

For more information on water use, management and conservation, please see the other publications by Lone Star Groundwater Conservation District.

**Water For Growth**—Management of the Resource for Montgomery County

**Lone Star GCD**—What Every Well Owner and Driller Should Know

Or visit us online at [www.lonestargcd.org](http://www.lonestargcd.org).

*A publication of*



**Lone Star Groundwater**  
CONSERVATION DISTRICT

207 West Phillips, Suite 300  
Conroe, Texas 77305

local 936/494-3436  
metro 936/441-3437  
fax 936/494-3438

e-mail: [info@lonestargcd.org](mailto:info@lonestargcd.org)

## Water for Our Future

### Understanding Texas Water Management



*A publication of*

**Lone Star Groundwater**  
CONSERVATION DISTRICT

Texas is a state rich in natural resources, but it is also a state with an arid climate in well over half of its total area. Considering that our great state is also growing at tremendous rates, we must acknowledge that our limited water resources must be managed intelligently to insure we all have adequate clean and affordable water supplies for generations to come.

The Texas Legislature provides for the conservation and development of our most precious natural resource. General and permanent water law is defined in the Texas Water Code, which relates to water rights, water development, water quality control, river compacts and general law districts.

#### Surface Water

The term “surface water” defines all free flowing rivers in the state, along with the reservoirs that have been built on these rivers over the past 100 years. Though most rivers are spring-fed at their source, the bulk of the water in these river systems comes from rainfall runoff. Each major river system is managed by a “River Authority,” which is charged by the State Legislature with the responsibility of optimizing the resource for all parties—municipalities, agriculture, recreation and the environment. These rivers and their reservoirs are the primary source of water for nearly all major cities and many smaller communities.

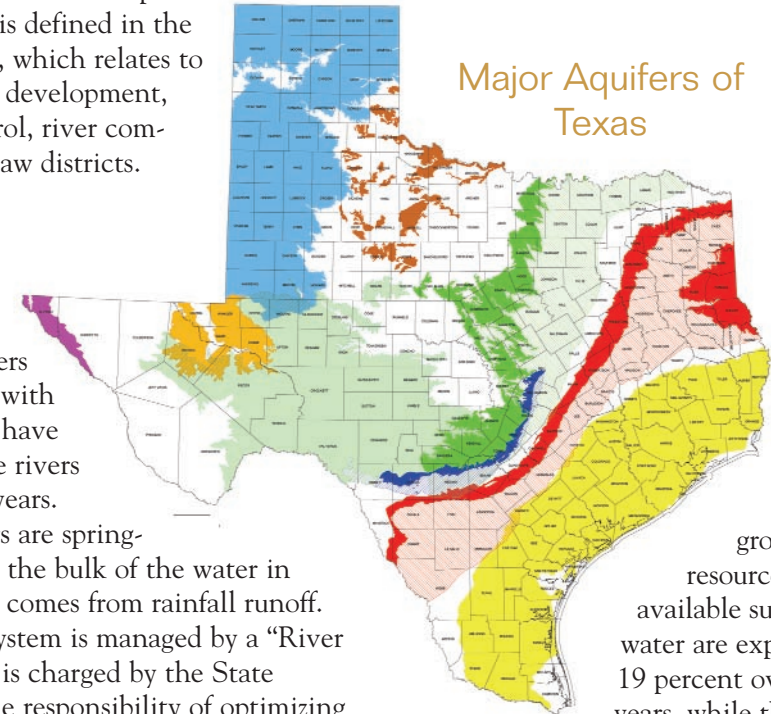
#### Groundwater

Texas is fortunate to have vast underground water resources, which are concentrated in nine

major and 20 minor “aquifers,” which can best be described as large underground reservoirs and rivers. These aquifers are each unique in their own properties. Some recharge from rainfall very quickly, while others recharge slowly or not at all. They have varying depths and volumes. And all have a different set of local conditions that affect their future.

Groundwater accounts for approximately 60% of the water used in Texas. Historically, the majority of groundwater consumed statewide was for agricultural purposes and by rural residential areas. But the “urban sprawl” of Texas’ major cities has caused many previously smaller communities to experience rapid population growth, which has strained their groundwater resources. As a result, available supplies of groundwater are expected to fall by 19 percent over the next 50 years, while the state’s population is expected to double.

Unless measures are taken to address this imbalance of supply and demand, water shortages are expected by 2020. Many parts of the state already are overdrafting groundwater—pumping more than is naturally replenished. If this continues, water costs will rise, water quality is likely to drop, land could subside and—in some areas—wells could run dry.



## Groundwater Conservation Districts

Groundwater Conservation Districts (GCDs) are local units of government, generally created along county or multi-county borders. The Legislature decided that locally-controlled districts could effectively respond to the unique geology, hydrology, climate, recharge rate and demands of a region to maintain a balance between protecting the rights of private landowners and the responsibility to protect the water resource. And that the responsibility for managing local needs can best be managed by locally elected or appointed leadership. By law, GCDs are empowered to:

- Promote water conservation
- Provide for the most efficient use of groundwater
- Prevent land subsidence from overpumping
- Protect water quality
- Address the conjunctive use of groundwater and surface water

Furthermore, by law, GCDs may require permitting and registration of certain wells and keep records on all water wells in an effort to determine how much water is being consumed locally. Through this base of information, the legislature believes local GCDs can best manage the groundwater resources of their own particular region for the long-term benefit of all citizens. GCDs cooperate with the State's 16 Regional Water Planning Groups, which analyze supply and demand of water resources throughout Texas.

*“Groundwater conservation districts . . . are the state’s preferred method of groundwater management”*

While all GCDs draft and adopt Rules that best suit their own area, most achieve their objectives by regulating groundwater use through regulation of well spacing, well permitting and production limits.

## State Oversight

GCDs are required to meet standards set forth in Chapter 36 of the Texas Water Code. In addition, the Texas Water Development Board (TWDB), State Auditor’s Office and Texas Commission on Environmental Quality (TCEQ) all oversee various aspects of GCDs. Every district must develop a Groundwater Management Plan and have it certified. The plan must provide for the most efficient use of groundwater resources for the good of all constituents, while preventing water waste and land subsidence. In addition, it must address drought conditions, conservation measures and natural resources by outlining the district’s goals and methods.

## GCD Funding

Groundwater conservation districts may be funded in one of two ways—well production fees or property taxes. Tax-based GCDs levy taxes on the assessed value of property. Fee-based GCDs rely mostly on well production fees—based on the amount of water usage or well capacity. The method of funding for each GCD is determined by local election.

GCDs may also charge export fees and administrative fees; solicit grants, gifts and loans; and charge for services such as water testing.

– Chapter 36 of the Texas Water Code

## Historic Use Permitting

Many GCDs take advantage of an allowance in the Texas Water Code to base well permits on “Historic Use.” Though the specifics vary from district to district, “Historic Use Permits” generally allow well owners to protect their land investments by securing permits for an annual amount of water based on their historic use levels over a specified previous period of time. Most GCDs recognize the established levels of water used by their historic use permittees before approving permits for new wells.

## Water Marketing

Most major aquifers in Texas lie predominantly in rural areas, where demand on the groundwater supplies is limited to agriculture and small municipalities. Most of these are not experiencing rapid growth, so the annual demand on their aquifers has remained relatively stable.

At the same time, most major metropolitan areas of Texas are experiencing rapid population growth, and many have reached or exceeded the capacity of their local surface and groundwater supplies. As these cities begin to look outside their regions for available water, Texas’ reliance on Rule of Capture has opened the door for a new challenge to management of groundwater resources—“Water Marketing”. What this term refers to is the concept of exporting groundwater from areas where it appears plentiful and may even be unregulated

by a local GCD, to cities that are forecasting future water shortages.

Without oversight and regulation by a locally-managed GCD, this practice could lead to unabated “mining” of the aquifers, where they could be pumped excessively so as to cause private wells to be impacted dramatically. This subject of “water marketing” is one of the most difficult matters the Texas Legislature is addressing, and it is very likely that local GCDs

will play a major role in the future management of this practice.

## The Importance of Conservation

Water supplies are not unlimited, so we should all recognize our personal impact on the long term future of the water resources of our area.

Be alert to where you use your water and where you might waste it. Most importantly, realize that over half of all water used in Texas is devoted to residential landscape purposes, and in a largely urban/suburban area like

Montgomery County, that use is even higher. Through judicious and smart use of your landscape watering, you will not only save water (and money!), but you can actually develop a hardier lawn and more satisfying landscaping.

