
- Brazos Valley GCD has estimates of groundwater availability, but is still in the process of formulating its management strategy;
- Hill County GCD and Headwaters UWCD have not established a cap; and
- Panhandle GCD has adopted an acceptable decline rate for their groundwater. While not a sustainability cap, this rate is reflective of a decrease in groundwater usage over the next 50 years.

Conclusion and Recommendation: Districts are already required to determine availability, usage rates, and recharge potential for their aquifers and several districts seem to be considering a sustainable management goal. The legislature should support this trend by requiring district management plans to include a clear management goal for the aquifer, with sustainability as the preferred goal.[1] The management goal should consider both short- and long-term interests as well as the groundwater needs of the community and the environment. Using district rules to establish an overall cap on pumping can help achieve a goal of sustainability. Districts may also need authority to consider whether proposed exports would have an effect on recharge rates and to work with county officials to protect significant recharge zones.

WASTE

The definition of waste and what is considered a beneficial use of groundwater can become an issue when a district believes that one user's use of groundwater, while "beneficial" to themselves, is a detriment to other groundwater users. Section 36.001(8) of the Texas Water Code defines waste as any of the following:

- withdrawing groundwater at a rate and amount that could cause intrusion of unsuitable water into the aquifer;
- production of groundwater for non-beneficial uses;
- escape of groundwater to a non-groundwater containing strata;
- pollution of groundwater resources by the intrusion of saltwater or other matter;
- willfully or negligently causing, suffering, or allowing groundwater to escape into any watercourse or land other than that of the well owner, unless authorized by permit;
- unauthorized escape of groundwater irrigation tail-water onto land other than that of the owner of the well; or
- for water produced from an artesian well, willfully causing or knowingly permitting the water to run off the owner's land or to percolate through the stratum above which the water is found.

Section 36.001(9) defines "beneficial use" broadly, including agricultural, domestic, stock-raising, municipal, mining, industrial, commercial, recreational or pleasure purposes; use in oil, gas or mineral exploration and production; or "any other purpose that is useful and beneficial to the user."

One example of the complexities surrounding waste and beneficial use of groundwater is the growing popularity of "vanity ponds" that are created and maintained with groundwater.[17] In 2001, the Headwaters UWCD voted to deny two permits to drill wells that would produce water to fill a private 18-acre lake. One of the arguments used against the permits was that there would be an evaporation rate of 35 million gallons annually from the lake - enough water to support the needs of 3,000 rural residents. In the final analysis, the permits were denied based on the district's existing pumping limit rules, not on the definition of waste.

In some cases, districts have modified the definition of waste in their rules to include additional factors. Often, these extra provisions stem from local scenarios, like vanity ponds, where a specific practice of use infringes on other groundwater users in the vicinity. Of the districts surveyed for this report, three have expanded their definition of waste as illustrated in Table 3.

[17] "Vanity ponds" are ponds used purely for aesthetic/landscape purposes, and are often associated with new housing subdivisions.

TABLE 3. EXPANDED WASTE DEFINITIONS, SPOTLIGHTED DISTRICTS

District	Expanded Waste Definitions
Brazos Valley GCD	Rules contain two additional definitions of waste: groundwater discharged into water course for transit and loss in excess of 20 %; and potable groundwater used for secondary gas recovery.
Hill Country UWCD	Definition includes "the supply of groundwater to a surface reservoir [stock tank, lake, or other confinement] which has a capacity greater that 50,000 gallons is considered waste."
Hudspeth County UWCD No. 1	The district specifies that the operation of a deteriorated well is considered waste.

Conclusion and Recommendation: The legislature should review the current Chapter 36 definition of waste and make any modifications necessary to ensure that groundwater districts have full authority to prevent waste and to address area-specific conditions in their rules. This review should include addressing the issue of "vanity ponds" and whether freshwater should be used for oil and gas production if other sources are available.

EXPORTATION

In addition to the overall population increase in the state, the population continues to shift from rural areas to urban centers.[18] This trend has put pressure on municipalities to identify additional water supplies to meet projected demands. In some regions, this translates into an increasing demand for developing and transporting rural water resources to meet urban water needs. Around the state, municipalities and water marketers are targeting rural groundwater resources.[19]

In the 2002 State Water Plan, the TWDB issued the following major policy recommendation concerning agriculture and rural water issues:

"1. The Legislature should consider protecting rural-community access to local water resources to ensure the continued economic viability of rural Texas.

[18] Texas is an urban state; urban residents became a majority as early as 1950, and there is no indication that this will change. Texas Comptroller of Public Accounts, "The Changing Face of Texas: Texas through the Year 2026: A Report of the Comptroller's Forces of Change Project (August 1992), 21.

[19] See "Water Ranching in Texas," Texas Water Policy Update, December 2001, available at www.texaswatermatters.com/more_info and "Water Marketing," Texas Living Waters Project Issue, Paper #3, available at www.texaswatermatters.com/pdfs/water_planning_committee 3.

Water is essential to the culture, economy and environment of Texas rural communities. Groundwater resources are particularly critical to the life of many rural communities. It is the source of drinking water, of irrigation water for agricultural crops and is vital to hunting, fishing and other recreational and tourist activities that are becoming increasingly important to the economy of rural towns. For an example, the Fort Terret Formation of the Edwards Aquifer Group in Kerr County maintains the stream flow of the Guadalupe River and, in fact, 70 % of the Guadalupe River originates as spring flow from the Edwards Plateau aquifer in Kerr County. The Guadalupe River flows eastward from Kerr County through the Hill Country. Its principal tributaries are the San Marcos River, another spring-fed stream; the San Antonio River and the Comal River. The Guadalupe River and these tributaries play a significant cultural and economic function in the communities in which they flow."

Meeting reasonable municipal demand with rural water sources is likely to be part of the state's overall water management strategy, but it raises several concerns that must be addressed in the statewide water planning process. For example, exporting water out of rural areas has significant implications for the future development potential of the exporting region. Export of large amounts of water for use outside the aquifer can decrease the water available for aquifer recharge. Export proposals also raise "equity" issues questioning whether the importing area has implemented all reasonable conservation measures and fully explored other water supply strategies before importing water.

Under the rule of capture, the only areas of the state with the ability to protect their groundwater resources by managing the exportation are those within groundwater conservation districts. Chapter 36 of the Texas Water Code gives districts some authority to limit out-of-district transfer of groundwater. While a district may not deny a permit on the sole basis that water is to be exported, it may limit a permit volume based on the following factors:

- availability of water in the district and in the proposed receiving area during the period for which the water supply is requested;
- projected effect of the proposed transfer on aquifer conditions, depletion, subsidence, or effects on existing permit holders or other groundwater users within the district; and
- consistency with an approved regional water plan and certified district management plan.

Generally a district may not impose more restrictive permit conditions on exporters than on permits for in-district use, and it may not prohibit the export of groundwater if the purchase was in effect on or before June 1, 1997 and the volume has not increased since March 1997. However, the district may periodically review the volume of water transferred under an export permit and may limit the amount if any of the above factors warrant limitation. Districts may also impose a reasonable fee for processing an export application, though the fee cannot exceed the amount imposed for processing applications for in-district use.

In addition to the permit-processing fee, districts may impose an "export fee" or surcharge. This fee can be negotiated with the exporter, but if no agreement is reached it is limited by statute. For tax-based districts, the fee is limited to the district's tax rate per $100 of valuation for each 1,000 gallons of water, or $0.025 per 1,000 gallons if the district's tax rate is less than $0.025 per $100. For fee-based districts, the maximum surcharge is 50 % of the district's production fee for in-district use. (Texas Water Code § 36.122[e]).

In addition to the statutory provisions on exports, some districts have included specific provisions within their rules relating to the transfer of water out of district boundaries. Table 4 illustrates how the surveyed districts are dealing with this issue.

TABLE 4. ADDITIONAL WASTE PROVISIONS, SPOTLIGHTED DISTRICTS

District	Waste Provisions
Blanco-Pedernales GCD	The wells and transport facilities that produce groundwater for transport outside the district must have an accurate flow device that measures the daily production rate of the groundwater transported outside the district.
Brazos Valley GCD	Relies on Chapter 36 provisions.
Brewster County GCD	Extra factors that the district can use to rule on an export permit include: the availability of feasible and practicable alternative supplies to the applicant; the amount and proposed use of the transferred water; and the projected environmental and economic effects on the district.
Coastal Bend GCD	District rules are not currently in place.
Headwaters UWCD	Extra factors that may be considered by the district include availability of an alternative supply and the amount and purpose of use by the receiving area.
Hill County UWCD	Relies on Chapter 36 provisions.
Hudspeth County UWCD No. 1	The volume of allowable transfer is limited based on the recent average consumptive district-wide use of water.
Kinney County GCD	Exporter must obtain a regular permit, a historic use permit or an amendment to such a permit. A meter or measuring device must be installed on wells that are producing groundwater for transport outside the district; a fee is required; and the water must be transferred by pipe.
Panhandle GCD	In addition to the Chapter 36 provisions, the district considers the following in its assessment of the application: the anticipated effect of the proposed transportation on the quantity and quality of water available for future use outside the district; and what water conservation measures and goals the receiving entity has adopted including their time frame. The district also requires a detailed description of the entities service area including their metering and leak detection and repair program, deliver and distribution system, drought management planning efforts, etc. As part of their reporting guidelines, the district requires the filing of quarterly reports describing the volume and use of exported water.
Pineywoods GCD	Extra factors that the district can use to rule on an export permit include: the availability of feasible and practicable alternative supplies to the applicant; the amount and proposed use of the transferred water; the indirect cost and economic and social impacts associated with the proposed receiving area; and any other facts and considerations necessary for the Board to protect public health and welfare and for the conservation and management of natural resources in the district. A transfer permit is not required if the exported water is part of a product manufactured within the district, or if the groundwater will be used on property which straddles the district boundaries. Bottled water is not considered a manufactured product and is not included in this exclusion.

The creation of a Fresh Water Supply District to buy water rights and transfer water out of a groundwater district is being tested by Mesa Water, Inc, founded by T. Boone Pickens, Jr. Mesa Inc. has filed a petition with Roberts County Commissioners Court to create a Fresh Water Supply District. If the district were approved by the County Court, it would have taxing, bonding and eminent domain authority. The governing board of the district would set the rates paid by water users, set the terms on water distribution and have the right-of-way through eminent domain for the construction of pipelines, bridges and sewers through private land. Before petitioning for a Fresh Water Supply District, Mesa Inc. acquired rights to pump groundwater from 150,000 acres for sale to cities outside the district.[20] The Panhandle GCD, which covers Roberts County, has the ability to limit the production rate of water. The district established a rule of thumb that allows landowners to pump one acre-foot of water per acre of land every year.

Conclusion and Recommendation:

1) The current law does provide groundwater districts with some authority to regulate exports and to consider the effects of proposed exports on the aquifer and groundwater users within the district. A few of the districts surveyed have added certain clarifications to the basic statutory language in their rules on export permits.

However, there are several restrictions on the ability of districts to deny an export permit. Moreover, the districts' options for raising the revenue necessary to fully evaluate the potential impact, particularly of *large* export proposals, are limited. Given the increasing number of proposals to export large amounts of water, the legislature should review Section 36.122 of the Texas Water Code. Any necessary changes should be made to ensure that districts are fully equipped to analyze and respond to such proposals, to fully consider their effect on local communities, the rural environment and economy and to raise sufficient revenue to support high-quality technical studies and defend district decisions.[21] The legislature should consider giving districts broader authority with respect to export proposals that exceed a certain annual volume or constitute a certain percentage of annual district-wide pumping. In addition, the legislature should clarify what procedures the districts should follow regarding large export proposals both in providing permit applicants due process and in allowing for meaningful participation by the districts' residents .

2) Three of the districts spotlighted in this report have had to face or are expecting to face legal challenges to their rules and to the studies on which the rules, particularly pumping limits, are based. Districts outside the purview of this study have also faced serious legal challenges to their management plans. As groundwater sales activities increase across the state, districts may face increasing legal challenges to their rules and procedures. Most districts do not have the financial resources to effectively defend their actions. As the state's preferred method of controlling and managing groundwater resources, groundwater districts should have the option of being represented by or receiving legal assistance from the Texas Attorney General's Office in legal challenges involving their rules or management plans[22] or if there are uncertainties regarding their statutory authority.

[20] For more information on Mesa's groundwater pumping permit, see www.panhandlegroundwater.org or www.texaswatermatters.com/water_planning_groundwater.htm.

[21] The legislature should consider giving districts broader authority with respect to export proposals that exceed a certain annual volume or constitute a certain percentage of annual district-wide pumping

[22] Legislation creating the Houston-Galveston Subsidence District provides for that district to be represented by the Attorney General. See Sections 151.037 and 151.164(c), Texas Water Code.

Appendix - Spotlighted District Overviews

These overviews constitute general reviews of district activities. Please contact the district directly for more detailed information on their rules, regulations and activities.

Blanco-Pedernales GCD

BACKGROUND INFORMATION

The Blanco-Pedernales GCD was created through a petition process under Chapter 36 of the Texas Water Code and was approved by Blanco County voters in a January 23, 2001 confirmation election. The boundary of the district coincides with the boundary of Blanco County.

The population of the district is projected to increase from 8,413 residents in 2000 to 11,756 in 2020. Tourism, agribusiness/wholesale nursery, ranching, and hunting and fishing are the county's primary economic activities.

SPECIAL DESIGNATIONS

Blanco County is located within the Hill Country Priority Groundwater Management Area.

HYDROLOGICAL FEATURES

Blanco County has two primary watersheds: the Pedernales River, which is a tributary to the Colorado River, and Blanco River, which is a tributary to the Guadalupe River. The district lies within both the Colorado and Guadalupe River basins.

At least five known aquifers underlie Blanco County: the Trinity, Edwards-Trinity Plateau, Ellenburger, Hickory and Marble Falls. All of these aquifers provide groundwater to county residents to varying degrees. The Trinity, the Ellenburger and the Hickory aquifers supply the majority of groundwater uses within the district. In 2000, current Blanco County groundwater demand was an estimated 2,530 acre-feet.

SUSTAINABILITY

The district's policy is not to mine the aquifer. At this time, the district is relying on groundwater availability figures specified in the Region K Regional Water Plan and the TWDB groundwater availability model for the Trinity aquifer. The district will consider revising its groundwater availability figures as new data becomes available. It is anticipated that there will be a scarcity of groundwater in some areas of the county, particularly the southern end, where population growth in subdivisions will increase demand. The district will use its current groundwater management strategies to address potential issues including: regulating well drilling; groundwater production; proposals to transfer groundwater out of the district; developing drought contingency plans; and identifying critical groundwater depletion areas.

WELL SPACING

Well spacing rules were adopted by the directors in February 2002, and are more stringent than the baseline spacing rules specified by the Texas Administrative Code. For this district, well spacing is related to the pumping capability of individual wells. For example, if a well is capable of pumping up to 17.36 gallons per minute, the spacing required between wells is 100 feet and the proposed well must be 50 feet from the property line. If the well is capable of pumping between 17.36 gallons and 200 gallons per

minute, the spacing required between an existing well and a proposed well is 300 feet, and the proposed well must be 150 feet from the property line. As the pumping capacity increases, there is a corresponding increase in the required number of feet between existing and proposed wells and the required setback from the property line. The district will also cooperate with Blanco County officials to ensure that proposed new wells will be drilled in compliance with current minimum tract sizes or other tract or lot requirements or restrictions imposed by Blanco County.

PRODUCTION LIMITS

The district's rules require all non-exempt wells to obtain an operating permit with an annual maximum groundwater production volume. Unless otherwise specified by the district as a special permit condition, operating permits issued by the district are valid for a period of three years. The General Manager automatically renews the permit at the end of each permit term unless he determines that the permit holder is not in compliance with permit conditions or district rules. The district has not denied any well operating permits. The Board may also set a maximum annual total production volume for a Designated Critical Groundwater Depletion area and set well production limits for exempt and nonexempt wells in that area. The Board has not yet designated any Critical Groundwater Depletion areas.

WASTE

The district relies on the waste definition outlined in Chapter 36 of the Texas Water Code. The district requires all permittees to have a groundwater conservation plan on file at the district. Each year a permittee must file a report describing the amount of water produced and its anticipated use.

METERING

The district does not require meters on wells under normal circumstances. However, the district's rules provide that "During hydrological studies, pump tests, or in areas designated by the Board as Critical Groundwater Depletion areas, the Board may require production-monitoring devices to be installed on nonexempt wells at permittee's expense."

EXPORT OF WATER OUT OF DISTRICT

The district's procedures for assessing a proposed export permit are the same as those outlined in the Texas Water Code, Chapter 36. In addition to normal well reporting procedures, wells and transport facilities that produce and transport groundwater to an area outside the district must have an accurate flow measuring device that measures the daily production of the transported groundwater. An owner of a well producing groundwater that is transported outside of the district must get a transport permit unless the well is exempt from permitting. The District may charge a reasonable transport fee. The district has not received any requests to export groundwater outside the district.

DISTRICT ACTIVITIES

The district is active in well registration, well inspections, aquifer monitoring, public education, interagency cooperative programs, water quality sampling and testing, and other typical groundwater district programs and activities.

FUNDING

The Blanco-Pedernales GCD is funded by an ad valorem property tax currently set at $0.03 per $100 value. The district's ad valorem tax cap of $0.05 per $100 valuation was approved by voters in the January 2001 election that confirmed the creation of the district. There are also application fees assessed for registering and permitting wells drilled after February 11, 2002. The annual budget is approximately $150,000.

EDUCATION

Education goals are set forth in the management plan and state that the staff is responsible for providing articles on water conservation, drought, and efficient use of groundwater to local newspapers on a yearly basis and that literature will be available to the public upon request. Staff is to make at least two public presentations per year.

CONTACT INFORMATION

Ronald Fieseler, General Manager
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Johnson City, TX 78636
830-868-9196.
Email: manager@blancocountygroundwater.org

Rules: Blanco-Pedernales Groundwater Conservation District Rules, adopted February 2002.
Management Plan: Adopted October 2002.

Brazos Valley GCD

BACKGROUND INFORMATION

The Brazos Valley GCD was created by the legislature in 2001. The district was confirmed in a November 2002 election. The district shares its boundary with Robertson and Brazos Counties.

Both counties are projected to experience moderate growth rates over the next 20 years. Brazos County, with a 2000 population of approximately 152,000, is projected to reach over 222,000 by the year 2020. In comparison, Roberts County is expected to increase from 16,000 to over 19,000. The economic base for the two counties includes education, agribusiness, small manufacturing, government services and tourism.

SPECIAL DESIGNATIONS

Brazos Valley GCD in not located within a priority groundwater management area.

HYDROLOGICAL FEATURES

In 1997, over 93 % of the water used in Brazos County came from groundwater resources. That same year in Roberts County, groundwater met 87 % of the county's water needs. The district regulates production from the Carrizo-Wilcox, including the Simsboro, and the Brazos River Alluvium aquifers.

SUSTAINABILITY

Groundwater availability in the district is currently based on TWDB investigations. The district is working to establish their management strategy. They have hired a hydrologist and have appointed a citizens advisory board to help them develop their strategy.

WELL SPACING

The district is currently redrafting their spacing requirements. The restrictions in their current draft rules include: a new well may not be drilled within 50 feet from the property line; for new wells drilled in the Simsboro aquifer, spacing must be at least one foot per 2 gallon per minute (gpm) pumping capacity; and for new non-Simsboro wells, spacing must be at least two feet per 1 gpm pumping capacity. There are no spacing requirements for wells completed in the Brazos River Alluvium.

PRODUCTION LIMITS

The district is currently deciding their management strategy for groundwater resources. They are considering either straight production limits, more of a correlative rights system or some aggregate of both strategies.

WASTE

The district's draft rules include two extra provisions defining waste: groundwater discharged into watercourse for transit and loss in excess of 20 %; and potable groundwater cannot be used for secondary hydrocarbon recovery.

METERING

The draft rules do not include provisions for well metering.

EXPORT OF WATER OUT OF DISTRICT

The draft rules include those provisions outlined in Chapter 36.

DISTRICT ACTIVITIES

The district has hired a hydrologist and has been operating on a temporary basis since 1999. They have appointed a citizens advisory board, which is helping to develop a management strategy. The district has not begun to issue permits.

The draft rules specifically state that it is a violation of the rules to pump greater than the authorized volume. The rules also allow the Board to charge an excess pumpage fee.

FUNDING

The board annually sets a water use (production) fee for nonexempt wells. The district has been charging user fees for the last two years to help cover costs associated with setup and the confirmation election. The fee is currently $0.02 per 1,000 gallons of water pumped.

The draft rules would cap this fee at $0.0425 per 1,000 gallons for domestic and industrial use, and $0.25 for irrigation. The district has not yet charged agriculture or irrigation users the fee. The district also raised the exempt wells limit to 50,000 gallons per day (as opposed to the standard 25,000) so that domestic users would not have to pay fees, yet would have the benefit of the district.

The district is not authorized to impose taxes. The amount of bonds and notes issued by the district may not exceed $500,000 of total indebtedness at any time.

EDUCATION

The district is still in the process of establishing its public education programs. It expects that education will form a large component of its operations. Some of the educational activities that are being considered include a school education program, free water sampling efforts, and free oil and grease disposal.

SPECIAL ISSUES

The Brazos Valley Water Alliance, which was formed by two Brazos County residents, is currently soliciting groundwater leases in the Brazos Valley area. The alliance is focusing their leasing effort on Brazos, Robertson, Burleson, Lee, Milan, and Leon Counties. They would like to lease 1 million acres in

the area. As of July 2002, they had leased 50,000 acres from approximately 200 property owners. ("Water rich Brazos Valley attracts thirsty marketers," The Bryan-College Station Eagle, 07/28/02)

CONTACT INFORMATION

Bill Riley, General Manager
Wendi Gibson
P.O. Box 10051
College Station, Texas 77842
979-764-3491

Rules: Currently in draft format. The district is working to finalize its rules as it develops its management strategy.

Management Plan: The district was not permitted to draft their management plan until they had been confirmed. The district has until November 2004 to develop their management plan; but is working to do so as soon as possible.

Brewster County GCD

BACKGROUND INFORMATION

Brewster County GCD was created during the 77th legislative session in 2001 and was confirmed in an election held on November 6, 2001. The district boundaries coincide with Brewster County boundaries.

The economy in Brewster County is based on ranching, agriculture, tourism, and Sul Ross University. The county's population is projected to increase from approximately 8,800 in 2000 to over 14,000 by 2020.

SPECIAL DESIGNATION

Brewster County GCD in not located within a priority groundwater management area.

HYDROLOGICAL FEATURES

In 1997, over 92 % of the water use in Brewster County was supplied by groundwater. Four aquifers underlie the county - Igneous, Edwards-Trinity (Plateau), Marathon and Capitan Reef Complex aquifers. In addition to these major sources, there are additional groundwater resources from other or related aquifers available throughout the county.

SUSTAINABILITY

The mission of the district is to "manage, protect, and conserve groundwater resources of the county while protecting private property rights and promoting constructive and sustainable development in the county." The district amended the statutorily-mandated minimum management goal of providing for the most efficient use of groundwater to include providing for the long-term sustainability and conservation of groundwater resources.

The district has estimates of recharge and storage capacity for each of the primary aquifers that supply groundwater to the county. These numbers were used to establish well spacing and production limits.

WELL SPACING

New well spacing requirements are based on production levels of nearby existing wells. If the existing well produces less than 1,000 gallons per minute (gpm), the new well must be spaced one foot away for each gallon per minute of production. The spacing requirement if the existing well produces more than 1,000 gpm is 1,000 feet plus 0.5 feet extra for each gpm over 1,000 gpm.

PRODUCTION LIMITS

The management plan provides that the district may, in order to fulfill its mission, require reductions of groundwater withdrawals from commercial or non-exempt wells. The plan also outlines the district's power to amend or revoke any permit after notice and hearing.

Landowners may not produce more than 0.5 acre-feet of water per year per acre of land. There is an exception: if the well is producing water to support domestic, residential, livestock, wildlife or poultry and the person owns less than four acres, it may produce up to two acre-feet per acre.

The district rules include a landowner petition process whereby landowners can petition the district to review a pumping permit if they can prove a draw-down of the water table, a reduction of artesian pressure, subsidence, interference between wells, a degradation of water quality or waste.

The district also offers contiguous landowners the option of establishing joint production limits by contracting between themselves or with the district.

WASTE

Brewster County GCD relies on the definition of waste in Chapter 36 of the Texas Water Code.

METERING

This district does not require wells to be metered.

EXPORT OF WATER OUT OF DISTRICT

The district's rules contain additional provisions that enhance the district's ability to manage the exportation of groundwater. The district may consider the following in making its determination on whether to restrict or impose a fee on a transfer of groundwater out of the district:

- the availability of feasible and practicable alternative supplies to the applicant proposing the transfer;
- the amount and proposed use of the transferred water in the receiving area; and
- the projected environmental and economic effects of the proposed transfer on the district.

DISTRICT ACTIVITIES

The district is still in the process of registering wells in the county.

FUNDING

The district gets funding from production fees (drilling permit deposits and operating permits), export fees, fines, contributions from Brewster County and through grants and loans.

Production fees are currently set at $1 per acre-foot of water used to support agricultural uses and $10 per acre-feet for water used to support all other uses.

The district does not tax, though it is provided with taxing authority in its enabling legislation.

EDUCATION

One of the guiding principles outlined in the management plan is increasing public awareness and education of local groundwater resources and issues. While not currently specified in the management plan, the district plans to support this principle by producing newsletters, newspaper articles and by making public presentations.

CONTACT INFORMATION

Tom Beard
P.O. Box 465
Alpine, Texas 79831
915-364-2244

Rules: Rules of the Brewster County Groundwater Conservation District, adopted August 12, 2002.

Management Plan: Management Plan of the Brewster County Groundwater Conservation District. Adopted January 31, 2002.

Coastal Bend GCD

BACKGROUND INFORMATION

The Coastal Bend GCD was created during the 2001 legislative session and was confirmed by popular vote in November 2001. The boundaries of the district are contiguous with those of Wharton County.

Wharton County is projected to experience only a moderate amount of population growth - from approximately 41,000 residents in 2000 to approximately 50,000 in 2020. The economy of the area is based on oil, sulphur and other minerals, agribusiness, hunting leases and varied manufacturing.

SPECIAL DESIGNATIONS

Coastal Bend GCD in not located within a priority groundwater management area.

HYDROLOGICAL FEATURES

In 1997, approximately 54 % of the water used in the county was groundwater. Of this total, over 80 % was used to meet irrigation demands. The district is underlain by the Gulf Coast aquifer.

SUSTAINABILITY

The district has not firmly established the volume of available groundwater within the district boundaries at this time. It is currently in the process of contracting assistance to help identify available technical information and resources and establish a well monitoring program. The district has not yet set a management goal.

WELL SPACING

The district is currently working to draft their rules and management plan. Once information on groundwater availability is developed (see above), it will be used to set spacing limitations.

PRODUCTION LIMITS

The district is currently working to draft their rules and management plan. The groundwater availability information will be used in setting any production limits.

WASTE

The district is currently working to draft their rules and management plan.

METERING

The district is currently working to draft their rules and management plan.

EXPORT OF WATER OUT OF DISTRICT

The district is currently working to draft their rules and management plan.

DISTRICT ACTIVITIES

The district is currently working to draft their rules and management plan.

FUNDING

The district began collecting taxes in the fall of 2002 at a rate of $0.02 per $100 valuation. The district is not currently charging a production fee. Through their enabling legislation, fees can be imposed up to a maximum of $10 per acre-foot for non-agricultural users and $1 per acre-foot for agricultural users. The district's approximate annual budget is $307,000.

EDUCATION

The district is still in the formation process. District representatives currently speak at public meetings when possible, and are working with the TAES to educate the public on abandoned and unplugged wells.

SPECIAL ISSUES

Puretex
LCRA-SAWS project

CONTACT INFORMATION

Ron Gertson, President
1017 N. Alabama
P.O. Box 341
Wharton, Texas 77488
979-531-1412
http://www.cbgcd.com/index.htm

Rules: The district is currently drafting rules.

Management Plan: The district is required to finalize their management plan by November 2003. They are currently drafting the plan and expect it to be complete in Spring 2003.

Headwaters UWCD

BACKGROUND INFORMATION

The Texas Legislature created the Headwaters UWCD in 1991. The boundaries of the district correspond with the boundaries of Kerr County.

Kerr County is projected to experience an increase in population from about 43,600 residents in 2000 to 62,660 in 2020. The economy is based on tourism, retirees, medical services, agribusiness (cattle, sheep, goats), hunting, recreation and light manufacturing.

SPECIAL DESIGNATION

Kerr County is located within a priority groundwater management area.

HYDROLOGICAL FEATURES

The principle surface water source for Kerr County is the Upper Guadalupe River Basin. However, according to the Headwaters Management Plan, the river is not a "sustainable long term source for municipal and industrial use when drought conditions or conservation plans are considered."

The Trinity aquifer is the major source of groundwater for the county. The Fort Terrett Formation of the Edwards Group provides some groundwater for domestic and stock use, but its real value is that it helps maintains stream flow of the Guadalupe River. The groundwater of the Edwards-Trinity aquifer discharges as springs that result in the headwaters of the Guadalupe River. Approximately half of the 8,825 acre-feet of water used by the county in 1997 was supplied by groundwater.

SUSTAINABILITY

Due to low aquifer recharge rates, increased demand and densely-located public water system wells, the district predicts that the Trinity aquifer will not be able to supply the projected long-term demands of the county.

The district relies on several studies to determine the estimated water supply and water demands for the district. The district accepts the findings of these reports that there is 10,596 acre-feet of water supply available within the district. The district estimates the following projected demands: 10,155 acre-feet for the year 2000; 11,127 acre-feet for the year 2010; 12,033 acre-feet for the year 2020; 13,189 acre-feet for the year 2030; and 14,331 acre-feet for the year 2040.

To meet future water demands, the district is relying on production limits, encouragement of conjunctive use and conservation stratagies.

WELL SPACING

The district uses state minimums for spacing from possible sources of contamination and requires that wells be located 75 feet from all property lines. In evaluating a well permit application, the district will "consider the public benefit against individual hardship after considering all appropriate testimony."

PRODUCTION LIMITS

Production limits are based on sustainable consumption management philosophy. In April 2001, the Headwaters UWCD established pumping limits based on estimated recharge for both the Middle and Lower Trinity aquifers. Production limits have not been implemented for the Edwards-Trinity Plateau portion of the aquifer. The district is waiting for the results of the TWDB's groundwater modeling project before establishing production limits. Once established, the district will adopt rules to regulate groundwater withdrawals for this portion of the aquifer by means of well-spacing and production limits.

WASTE

The district relies on the waste definition provided in Chapter 36 of the Texas Water Code with the following exception: If you have a nonexempt well, waste may be allowed in an amount not to exceed 15 % of the district's production limits. This rule shall apply only to the introduction of groundwater into surface impoundment of any nature. To prevent evaporation, groundwater transported (outside or inside the district) a distance of 1/2 mile from the well must be transported by pipe.

As part if its management plan, the district submits an annual report on wasteful water practices. To help prevent contamination, the district has a well water monitoring and sampling program.

METERING

The Headwaters UWCD requires an annual ground water production report for permitted wells (25,000 +GPD). The owner of a permitted well is required to install a district-approved metering device prior to beginning production.

EXPORT OF WATER OUT OF DISTRICT

Before issuing or denying a permit to export groundwater out of the district, the district may require a public hearing. To evaluate an export permit request, the district will consider the following in addition to Chapter 36 provisions: availability of an alternative supply; and the amount and purpose of use by the receiving area.

The export permit must specify the amount of water to be transferred and the period during which the transfer will take place. If the groundwater is to be transported (outside or inside the district) a distance of 1/2 mile from the well, it must be transported by pipe.

DISTRICT ACTIVITIES

In 2001, the district voted to deny two well permit applications for pumping from the Lower Trinity aquifer. The water was to be used to fill a private 18-acre lake. One of the arguments used against the permits was that there would be an evaporation rate of 35 million gallons annually from the pond (waste) - enough water to meet the needs of 3,000 rural residents. However, the district used existing pumping limit rules for this part of the Trinity aquifer to deny the permit, not a definition of waste. The district is preparing a ground/surface water-modeling program. By January 2004, it will also establish a spring monitoring program in order to assess the impacts to groundwater from the Edwards-Trinity aquifer.

FUNDING

The district is financed by an ad valorem property tax of $0.01 per $100 valuation. The annual budget is $268,000.

EDUCATION

The district engages in public presentations and distributes literature. The district also assists Kerr County's Commissioners Court through review of the water availability documentation provided by subdivision developers. Education goals and objectives are stated in its management plan.

CONTACT INFORMATION

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Kerrville, Tx 78028
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Rules: Headwaters Underground Water Conservation District, Rules. Last amended December 11.
Management Plan: Headwaters Underground Water Conservation District Management Plan in Compliance with SB1. Adopted September 1998.

Hill Country UWCD

BACKGROUND INFORMATION

The Hill Country UWCD was created by the legislature in 1987. The boundaries of the district coincide with the boundaries of Gillespie County. The population of the county is projected to increase from about 20,800 residents in 2000 to around 26,400 in 2020. This traditional agricultural county is also moving towards an economy based on tourism, wildlife viewing and hunting.

SPECIAL DESIGNATION

The district is in the Hill Country Priority Groundwater Management Area.

HYDROLOGICAL FEATURES

The district is located within the Pedernales River Basin, which is tributary to the Colorado River. The district overlays four aquifers: the Edwards, the Hensell, the Ellenburger, and the Hickory aquifer. In 1997, groundwater accounted for over 90 % of the county's total water use of 8,260 acre-feet.

SUSTAINABILITY

The district has determined the sustainability of the aquifers through a computer program - Surfer and moving modes - that create gridded surfaces representative of the aquifer water level and the aquifer bottom. The water saturation level is determined for each grid within the aquifer. The district has also used the TWDB's 1997 "Water for Texas, Today and Tomorrow" report to determine available groundwater supply.

Countywide demand in 2050 is projected to be 10,500 acre-feet per year. The estimated volume of groundwater availability at that time is projected to be 12,500 feet per year, though localized imbalances may occur in some areas with particularly high growth rates, such as the geographic area over the Hensell aquifer. This area extends across the county, except along the northern and northeastern sections.

The district is considering regulating production from permitted wells in order to minimize draw-down. The district's rules provide that the board may identify "Critical Groundwater Depletion Areas," deny new drilling permits, set production limits or require permitted wells to install meters.

WELL SPACING

The district's rules provide that wells must be located a minimum of 100 feet from any source of pollution. Well spacing is based on actual pumping capacity as illustrated below:

Actual pumping	Dist. from existing well	Dist. from property line
17.36-200 gpm	300 ft	100 ft
200-400 gpm	750 ft	200 ft
400-800 gpm	1,200 ft	400 ft
800+ gpm	1,500 ft	400 ft

The installation of closely spaced wells, or cluster wells, may be permitted based on certain criteria.

PRODUCTION LIMITS

The district's management plan states that it must regulate production from permitted wells if the Board finds that groundwater within the district is experiencing a draw-down of water table or reduction of artesian pressure. In addition, the district may designate a Critical Groundwater Depletion Area if there is evidence that withdrawals are affecting the water table or reducing artesian pressure, and/or in consideration of local climate conditions.

Production levels are also controlled through well spacing and size of tracts. For a tract of land larger than 10 acres, one acre-foot of water per acre of land per year is allowed to be withdrawn annually. For a tract less than 10 acres, 0.5 acre-feet per acre of land per year is allowed. The Board may lower production limits if depletion of the aquifer has been determined or the Board may increase the limit if test wells show that higher withdrawals are feasible.

WASTE

The district's definition of waste includes the following in addition to the basic Texas Water Code Chapter 36 definitions: supply of groundwater to a surface reservoir (stock tank, lake or other confinement) which has a capacity greater than 50,000 gallons; groundwater pumped for industrial use or application in excess of that quantity, if any, recognized by the industry according to its SIC classification as being the maximum amount of water necessary to efficiently meet the demands for the particular use or application; and groundwater used for heating or cooling that is allowed to drain onto the land surface as tail water and is not re-circulated back to the aquifer.

METERING

Permitted wells within a Critical Groundwater Depletion area must be equipped with a meter or measuring device to be paid for by the well owner.

EXPORT OF WATER OUT OF DISTRICT

The district rules specify a number of conditions that must be met before groundwater may be transferred out of the district, including specifications for the conveyance system. The district specifically will not adopt rules to prohibit the export of water out of the district, but will treat a permit for transference in the same manner it would consider any other permit.

DISTRICT ACTIVITIES

In the last few years, the district has not denied a well permit or had a request to export water out of district. The district has a well monitoring and data collection program.

FUNDING

The district is funded by an ad valorem tax at the rate of $0.0089 per $100 of assessed valuation. The tax cap is consistent with Chapter 36 of the Texas Water Code. Permit application fees contribute to the budget as well. The district has an annual budget of $176,000.

EDUCATION

The Hill Country UWCD publishes a newsletter, participates in public speaking engagements and provides water conservation packets on request.

CONTACT INFORMATION

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Rules: Hill Country Underground Water Conservation District, District Rules, adopted March 2002.

Management Plan: Hill County Underground Water Conservation District, Management Plan.

Hudspeth County UWCD No. 1

BACKGROUND INFORMATION

Though it was created by the Hudspeth County Commissioners' Court in 1955, the Hudspeth County UWCD has been relatively inactive until the last few years, when it began to update its operations. The district is located in northeast Hudspeth County along the border of New Mexico and Culberson County.

Hudspeth County UWCD's most recent rules were adopted in May 2002. The rules contained both transition rules that will be in effect until December 2002 and permanent rules that take effect in January 2003.

The population of the county as a whole is projected to experience only a moderate increase over the next 20 years, from about 3,300 residents in 2000 to 3,900 in 2020. The economy of the county is based on agribusiness, mining, tourism and hunting leases.

SPECIAL DESIGNATION

Hudspeth County UWCD No. 1 in not located within a priority groundwater management area.

HYDROLOGICAL FEATURES

The district covers most of Bone Spring-Victorio Peak aquifer, which is recharged primarily in the Sacramento mountain range in southern New Mexico. According to the district's management plan, estimated consumptive groundwater use in the district was 75,600 acre-feet in 2001. The district management plan indicates that a long-term sustainable consumptive use rate for this aquifer is on the order of 63,000 acre-feet per year.

SUSTAINABILITY

The district's management plan states that groundwater production will be managed in a sustainable manner, specifically balancing permitted withdrawals with long-term recharge. To help achieve this goal, the district has implemented mandatory metering of all nonexempt wells. This metering will begin in 2003. The district has also established a series of recorder wells in order to monitor the effects of pumping and recharge within the district's boundaries. This is important because even though the volume of groundwater available for withdrawals in the district was initially quantified by TWDB investigations, there are a number of different estimations of available groundwater and volume of recharge to the aquifer.

WELL SPACING

New wells cannot be located less than 50 feet from a property line.

PRODUCTION LIMITS

In defining production limits, the district distinguishes between wells used for irrigation purposes and those with other uses. For existing nonexempt wells (pumping greater than 25,000 gallons per day) used

for purposes other than irrigation, production is limited to the maximum volume produced and beneficially used from the well in any one calendar year from 1992 to 2002 (defined as the "existing and historical use period"). For irrigation wells, the permitted amount is based on a variable rate that is governed by current groundwater level conditions and the acreage of land currently irrigated or irrigated during the historical period (1992 to 2002). The variable rate currently being used by the district is four acre-feet per acre of land per year.

Special provisions are included in the rules to cover land that is currently enrolled in the U.S. Department of Agriculture's Conservation Reserve Program (CRP). For lands that have been out of production during the existing and historical use period, production permit limits are based on the acreage of land that was in agricultural production for at least two of the five years immediately prior to the land entering the CRP program.

All new and existing exempt wells must be registered with the district.

WASTE

An additional definition of waste included in the district's rules is the operation of a deteriorated well.

METERING

Metering of all nonexempt wells will be mandatory beginning in 2003.

EXPORT OF WATER OUT OF DISTRICT

The volume of allowable export of district is limited based on the recent average consumptive district-wide use of water.

DISTRICT ACTIVITIES

Validation permits are being issued, beginning in 2002. If a user overpumps during the first year of the permit, they will have to cut back their withdrawals to compensate over the second year, under criteria established by the district's rules. The district will make a determination of the amount available for pumping every two years.

FUNDING

The district has the ability to charge fees related to administrative services exportation of water out of the district, permit charges and to levy taxes. The district is currently in the process of establishing validation permits for all existing and historically pumped wells. These permit validation fees, along with district taxes are currently the main source of income for the district. The tax rate cannot exceed $0.50 per $100 valuation. The current tax rate is $0.26 per $100 assessed valuation and the annual budget is $65,000.

EDUCATION

The district has "field days" where vendors of irrigation water conservation technologies are invited to demonstrate how such technologies (drip irrigation, etc.) work in practice. The district also authors one or two water conservation news articles each year.

CONTACT INFORMATION

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Rules: Rules of the Hudspeth County Underground Water Conservation District No. 1, May 31, 2002.

Management Plan: Hudspeth County Underground Water Conservation District No. 1 Management Plan. Adopted March 19, 2002.

Kinney County GCD

BACKGROUND INFORMATION

The Kinney County GCD was created with Chapter 36 powers by the legislature in 2001. It was confirmed and given taxing powers by the voters in 2002. The boundaries of the district are the boundaries of Kinney County.

The population of the district is projected to increase from about 3,400 residents in 2000 to 4,900 in 2020. Agribusiness, government services, hunting and tourism form the basis of Kinney County's economy.

SPECIAL DESIGNATIONS

Kinney County is not located within a priority groundwater management area.

HYDROLOGICAL FEATURES

The Edwards-Trinity aquifer is the source of groundwater for the county. In 1997, approximately 99 % of the 8,552 acre-feet of water used in Kinney County was groundwater.

SUSTAINABILITY

No later than January 1, 2005, the district shall develop groundwater management zones based on the TWDB's groundwater availability model, information regarding saturation rates, and other pertinent information that will determine the amount of recharge available for withdrawal in each management zone. These zones will serve as areas for which the district shall determine water availability, authorize total production, implement proportional reduction of production among classes of permit holders, and within which the district shall allow the transfer of the right to produce groundwater as set forth in the rules. The district will establish proportional adjustment regulations to alter the amount of production allowed in a management zone.

At this time, for new permits, there is a cap of two acre-feet per acre of land. All nonexempt existing wells must demonstrate historical use, not to exceed five acre-feet of water per acre of land.

WELL SPACING

All new wells must comply with spacing and location requirements established under the Texas Water Well Drillers and Pump Installers administration rules found in Title 16, Part 4, Chapter 76 of the Texas Administrative Code.

PRODUCTION LIMITS

No later than January 1, 2005, the district shall develop groundwater management zones based on the TWDB's groundwater availability model, information regarding saturation rates and other pertinent information that will determine the amount of recharge available for withdrawal in each management zone. The Board may establish proportional adjustment regulation to alter the amount of production allowed in a management zone. The district shall limit the quantity of groundwater produced under a

Historic Use permit pursuant to Chapter 36 of the Water Code and a Regular permit pursuant to Chapter 36. However, the quantity shall not exceed two acre-feet per acre of contiguous land designated in the permit. For nonexempt wells, the quantity shall not exceed five acre-feet per acre. The district shall limit production on the Edwards or Edwards-Trinity aquifers, and limit production on non-Edwards or non-Edwards-Trinity aquifer.

WASTE

The district's definition of waste is consistent with Chapter 36 of the Texas Water Code.

METERING

Permitted wells are required to be metered.

EXPORT OF WATER OUT OF DISTRICT

A person who wishes to produce groundwater from a registered well and transport outside the district must obtain a regular permit, a historic use permit or amendment to such a permit. The groundwater must be transferred by pipe. A groundwater transportation fee will be required and a meter or alternative measuring devise must be installed on all wells that will be used for the production of water to be transferred out of the district.

DISTRICT ACTIVITIES

The district has only been operation since January 12, 2002 and has not denied or issued any permits. At the time of this writing, the district is revising some of its rules. The district has a well monitoring and data collection program.

FUNDING

The district is funded by an ad valorem tax at the rate of $0.05 per $100. Well permit application fees and all applicable fees contribute to the budget. The annual budget for the district is $60,000 - $67,000.

EDUCATION

The management plan has not yet been developed.

SPECIAL ISSUES

The transfer of groundwater out of the district is an important issue being faced by the district and the residents of the county.

CONTACT INFORMATION

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830-563-2462

Rules: Adopted October 2002 but are being revised.

Management Plan: As of January 2, 2003 has not been adopted.

Panhandle GCD

BACKGROUND INFORMATION

The Panhandle GCD was created by the legislature in 1955. Its boundaries encompass Wheeler, Roberts, Gray, Donley and Carson counties, and portions of Potter, Armstrong, Hutchinson, and Hemphill counties.

The economy of the region is dominated by agriculture and petrochemical production. Population estimates from the 2000 Census show approximately 155,000 residents in the district. Current estimations predict a steady 1 to 2 % annual increase in the area's population.

SPECIAL DESIGNATIONS

Panhandle GCD is not located within a priority groundwater management area.

HYDROLOGICAL FEATURES

The district is located within both the Canadian River and Red River watershed basins. There are two main surface water sources, Lake Meredith and Lake Greenbelt, which provide much of the municipal water needs in the districts.

The primary source of groundwater in the district is the Ogallala aquifer. Minor aquifers that also provide water to the area include the Dockum and Whitehorse. The rate of recharge of the aquifer is low and is not sufficient to meet the current water needs of the district, thus the aquifer is being "mined" i.e. pumped at a rate faster than it is being recharged. There are also two minor aquifers within the district boundaries: the Seymour and the Blaine.

SUSTAINABILITY

The district has an overall management goal of maintaining an acceptable rate of decline in the volume of water available in the aquifer. This goal was established in an effort to balance economic viability and existing needs with the need to ensure a viable future supply. The district's current management goal provides that at least 50 % of the current water supplies will be available for withdrawal 50 years from now, using 1998 saturated thickness as a benchmark.

Groundwater availability estimates are based on historical data, available datasets, and TWDB published estimates of recharge and availability rates.

WELL SPACING

Minimum spacing requirements, both from existing wells and property lines, are based on the capacity of the well. The rules also limit the number of wells per section (160 acres) based on pumping capacity.

PRODUCTION LIMITS

Along with its acceptable decline rate, the district has established a depletion rule. This rule outlines the steps the district will take if pumping withdrawals in a given area reduce the volume of available water at a greater rate than the acceptable decline rate. If this occurs in an area for two consecutive years, the district can declare a "Depletion Study Area." This designation involves more intensive monitoring of

area wells. If it is determined that pumping in the Depletion Study Area is exceeding the acceptable decline rate, the district may then delineate the area as a "Strategic Conservation Depletion Area," and increase monitoring through metering of wells and establish pumping limitations in order to return the area to the acceptable decline rate. The district is currently in the process of establishing a Depletion Study Area which should be in place by the summer of 2003.

The district also has provisions for issuing High Impact Production Permits for pumping more than one acre-feet per acre of developed land per year. This provision does not apply to wells that are exempt through TWC§ 36.117 (domestic and livestock/poultry uses on tracts of land greater than 10 acres that are incapable of producing more than 25,000 gallons a day).

WASTE

The district uses the waste definitions from Chapter 36 of the Texas Water Code.

METERING

The district does not currently require metering of wells. However, if an area becomes designated as a Depletion Study Area, it may be subject to metering (see above).

EXPORT OF WATER OUT OF DISTRICT

In addition to the Chapter 36 provisions, the district considers the following in its assessment of the application: the anticipated effect of the proposed transportation on the quantity and quality of water available for future use outside the district; what water conservation measures and goals the receiving entity has adopted and their time frame. The district also requires a detailed description of the entities service area including their metering and leak detection and repair program, delivery and distribution system, their drought management planning efforts, etc. As part of their reporting guidelines, the district requires the filing of quarterly reports describing the volume and use of exported water.

In May 2002, Mesa Water Inc. was granted a permit to pump approximately 24,000 acre-feet of water. The permit is conditional in that Mesa Water Inc. has five years to designate a user, and the place and purpose of use or the permit expires. Potential customers for Mesa are the cities of Fort Worth, Dallas, San Antonio, and maybe even the state of New Mexico. Mesa has also initiated efforts to create a Fresh Water Supply District with powers of condemnation.

DISTRICT ACTIVITIES

The district has a well monitoring program involving 750 wells which they measure annually. They also have a water quality program which includes 350 wells. The district sponsors a number of other activities including agricultural water conservation equipment loans, sprinkler evaluations, and assistance with city water assessments.

FUNDING

The district requires a $100.00 deposit for well permit applications, with a maximum permit fee of $200 per well. The current ad valorem tax rate for the district is $0.015 per $100 valuation. The district has a taxation cap of $0.05 per $100 valuation. Its annual budget is approximately $1,229,900.

EDUCATION

The district's management plan includes disseminating educational information on the efficient use of water resources. The district has committed to expanding its groundwater conservation educational program as part of the management plan. There are 46 public schools within the district's boundaries, and 93 % of them have received educational conservation programs from the district. The district has also initiated a college scholarship program.

In addition to outreach to schools and civic organizations, the district produces water conservation literature, publishes a quarterly newsletter entitled "Panhandle Water News" and hosts a website.

CONTACT INFORMATION

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Rules: Panhandle GCD Rules, March 1998.

Management Plan: Panhandle Ground Water Conservation District Management Plan. Adopted May 1998.

Pineywoods GCD

BACKGROUND INFORMATION

Pineywoods GCD was created by the legislature in 2001 and confirmed in November of that same year. The district boundaries coincide with the boundaries of Angelina and Nacagdoches Counties.

Angelina and Nacogdoches Counties combined have a current population of approximately 140,000 people. Projected population for 2020 is approximately 189,500 residents. The economic base for the two counties includes agribusiness, timber, manufacturing, education and tourism.

SPECIAL DESIGNATIONS

Pineywoods GCD is not located within a priority groundwater management area.

HYDROLOGICAL FEATURES

In 1997, groundwater accounted for 70 % of the 47,823 acre-feet of water used in the two counties. These withdrawals are supported, in large part, by the Carrizo-Wilcox aquifer.

SUSTAINABILITY

Water availability estimations are currently based on previous TWDB investigations. Based on the estimated volume, the district feels current pumping rates are within parameters which can be supported by the aquifer. The district is awaiting the results of the TWDB groundwater availability model to make a more accurate assesment.

WELL SPACING

With exceptions, new wells must be drilled at least 150 feet from the property boundary. Through its rules, the district also reserves the right to limit the number of wells per tract of land and set minimum spacing requirements between wells.

PRODUCTION LIMITS

The district has not established production limits. It currently evaluates permit applications based on the requested production rate on a case-by-case basis.

WASTE

The district relies on the waste definition outlined in Chapter 36 of the Texas Water Code.

METERING

The district requires metering of all nonexempt (those capable of producing more than 25,000 gallons per day) wells.

EXPORT OF WATER OUT OF DISTRICT

The district rules contain additional provisions that enhance the district's ability to manage the exportation of groundwater out of the district. The district may consider the following in making its determination of whether to restrict or impose a fee on a transfer of groundwater out of the district: the availability of feasible and practicable alternative supplies to the applicant proposing the transfer; the amount and proposed use of the transferred water in the receiving area; the indirect cost and economic and social impacts associated with the proposed receiving area; and other facts and considerations deemed necessary by the Board for the protection of the public's health and welfare and conservation and management of natural resources in the district.

A transfer permit is not required if the exported water is part of a product manufactured within the district, or if the groundwater will be used on property which straddles the district's boundaries. Bottled water is not considered a manufactured product and is not included in this exclusion.

DISTRICT ACTIVITIES

The district has not denied a permit.

FUNDING

The Pineywoods GCD is funded through drilling and operating permit fees and through production fees. Drilling permits are required for all wells, including exempt wells. Fees range from $50 for exempt and small casing wells to $200 for wells with casings greater than 10 inches. With the exception of exempt wells, well owners must also obtain an operating permit, at a fee equivalent to the drilling permit fee. The district also charges production fees, which are currently set at $.001 per 1,000 gallons for all nonexempt wells and $0.015 for water that will be exported out of the district.

The district's enabling legislation does not allow it to impose ad valorem taxes. The estimated annual budget for the district is $150,000 to $170,000.

EDUCATION

Public education will be a component of the management plan once it is complete. The district currently hosts a website, and plans to produce a quarterly newspaper and provide outreach to the community through public speaking engagements at local association meetings, schools, etc.

CONTACT INFORMATION

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Rules: Rules of the Pineywoods Groundwater Conservation District, effective February 2002.

Management Plan: Proposed completion by November 2003.