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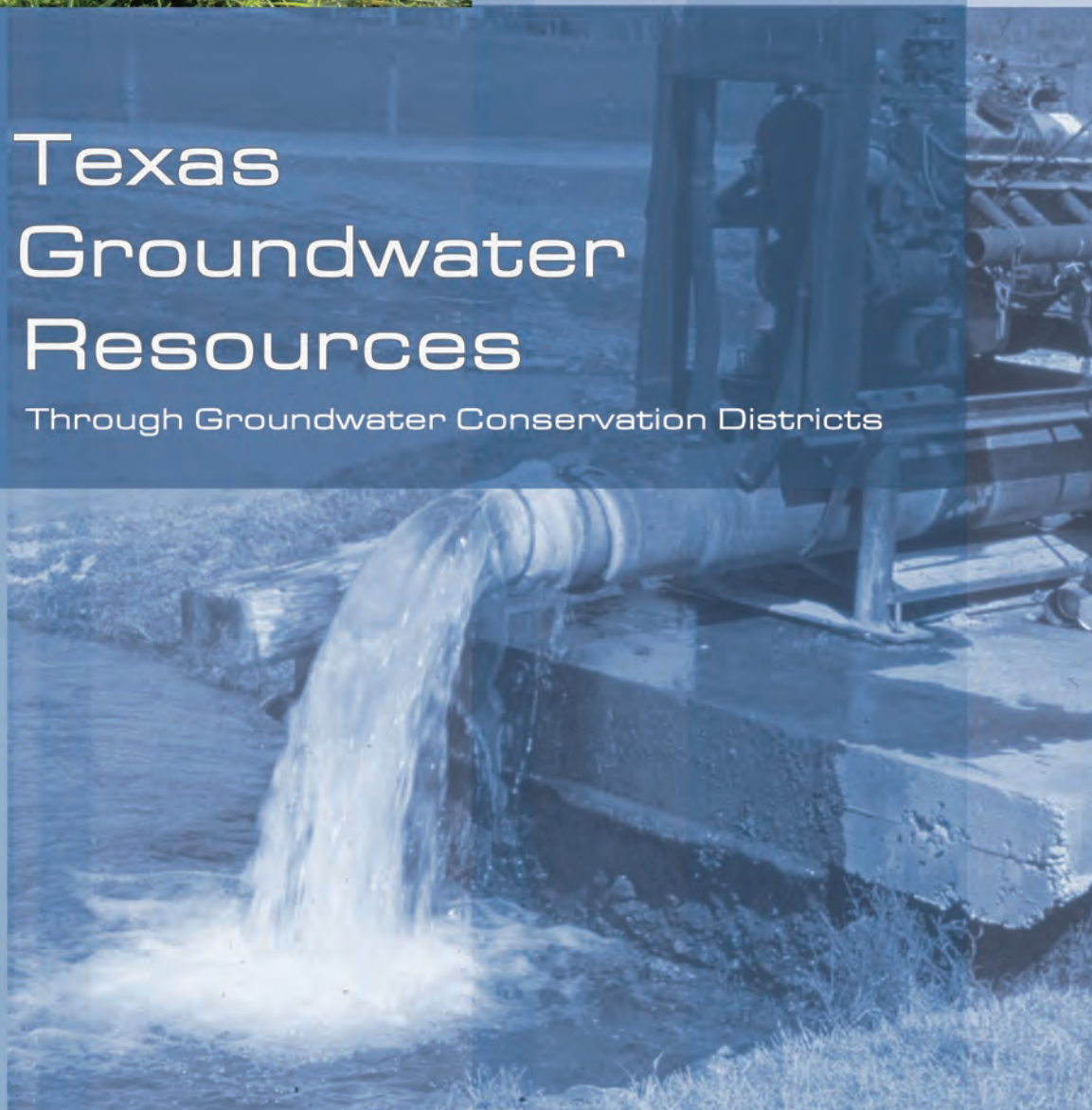
Managing Texas Groundwater Resources

Through Groundwater Conservation Districts



Texas Cooperative EXTENSION
The Texas A&M University System

Contents

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Texas Alliance of Groundwater Districts

Managing Texas' Groundwater Resources

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Texas is fortunate to have extensive groundwater resources. Most areas of the state are underlain by one or more of nine major aquifers and 20 minor aquifers (Figures 1 and 2). Groundwater supplies provide about 60 percent of the fresh water and nearly 76 percent of the agricultural water used in Texas.

It is widely recognized that proper management and protection of our groundwater resources is vital to Texas' economy and growth, human health and well being, and preservation of ecosystems.

The Texas Legislature has established locally controlled groundwater conservation districts as the primary means of managing groundwater. These districts have the authority and significant powers that, if they choose to use them, can provide for effective management and preservation of our groundwater resources.

This publication provides an overview of Texas water law, a summary of the powers and responsibilities of groundwater conservation districts, a review of the processes involved in creating districts, and an overview of issues related to groundwater conservation districts.

Texas Water Law

Texas law distinguishes between surface water and groundwater. All surface water—including streams, rivers, and lakes—is considered state water. The only exception is diffused water, which is defined as "water on the surface of the land in places other than a water course" (such as overland storm water runoff). Diffused water belongs to the landowner. Surface waters are "held in trust" by the state and appropriated to users through permits or "water rights."

Water rights applications are reviewed and processed by the Water Supply Division of the Texas Natural Resource Conservation Commission (TNRCC) in Austin. A water right specifies the amount of water that can be taken, usually in terms of acre-feet per year, and the specific stream segment or water body from which the water can be taken. These permits may contain restrictions designed to protect senior water rights and flows for the environmental preservation of streams, bays and estuaries.

Applications for consumptive use of water, such as for municipal, industrial and irrigation uses, must include water conservation plans. Water rights are subject to cancellation if use is not reported or if no use is reported for a 10-year consecutive period.

Groundwater law, on the other hand, is based on the English common law doctrine which associates groundwater with the landowner. Since 1904, Texas courts have applied the "rule of capture" to determine liability for damages relating to the withdrawal and use of groundwater. This doctrine and its interpretation through case law essentially provides that groundwater, once it has been captured by a well and delivered to the surface, belongs to the landowner. As such, landowners may use or sell all of the water they can capture from below their land.

State courts, including the Supreme Court as recently as 1999, have consistently ruled that landowners may pump as much water as they wish from beneath their land, regardless of the effects of such pumpage on adjacent landowners' wells. Over the years, the courts have placed only a few limitations on the rule of capture:

- Groundwater cannot be captured or used maliciously with the purpose of injuring a

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neighbor or amount to a willful waste of the resource.

- Landowners are liable for damages if their negligent pumping of groundwater results in the subsidence of neighboring land.
- A landowner may not drill a well on someone else's property or drill a "slant" well on adjoining property that crosses the property line.

Waste is defined narrowly in Chapter 36 of the Texas Water Code as the nonbeneficial use of groundwater, and includes:

- Allowing groundwater to escape from one geological formation to another that does not contain groundwater.
- Polluting a groundwater reservoir by salt water or other substances.
- Willfully or through negligence causing or allowing groundwater to escape into surface waters or other land features unless authorized.
- Allowing groundwater to become irrigation tailwater on someone else's land without permission.
- Withdrawing groundwater at a rate and in an amount that allows poorer quality water to encroach into the groundwater reservoir.
- Allowing the flow or use of groundwater for a nonbeneficial purpose.
- Willfully causing or knowingly permitting the water from an artesian well to run off the owner's land or to percolate through the stratum above which the water is found.

Texas groundwater law was once known as the "law of the biggest pump." Texas has established local groundwater conservation districts (GCDs) to protect, preserve, conserve and prevent the waste of groundwater resources within their boundaries.

Although no state agency has the authority to regulate the production or use of groundwater, GCDs have a number of powers they can invoke to provide some control over groundwater use. Landowners outside of conservation districts have little recourse in protecting local groundwater or in limiting groundwater pumping impacts by neighbors or others.

Groundwater Conservation Districts

In 1949, the Texas Legislature first provided for the voluntary creation of groundwater conservation districts (GCDs). These conservation districts could be created over any groundwater reservoir designated by the state and were subject to a confirmation election.

The Texas Legislature, while continuing to acknowledge the "rule of capture" of groundwater by landowners, passed additional legislation in 1985 and 1997 to encourage the establishment of groundwater conservation districts and, in limited cases, to allow for the creation of districts by state initiative.

This legislation stated that locally controlled GCDs are the state's preferred method of managing groundwater resources. It also stressed the importance and responsibility of GCDs in developing and implementing comprehensive management plans to conserve and protect groundwater resources.

Senate Bill 2, passed by the Texas Legislature in 2001, significantly amended GCD law. While acknowledging the "rule of capture," the legislation also stated that this doctrine may be limited or altered by rules promulgated by a GCD. Senate Bill 2 clarified GCD authority over the regulation of spacing and production of water wells, the types of wells subject to GCD permitting and oversight, transfer of groundwater out of a district, and the enforcement of rules. The legislation also simplified and streamlined the process for state creation of GCDs in priority groundwater management areas (PGMAs).

Groundwater conservation districts are created in "groundwater management areas," which simply are areas found to be suitable for management of groundwater resources. Senate Bill 2 directed the Texas Water Development Board (TWDB) to designate groundwater management areas (GMA) over all major and minor aquifers in the state by September 1, 2003. The TWDB can also alter the boundaries of a GMA as future conditions warrant and as better data becomes available.

To the extent possible, GMAs are to coincide with the boundaries of groundwater formations. However, the TWDB may consider other factors in determining the most suitable boundaries to accomplish groundwater management, such as the boundaries of political subdivisions. As of October 2001, there were 24 groundwater management areas delineated and/or designated within the state.

Priority Groundwater Management Areas

The 1985 legislation, House Bill 2, contained provisions for the Texas Water Commission (TWC, the predecessor to the TNRCC) to identify areas of the state with critical groundwater problems such as aquifer depletion, water quality contamination, land subsidence or shortage of water supply. Accordingly, the TWC and the TWDB identified possible critical areas and conducted further studies.

In 1997, the Texas Legislature enacted Senate Bill 1, a major water planning and management bill that, among other provisions, required regional water planning and the development of a state plan. The bill also reconfirmed and strengthened the provisions for the creation of groundwater conservation districts by state initiative in "priority groundwater management areas" (PGMAs). (State law regarding the designation of a PGMA is contained in Chapter 35 of the Texas Water Code.)

As with critical areas, PGMAs may be designated by the TNRCC in regions experiencing, or expected to experience in the next 25 years, critical groundwater problems such as shortages of surface water or groundwater, land subsidence and contamination of groundwater. A detailed study and an evidentiary hearing is conducted before a "study area" is designated a PGMA.

To date, 17 PGMA studies have been completed and six study areas have been designated as PGMAs (Figure 3). The Northern Bexar County study area was added to the previously designated Hill County PGMA. As of December 2001, five of the previous study areas were being reevaluated by the TNRCC (Figure 3, areas 1, 5, 6, 8 and 11).

In 2001, the Texas Legislature passed Senate Bill 2, which streamlined and clarified the PGMA process. Under this legislation, the TNRCC is to complete the initial designation of PGMAs by Sept. 5, 2005.

The PGMA designation order must recommend that an area be covered by a district. This may be accomplished through creation of a new district, addition of the area to an existing district, or a combination of both. District creation and/or annexation may be through local or legislative initiative and must be done within 2 years of the order.

Each new GCD created in a PGMA must hold an election to determine the district's board of directors and to approve or reject taxing authority by the district. If taxing authority is rejected, the district will be funded through production fees.

Voters also must approve the annexation of an area into an existing district. (Additional details on district creation or annexation in a PGMA is provided in the Appendix.)

Special Districts

The Texas Legislature can give special powers or responsibilities to groundwater conservation districts through the legislation that creates them. To effectively deal with specific and difficult groundwater problems, the Legislature has created three special districts that have unusual responsibilities and powers as compared to other groundwater conservation districts.

In 1975, the Texas Legislature created the Harris-Galveston Coastal Subsidence District to regulate groundwater withdrawals for the purpose of ending land subsidence. This district has the authority to regulate well drilling and to restrict pumping and groundwater use.

Similarly, in 1989, the Fort Bend Subsidence District was created to control land subsidence in Fort Bend County.

In 1993, the Legislature approved Senate Bill 1477 authorizing the abolition of the Edwards Underground Water District and the creation of the Edwards Aquifer Authority. The bill declared the Edwards Aquifer to be a "distinctive natural

resource and aquifer" that required a "special regional management district for the effective control of the resource."

The authority has the power to manage and control groundwater withdrawals through permitting, metering, fees and fines. It is directed by law to reduce total withdrawals from the aquifer to statutory limits established in the legislation.

The bill survived court challenges, and the authority began operation in 1996. In 1997, the authority began efforts to issue water permits for groundwater withdrawal, assess fees and install flow meters on pumps.

Current Extent of Groundwater Districts

As of January 2002, 65 groundwater districts have been created and confirmed by law or election in Texas (Figure 4). An additional 22 districts created during the 2001 Legislative session were still awaiting confirmation through local elections which must be completed by specific dates (see Appendix D).

To date, of all the districts created, only 10 districts have failed confirmation elections, and two districts had been abolished and replaced by the Legislature.

Most existing districts were created by acts of the Texas Legislature. Seven districts were created in the 1950s and 1960s by the Texas Board of Water Engineers and county commissioners courts under statutory provisions that have since been repealed. Six of these seven districts were validated at a later date by the Texas Legislature (the seventh district failed confirmation).

Five districts have been created by the TNRCC or its predecessor agencies through the landowner petition process as provided in Chapter 36 of the Texas Water Code. To date, no districts have been created by direct TNRCC-initiated action under the PGMA process provided in Chapter 35 of the Texas Water Code.

Powers and Responsibilities of GCDs

Groundwater conservation districts are charged to manage groundwater by providing for the conservation, preservation, protection, recharging and prevention of waste of groundwater resources within their jurisdictions.

Most GCDs are managed by a locally elected board of directors, although a few recently created districts have locally appointed board members. The size of the board generally ranges from five to 11 members who serve staggered 4-year terms. The board of directors is responsible for managing the district including the adoption of the district policies, rules and procedures.

Groundwater conservation districts have required duties that must be performed, as well as a number of authorized powers that may be invoked.

Groundwater conservation districts are required to:

- Develop and adopt a comprehensive management plan and coordinate planning with regional planning groups, state agencies and other districts (see below).
- Adopt necessary rules to implement the management plan.
- Require permits for drilling, equipping and completing wells, and for alterations to well size or well pumps (see below).
- Require records to be kept of the drilling, equipping and completion of water wells, and on the production and use of groundwater. Water well drillers' logs and electric use logs must be kept and filed with the district.
- Make information on groundwater resources available to the TNRCC and the TWDB upon request.

A groundwater conservation district also has requirements for organization and operation.

It must:

- Operate on the basis of a fiscal year, prepare and approve an annual budget, audit financial

accounts annually, name one or more banks to serve as a depository for district funds, and adopt certain district policies in writing.

- Hold regular board meetings at least quarterly, keep a complete account of all meetings and proceedings, and preserve minutes, contracts, records, notices, accounts, receipts and other records. All GCD meetings and records are subject to Texas' open meeting and open record requirements.
- Submit bonds and notes issued by the district to the attorney general for examination, and file confirmation election results and register board members with the TNRCC.

Unless limited by the Texas Legislature, GCDs are granted the following authorized powers and optional duties that they may choose to invoke or use:

- Adopt rules to conserve, preserve, protect, recharge and prevent waste of groundwater and control land subsidence.
- Adopt rules to regulate the spacing of water wells and the production of groundwater (see below).
- Enforce rules by injunction, mandatory injunction or other appropriate remedy in a court of competent jurisdiction. GCDs may adopt rules to set reasonable civil penalties for breach of district's rules.
- Acquire land to erect dams or to drain lakes, draws and depressions; construct dams; drain lakes, depressions, draws and creeks; install pumps and other equipment necessary to recharge aquifers; and provide facilities for buying, selling, transporting and distributing water.
- Make surveys of aquifers and facilities for development, production, transportation, distribution and use of groundwater.
- Buy, sell, transport and distribute surface water or groundwater for any purpose.
- Exercise the power of eminent domain to acquire by condemnation a fee simple (property of which the district has unqualified ownership and power of disposition) or other interest in property located inside the district. The property interest must be necessary to the exercise of the authorized duties of the district as conferred by Chapter 36 of the Texas Water Code.
- Carry out research projects and collect information regarding the use of groundwater, water conservation and the practicability of recharging aquifers.
- Promulgate rules to require permits for transferring groundwater out of the district.
- Require the owner or lease holder of land on which an open or uncovered well is located to keep the well permanently closed or capped.

Planning requirements

The state's policy is that water resource management, water conservation and drought planning be ongoing. GCDs must formulate plans that identify and address management goals for the most efficient use of groundwater, and to control and prevent waste of groundwater and land subsidence.

These plans must specify the acts, procedures, performance and avoidance measures necessary for their implementation. They also must address conjunctive surface water management and issues related to natural resources, drought and conservation.

Plans may be amended as necessary and must be readopted at least every 5 years. GCD management plans and amendments must be administratively certified by the TWDB and filed with other districts in a common groundwater management area.

After January 5, 2002, plans prepared by GCDs must be developed using the best available data and be submitted to the regional water planning group for consideration in their planning process. Conflict resolution between GCD and regional water plans is the responsibility of the TWDB as detailed in Section 36.1072 of the Texas Water Code.

GCDs within the same groundwater management area must, at a minimum, share their plans with each other and review the plans individually. By resolution, GCDs in a management area may call for joint planning with other districts. Districts are to consider the goals of each others' plans and their effectiveness for conserving and protecting groundwater in the management area.

If a GCD believes that this process has not resulted in adequate planning or management within a groundwater management area, the district may petition the TNRCC to request an inquiry. The GCD's petition is to provide evidence of one or more of the following:

- Another district in the management area failed to adopt rules to protect groundwater resources;
- The groundwater is not adequately protected by the rules adopted by another district;
- The groundwater in the management area is not adequately protected because another district has failed to enforced its rules.

Details of joint planning, petition and the resolution requirements and process are provided in Section 36.108 of the Texas Water Code.

Permitting of wells

All GCDs must permit and register the water wells within their boundaries. GCDs are authorized to exempt wells from the requirements of obtaining a drilling, operating or any other permit required under Chapter 36 of the Texas Water Code or the district's rules.

However, all wells in a district must be registered with the GCD. Unless specifically exempted by a GCD, all wells must obtain a permit from the district, except for:

- Wells used solely for domestic use or for providing water for livestock or poultry purposes on a tract of land larger than 10 acres that are either drilled, completed or equipped so that they cannot produce more than 25,000 gallons per day.
- The drilling of a water well used solely to supply water for a rig actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad Commission of Texas. These exempt wells must be on the same lease of field as the oil drilling rig.
- The drilling of a water well authorized for mining activities under a permit issued by the Railroad Commission of Texas, or the production from such a well. However, a GCD may require permits for these wells if production is in excess of what is needed for mining purposes.

(Details about wells that are exempt from GCD permitting authority and on permitting of wells under the jurisdiction of the Texas Railroad Commission are included in Section 36.117 of the Texas Water Code.)

Before granting a well permit, the GCD must consider whether:

- The application is complete and includes the prescribed fees;
- The proposed use of water unreasonably affects the groundwater and surface resources or existing permit holders;
- The proposed use of water is for a beneficial purpose that is consistent with the district's management plan; and
- The applicant has agreed to avoid waste, achieve water conservation, protect water quality and properly plug the well at the time of well closure.

In certain cases, GCDs may impose more restrictive permit requirements on new applications if the same requirements apply to all subsequent permit applications and are necessary to protect existing groundwater use.

Regulation of well spacing and production

GCDs may regulate well spacing and production in order to minimize groundwater depletion, control subsidence, prevent interference between wells, protect water quality or prevent waste. These rules may specify the spacing of wells, production capacity, pump size or other related characteristics.

Production limits may be set on the basis of acreage or tract size, a designated number of acres assigned to a well site, a specific amount in terms of acre-feet of water per acre, a pumping rate in gallons per minute, or any combination.

When limiting groundwater production, the district may consider historic water use and preserve these levels to the extent practicable and consistent with the district's management plan. Districts may also consider the service needs of a retail water utility when regulating production based on tract size or acreage.

Financing of districts

GCDs operate under an annual budget, with spending limited to budgeted items. They must generate revenue to pay for their operations, management services and other activities.

The two primary means of financing districts is through a property tax (also referred to as "ad valorem" or "maintenance" tax) or production fees. Often the legislation that creates the district specifies how the district is to be financed and sets or limits the tax rate and/or production fees.

Major Aquifers of Texas

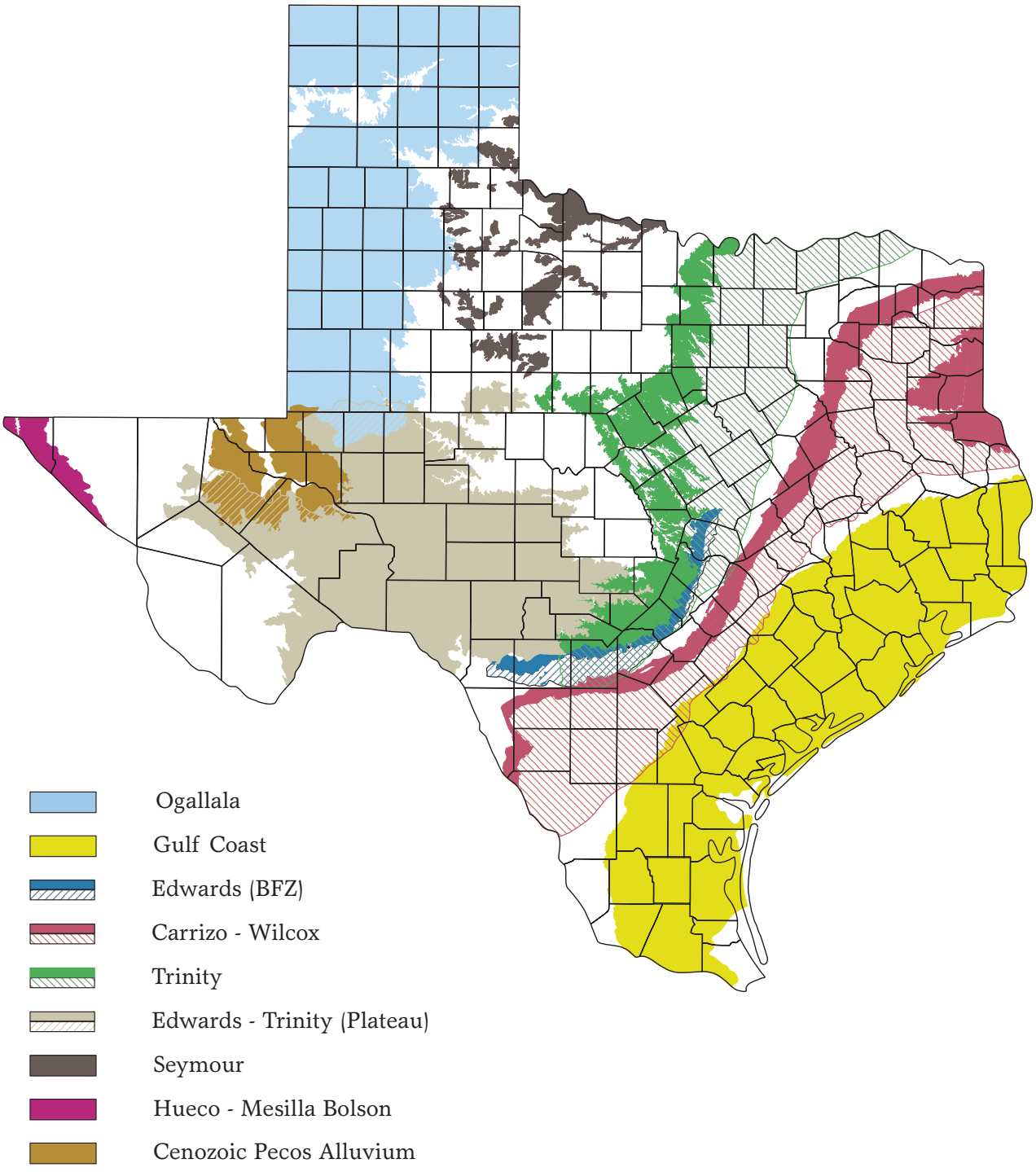


Figure 1. Nine major aquifers account for 96.3 percent of all groundwater withdrawals in Texas.

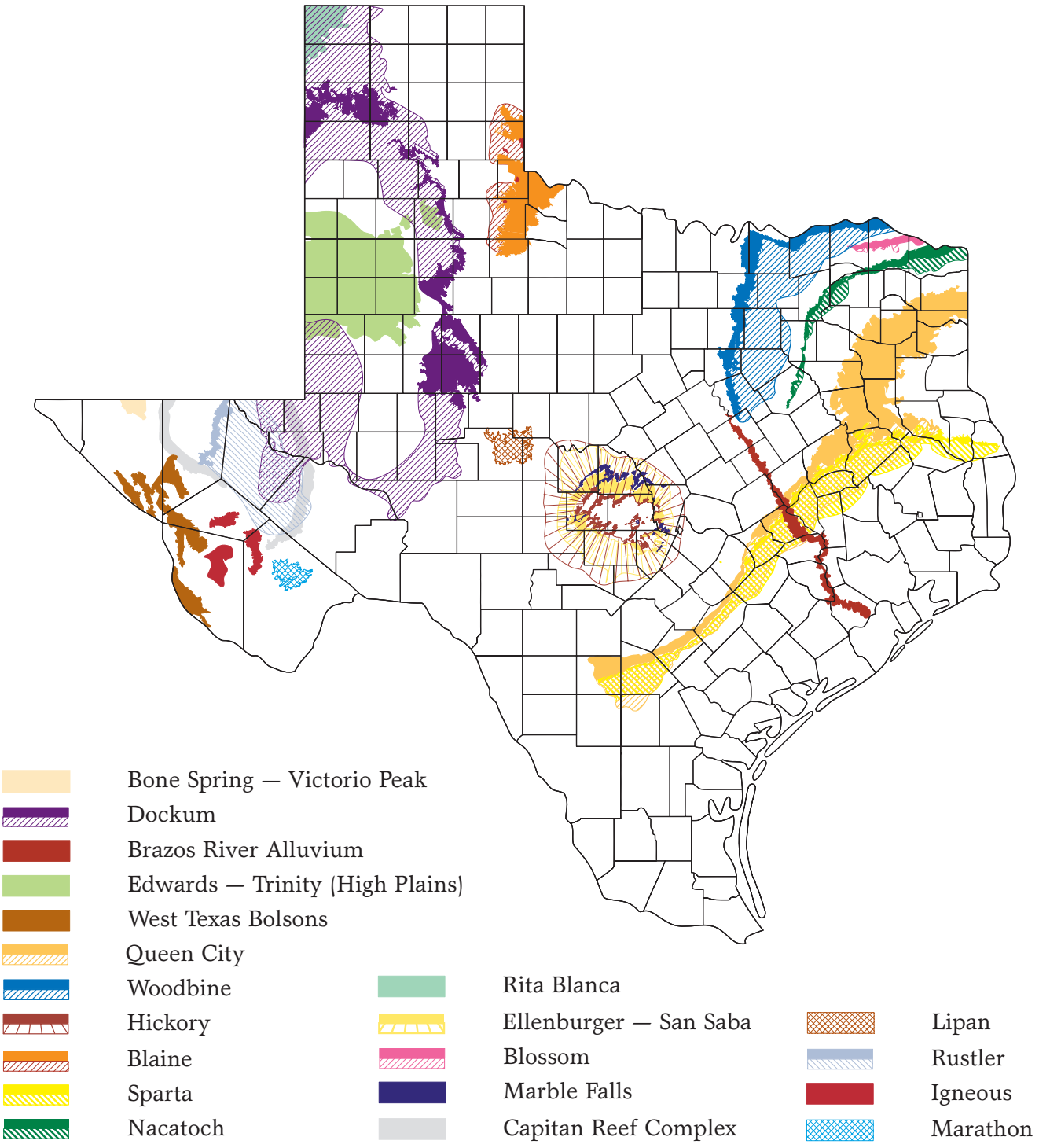
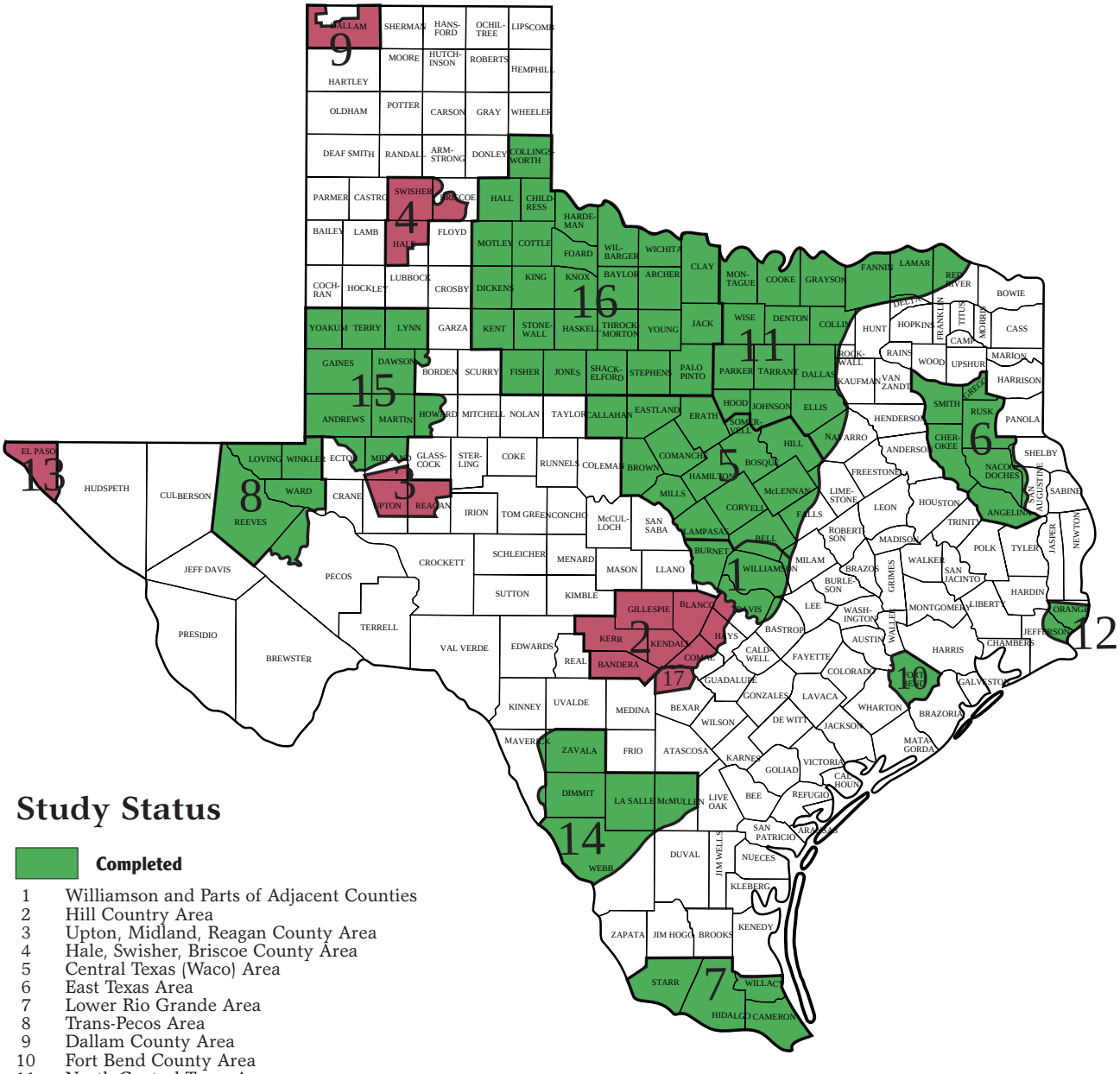


Figure 2. The 20 minor aquifers of Texas account for 3.7 percent of all groundwater withdrawals.



Study Status

Completed

1 Williamson and Parts of Adjacent Counties
2 Hill Country Area
3 Upton, Midland, Reagan County Area
4 Hale, Swisher, Briscoe County Area
5 Central Texas (Waco) Area
6 East Texas Area
7 Lower Rio Grande Area
8 Trans-Pecos Area
9 Dallam County Area
10 Fort Bend County Area
11 North-Central Texas Area
12 Orange-Jefferson County Area
14 Winter Garden Area
15 Southernmost High Plains Area
16 North Texas Alluvium and Paleozoic Outcrop Area

Designated PGMAs

2 Hill Country PGMA
3 Upton, Midland, Reagan County PGMA
4 Hale, Swisher, Briscoe County PGMA
9 Dallam County PGMA
13 El Paso County Area
17 Northern Bexar County (Added to the Hill Country PGMA)

Figure 3. Studies have been conducted in these areas because of existing or potential groundwater supply or quality problems.

Conservation Districts, Publication B-1612 (02-02).
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Groundwater Districts

Conservation Districts

1 Anderson County UWCD
2 Barton Springs/edwards Aquifer CD
3 Bee GCD
4 Bexar Metropolitan Water District
5 Blanco-Pedernales GCD
6 Brewster County GCD
7 Clearwater UWCD
8 Coastal Bend GCD
9 Coastal Plains GCD
10 Coke County UWCD
11 Collingsworth County UWCD
12 Colorado Valley GCD
13 Culberson County GCD
14 Dallam County UWCD No. 1
15 Edwards Aquifer Authority
16 Emerald UWCD
17 Evergreen UWCD
18 Fort Bend Subsidence District
19 Fox Crossing Water District
20 Garza County Underground And Fresh WCD
21 Glasscock County UWCD
22 Goliad County GCD
23 Gonzales County UWCD
24 Guadalupe County GCD
25 Harris-Galveston Coastal Subsidence District
26 Headwaters UWCD
27 Hemphill County UWCD
28 Hickory UWCD No. 1
29 High Plains UWCD No.1
30 Hill Country UWCD
31 Hudspeth County UWCD No. 1
32 Irion County WCD
33 Jeff Davis County UWCD
35 Lipan-Kickapoo WCD
36 Live Oak UWCD
37 Llano Estacado UWCD
38 Lone Star GCD
39 McMullen GCD
40 Medina County GCD
41 Menard County UWCD
42 Mesa UWCD
43 Neches&Trinity Valleys GCD
44 North Plains GCD
45 Panhandle GCD
46 Pecan Valley GCD
47 Permian Basin UWCD
48 Pineywoods GCD
49 Plateau UWC And Supply District
50 Plum Creek CD
51 Presidio County UWCD
52 Real-Edwards C and R District
53 Refugio GCD
54 Rolling Plains GCD
55 Salt Fork UWCD
56 Sandy Land UWCD
57 Santa Rita UWCD
58 Saratoga UWCD
59 South Plains UWCD
60 Springhills Water Management District
61 Sterling County UWCD
62 Sutton County UWCD
63 Texana GCD
65 Wintergarden GCD

Edwards Aquifer Authority

34 Kinney County GCD
64 Uvalde County UWCD

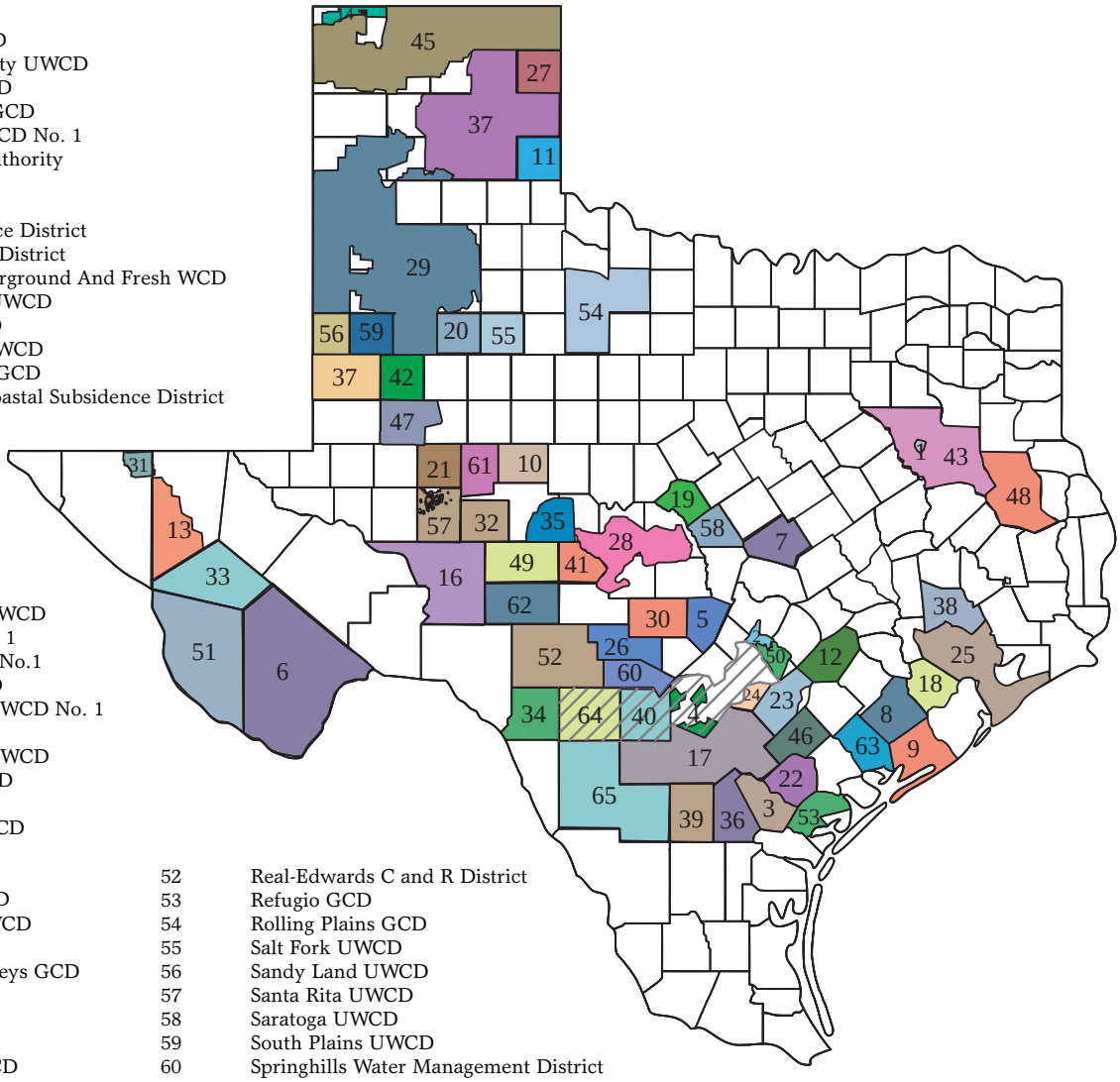

Figure 4. There are 65 confirmed groundwater conservation and special districts in Texas as of January 2002. The Edwards Aquifer Authority contains 3 conservation districts within its territory.

If not specified in the legislation, state law caps GCD taxes at a rate of 50 cents per $100 valuation to pay operation and maintenance expenses. The use of ad valorem taxes by a district must be authorized by the voters before the tax may be levied.

Currently, only two tax-based GCDs levy taxes at rates above 10 cents per $100 valuation. Unless otherwise addressed by a district's legislation, the production fees are capped by state law at $1 per acre-foot/year for agricultural use and $10 per acre-foot/year for other uses.

To a lesser extent, GCDs may also generate revenue by assessing fees for administrative services such as processing permit or groundwater transport applications, performing water quality analysis, providing services outside of the district, and capping or plugging abandoned wells. These fees must not unreasonably exceed the cost of providing these services.

GCDs can also impose export fees (see below) and apply for and receive grants, loans and donations from governmental agencies, individuals, companies or corporations for specific conservation projects or research.

In addition, GCDs can issue and sell tax bonds for capital improvements such as building dams, draining lakes and depressions, installing pumps and equipment, and providing facilities for the recharge of aquifers. Such tax bonds are subject to voter authorization, TNRCC review, and the State attorney general's approval.

Transferring groundwater out of districts

GCDs have the authority to require permits for the transfer of groundwater outside of the district. When granting transfer permits, the district must consider:

- The availability of water in the district and in the proposed receiving area,
- The expected effects of the proposed transfer on groundwater depletion, subsidence, and existing permit holders and users in the district, and
- Implications to the area's regional water plan and the district's management plan.

Transfer permits may not be denied solely based on the fact that the applicant seeks to transfer water out of the district and must not be more restrictive than the requirements for in-district users.

Districts may impose an export fee on water transferred out of the district. Unless specified in the legislation creating the district, the export fee is based on the district's existing tax or production fee rates or is negotiated with the transporter. GCDs are allowed to charge a 50 percent export surcharge in addition to the production fee charged for in-district use.

Additional exemptions and conditions apply to transfer agreements made before September 1, 1997 (Section 36.122 of the Texas Water Code).

Creation of Groundwater Conservation Districts

Groundwater conservation districts can be created by any one of four procedures as discussed below. However, most districts are created by action of the Legislature. Often the local senator or representative introduces and carries the bill on the district.

Except as noted below, GCD creation is subject to a confirmation election by registered voters within the proposed district. Voters also elect directors and vote up or down the tax rate proposition for financing the district.

Action of the Legislature: New GCDs can be established through special legislation. While the specifics may vary in each case, the legislation generally authorizes district powers and duties, appoints or provides procedures for the appointment of temporary directors and for the election or appointment of subsequent directors, and establishes procedures for the elections and voter approval.

Such legislation commonly addresses district financing by setting the tax rate limits or production fee caps for the district. The legislation may give the district additional authority or responsibilities above those provided in Chapter 36 of the Texas Water Code or alternatively limit the district's powers.

After being created, the district's temporary directors are responsible for ordering and conducting the district's confirmation election.

Petition by property owners: A GCD can be created through a landowner petition to the TNRCC (Subchapter B, Chapter 36 of the Texas Water Code). If all statutory requirements are met, the TNRCC certifies the petition, issues an agency order creating the district and appoints the temporary directors named in the petition.

The temporary directors are responsible for calling and conducting the district's confirmation election. (Appendix A contains more detail on the landowner petition process.)

Initiation by the TNRCC: If no local district-creation action is taken within a set time of a PGMA designation, the TNRCC may create a GCD in the designated PGMA.

An election is held to determine the directors and to vote up or down on taxing authority for the district. If the tax proposition is not approved by the voters, the district is financed through production fees revenue. (Details on the process for TNRCC creation of district are provided in Appendix B.)

Addition of territory to an existing district: An alternative to creating a new GCD is to add territory to an existing district, if an existing district is near enough to be practical and is willing to accept the new territory.

One form of annexation begins with a petition from an individual landowner directly to the GCD's board of directors. In this case, the board's decision is sufficient to include the property.

For larger areas, groups of landowners or entire counties can petition a GCD's board for inclusion. After hearings and the board's acceptance of the petition, a confirmation election is held.

Annexation of territory to an existing groundwater conservation district is governed by the Texas Water Code, Chapter 36, Subchapter J. (More details on the annexation process are given in Appendix C.)

Issues

The 1949 Texas Groundwater Districts Act and succeeding laws and regulations give groundwater conservation districts the responsibility to conserve and preserve groundwater supplies and to achieve more efficient water use. The size of districts varies widely, as do the level of responsibility each district has chosen to accept.

Single-county districts are common, with over half of the established districts encompassing the territory of a single county or less. Single-county districts are sometimes viewed as too small in size to effectively manage an aquifer that extends beyond its boundaries, to have a sufficient tax base that allows tax rates low enough so that they are not considered burdensome by the taxpayers, or to have sufficient groundwater pumpage to finance district expenses through production fees.

It is not clear yet if the requirements of Senate Bill 2 (77th Legislature, 2001) for coordination of district planning within a groundwater management area and with regional water planning groups will help resolve the challenges facing single-county districts.

On the other hand, this type of district allows groundwater management decisions to be made at the most local level. Single-county districts may be able to deal more effectively with specific groundwater management and use issues, particularly in areas where most groundwater withdrawals support a common industry or activity.

Some GCDs have established successful and well-funded conservation programs that have helped preserve groundwater resources while providing valuable technical assistance and educational programs for groundwater users in the districts. Other districts have limited their regulatory strategies primarily to that of well spacing requirements. A few have chosen to perform only the minimum requirements under state law.

The rationale supporting the local creation and control of groundwater districts is related to the large diversity of climatic conditions, water use patterns, growth projections and aquifer characteristics across the state. This diversity would make it difficult to formulate and administer uniform laws and regulations to govern the development and use of groundwater statewide. State law governing GCDs provides the flexibility for local decision making to address local and regional groundwater concerns.

Locally controlled groundwater conservation districts, with rules, programs and activities specifically addressing local problems and opportunities, have worked well in some portions of the state. However, in the Edwards Aquifer region, the GCD was ineffective in managing and conserving the resource for a number of reasons, including the complexity of the water issues and competing interests. The result was that the Texas Legislature replaced the district with a regulatory authority with strict statutory groundwater management mandates.

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Appendix A
Petition Process for Creation of Groundwater Conservation Districts

The landowner petition process for the administrative creation of a groundwater conservation district (GCD) is governed by Subchapter B, Chapter 36 of the Water Code. This statute provides TNRCC with the authority to create GCDs in response to landowner petitions in designated groundwater management areas. The 77th Legislature (2001) directed the TWDB to designate groundwater management areas for all the state's major and minor aquifers by September 1, 2003.

Landowner GCD creation petitions are filed with the chief clerk of the TNRCC for review and certification. The petition must be accompanied by a $700 nonrefundable filing fee and be signed by the majority of the landowners in the proposed district, or by at least 50 landowners if there are more than 50 landowners in the proposed district. The petition must contain the following information:

- The name of the proposed district
- The area and boundaries, including a map of the general boundaries of the proposed district
- The purpose or purposes of the proposed district
- A statement of the general nature, need for and feasibility of any projects being proposed for the district to undertake, and the petitioners' estimated cost of these projects if they are to be funded through the issuance of bonds or notes
- The names of at least five people qualified to serve as temporary directors
- Financial information including the projected tax rate or production fees, and a proposed budget of revenues and expenses for the district

At a minimum, the petition should include justification for the creation of the district and evidence that the district is feasible, practical and necessary. It should also contain a summary of how the proposed district projects will address issues that have been identified in the groundwater management area.

The financial information should demonstrate that the proposed revenues (from either ad valorem taxes or production fees) would be adequate to fund the district's activities. The petition must include the certification of petition signatures by the county tax assessor, affidavits of qualifications for temporary directors and any other information as required by the TNRCC.

Information required to accompany landowner petitions for the creation of a GCD are found in TNRCC rules [Title 30, 293.11 (a) and (b), Texas Administrative Code]. Amendments to these rules should be completed by the end of 2002 to reflect changes in state law approved by the 77th Legislature (2001). The TNRCC uses these rules to determine if a petition is in compliance with statutory requirements.

The TNRCC reviews the petition for statutory compliance and issues a "notice" of the petition. Within 60 days of issuing the notice, the TNRCC holds a public meeting within the area of the proposed district. Within 90 days of the public meeting, the TNRCC must certify the petition as administratively complete if signatures and petition contents meets the statutory requirements.

The TNRCC may not certify a petition if it finds that the proposed GCD cannot be adequately funded, the proposed GCD boundaries do not provide for effective management of groundwater resources, or the proposed GCD is not in a designated groundwater management area.

If the TNRCC does not certify a petition, it must provide the reasons in writing to the petitioners. The petitioners may resubmit the petition within 90 days without additional fees. If the proposed GCD is not in a groundwater management area, then the TNRCC notifies the TWDB, which in turn must initiate a groundwater management area designation proceeding.

If the TNRCC certifies the petition as administratively complete, it issues an order to create the district, notifies the petitioners and appoints the temporary directors named in the petition.

Within 120 days of being appointed, the temporary directors must meet and order an election to be held in the district. Voters approve or deny district creation ("confirm the district"), elect permanent directors and approve the maintenance tax. If the voters confirm creation of the district but the maintenance tax is defeated, then the district finances are provided through production fees.

Appendix B
Priority Groundwater Management Area Process and Groundwater Conservation District Creation Process in a PGMA

Identification phase

The executives of the TNRCC and TWDB meet periodically to identify areas of the state that face, or are expected to face within the next 25 years, critical groundwater problems, including shortage of surface water or groundwater, land subsidence resulting from groundwater withdrawal, and contamination of groundwater. They discuss the need for studies and actions to be initiated in these areas.

Under provisions of Senate Bill 2 passed by the 2001 Texas Legislature, the TNRCC must complete the initial designation of PGMAs by September 1, 2005, for all areas that meet the criteria listed above. After September 1, 2005, the TNRCC and the TWDB will annually review the need for additional PGMA designations.

Public participation phase

The executive director of the TNRCC determines when to initiate a specific PGMA evaluation. Before initiating the process, the TNRCC must provide notice to "water stakeholders." These stakeholders include county governments, municipalities, river authorities, adjacent GCDs, regional water planning groups, water districts and other entities that supply public drinking water.

The notice is provided to solicit comments, data, existing studies and any pertinent information about water supply, groundwater availability, aquifer water level trends and groundwater quality. The recipients of the notice are allowed 45 days to provide comments.

Study Phase

After the water stakeholder notification, the executive director requests detailed studies from the TWDB and the Texas Parks and Wildlife Department (TPWD) to evaluate issues within their respective areas of expertise. The PGMA process time line begins with the request for the studies, and the two agencies are given 180 days to submit their studies. The executive director may also solicit input from the Texas Department of Agriculture.

Report and recommendation phase

After the time frame for the study phase, the executive director has 90 days to prepare a report based on the information and comments solicited from the study area's water stakeholders, data and information provided from the TWDB and TPWD studies, and independent research.

The executive director's report must include recommendations for:

- The boundaries for a possible PGMA
- The reasons and supporting information for or against designating the study area as a PGMA
- The decision on whether one or more districts should be created within the PGMA or if the area should be added to an existing district (or any combination of the two)
- Actions that should be considered to conserve the natural resources.

The executive director's final report must be supplied to at least one public library in the area, each county clerk in the area, adjacent GCDs and applicable TNRCC regional offices.

Designation phase

If the executive director recommends that the study area be designated a PGMA, the TNRCC will publish a notice in at least one newspaper in the affected area that an evidentiary hearing will be held.

The evidentiary hearing is called and held within the PGMA study area to consider whether a PGMA should be designated, whether a GCD should be created over all or part of a PGMA, whether all or part of the land in the PGMA should be added to an existing GCD, or a combination of the GCD creation actions. Consideration of GCD issues must include a determination of whether a district is feasible and practicable.

The hearing must take place within 75 days after the hearing announcement and within the affected area unless adequate meeting facilities are not available. At the hearing, affected persons such as land and well owners can present testimony and evidence for the TNRCC to consider.

The evidentiary hearing is conducted by an administrative law judge from the State Office of Hearings Examiners (SOAH). The administrative law judge names parties to the hearing, makes rulings on evidence and testimony during the hearing, considers the evidence and testimony during and after the hearing, and prepares a proposal for decision for the TNRCC.

The SOAH administrative law judge places the proposal for decision on the TNRCC's public meeting agenda in Austin. The TNRCC may request more information from any source if it considers that further information is necessary.

At the public meeting in Austin, the TNRCC considers the SOAH proposal for decision, the executive director's report and all other testimony and evidence admitted during the evidentiary hearing.

After the hearing and considerations, the TNRCC issues an order stating its findings and conclusions. The order must state the TNRCC findings and conclusions, including whether the area should be designated as a PGMA and recommendations on district creation.

The TNRCC order designating a new PGMA must recommend that the area be covered by a GCD either by creation of one or more new districts, by adding the PGMA to one or more existing districts, or by a combination of these actions.

Alternatively, if the TNRCC determines that a GCD is inappropriate for or unable to protect the groundwater resources of the PGMA, it may recommend to the Legislature that a special district be created or that an existing district's authority be amended.

Education phase

After the TNRCC has designated a new PGMA, Texas Cooperative Extension will begin an educational program in the area to inform residents of the status of the area's water resources and management options, including possible formation of a GCD.

The county commissioners courts of each county in the PGMA will form a steering committee to provide assistance to Texas Cooperative Extension to accomplish the goals of the educational program.

GCD creation phase; local initiative

After the TNRCC designates a new PGMA (which includes specific GCD creation recommendations), landowners in the area have at least 120 days or up to 2 years to create a district on their own initiative. Landowners may have a district created through the petition or legislative processes, or petition to have the area added to an existing district.

The GCD creation process through a landowner petition is outlined in Appendix A and the processes to add an area to an existing GCD are summarized in Appendix C. A voter confirmation election is required in both processes.

If the TNRCC order recommends that the PGMA or part of the PGMA be added to an existing GCD, the TNRCC must submit a copy of the order to the recommended GCD's board of directors. The responsibilities of that GCD's board of directors and the voter confirmation process are outlined in Appendix C.

GCD creation phase; TNRCC initiative

State law requires the TNRCC to create a GCD by direct action if in a designated PGMA:

- Local action is unsuccessful or not undertaken to establish a GCD (or GCDs) in the PGMA within the 2-year local initiative period.
- The TNRCC recommends that the PGMA be added to an existing GCD, and the GCD's board of directors tried to add it, but it was defeated.
- The TNRCC recommends that the PGMA be added to an existing GCD and the GCD's board of directors voted not to pursue addition of the territory.

If any of these situations apply, the TNRCC, without conducting an evidentiary hearing, must issue an order that would create a GCD, specifically task county commissioner's courts to appoint a set number of temporary directors for the GCD, and require the temporary directors to call and hold an election to authorize the GCD to collect taxes.

Within 120 days of being qualified, the temporary directors must meet and order an election to be held in the district. The election is conducted for the registered voters to approve authority for the GCD to levy a maintenance tax and to elect permanent directors who will serve set terms. If the voters defeat the maintenance tax proposition, the GCD will be financed through production fees.

Appendix C
Adding Territory to an Existing Groundwater Conservation District

There are three ways to add territory to an existing GCD:

Individual landowners: Landowners within territory adjoining a district may petition directly to the district's board of directors to consider including their land in the district. In this case, all landowners involved must sign the petition to specifically include their property.

The board's decision to annex is sufficient and no further action is necessary. This process is provided for in Subchapter J, Sections 36.321 through 36.324 of the Texas Water Code.

Multiple landowners: Landowners within a defined area of territory may file a petition with an existing GCD board of directors requesting inclusion into the district. If the proposed territory is not contiguous to the district, it must be within the same groundwater management area.

The petition must be signed by a majority of the landowners in the territory, at least 50 landowners if the number of landowners is more than 50, or the commissioners court of a county in which the area is located if the area is within a designated priority groundwater management area or includes the entire county.

Public hearings must be held both within the existing district and within the territory proposed for annexation. Next, if the board of the existing GCD finds that the addition would benefit both the territory and the district, it may add the territory described in the petition. The board may change the boundaries of the territory to be added if it finds that the change is necessary or desirable.

After approving the petition to add the territory, the board calls an election within the proposed area to confirm the addition of the territory. The process of adding territory to a GCD is described in Subchapter J, Sections 36.325 through 36.331, Texas Water Code.

In a Priority Groundwater Management Area (PGMA): The TNRCC order designating a PGMA may recommend that the PGMA or part of the PGMA be added to an existing GCD if there is a benefit to land and other property in both the PGMA and the existing district, and there is a "public need for the annexation that would further the public welfare."

If such is the case, the TNRCC submits a copy of the order to the recommended GCD's board of directors, and the directors vote on whether they want to pursue the addition of the area. The board must advise the TNRCC of the outcome of this decision (Section 35.013 of the Texas Water Code).

If the GCD's board of directors vote to pursue addition of the recommended PGMA territory, the board may request educational programming from Texas Conservation Extension and will call an election within the proposed area to confirm the addition of the territory.

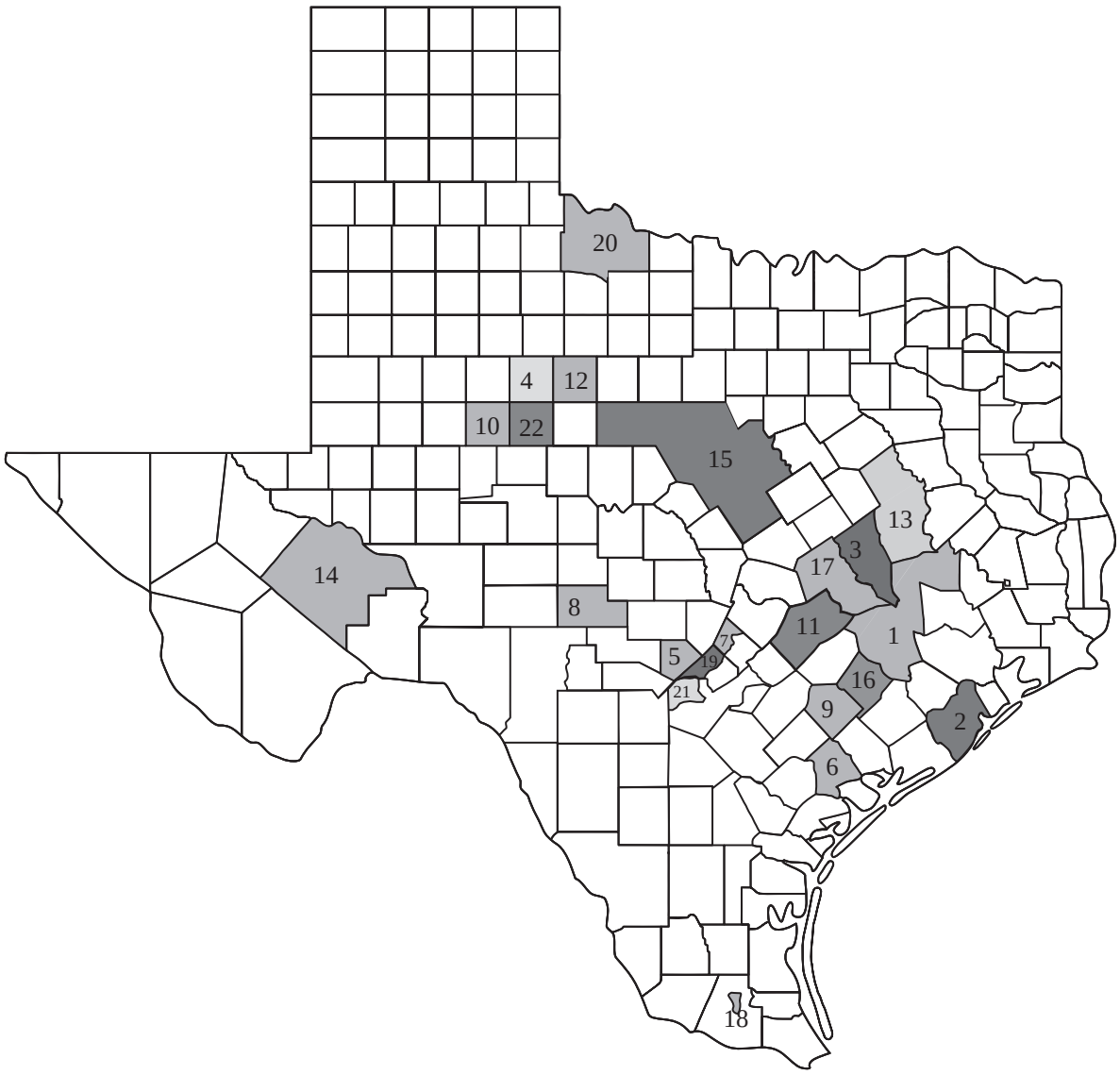
If the addition of the territory is approved by a majority of those voting, the board will declare that the PGMA be added to the district, provide the added area with reasonable representation on the board of directors, and file election results with the TNRCC.

The newly added area must assume its pro rata share of the GCD's indebtedness and agree to the ad valorem tax if the district has one. Another election to add the proposed territory may not be held for a 1-year period.

If the recommended GCD's board originally votes not to pursue addition of the territory or if the voters do not approve the addition, then within 1 year, the TNRCC is required to create one or more GCDs in the PGMA or to issue alternative recommendations to the Texas Legislature for future management of the PGMA.

Appendix D
Unconfirmed Groundwater Conservation Districts Created/Ratified by 77th Legislature, 2001

Groundwater Conservation District	Counties	Expiration Date (if not confirmed)
1. Bluebonnet GCD	Walker, Grimes, Washington, Austin, Waller	09/01/03
2. Brazoria Co. GCD	Brazoria	09/01/03
3. Brazos Valley GCD	Robertson, Brazos	08/31/03
4. Clear Fork GCD	Fisher	06/17/05
5. Cow Creek GCD	Kendall	09/01/03
6. Crossroads GCD	Victoria	09/01/06
7. Hays Trinity GCD	Hays	09/01/03
8. Kimble Co. GCD	Kimble	09/01/03
9. Lavaca Co. GCD	Lavaca	09/01/06
10. Lone Wolf GCD	Mitchell	09/01/03
11. Lost Pines GCD	Bastrop, Lee	08/31/03
12. Lower Seymour GCD	Jones	06/17/05
13. Mid-East Tex GCD	Freestone, Leon, Madison	08/31/03
14. Middle Pecos GCD	Pecos	09/01/03
15. Middle Trinity GCD	Callahan, Eastland, Erath, Comanche, Hamilton, Bosque, Coryell, Somervell	09/01/03
16. Post Oak GCD	Colorado	09/01/03
17. Post Oak Savannah GCD	Milam, Burleson	08/31/03
18. Red Sand GCD	Hidalgo	09/01/03
19. Southeast Trinity GCD	Comal	09/01/05
20. Tri-County GCD	Hardeman, Foard, Wilbarger	09/01/03
21. Trinity-Glen Rose GCD	Bexar	09/01/04
22. Wes-Tex GCD	Nolan	09/01/03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