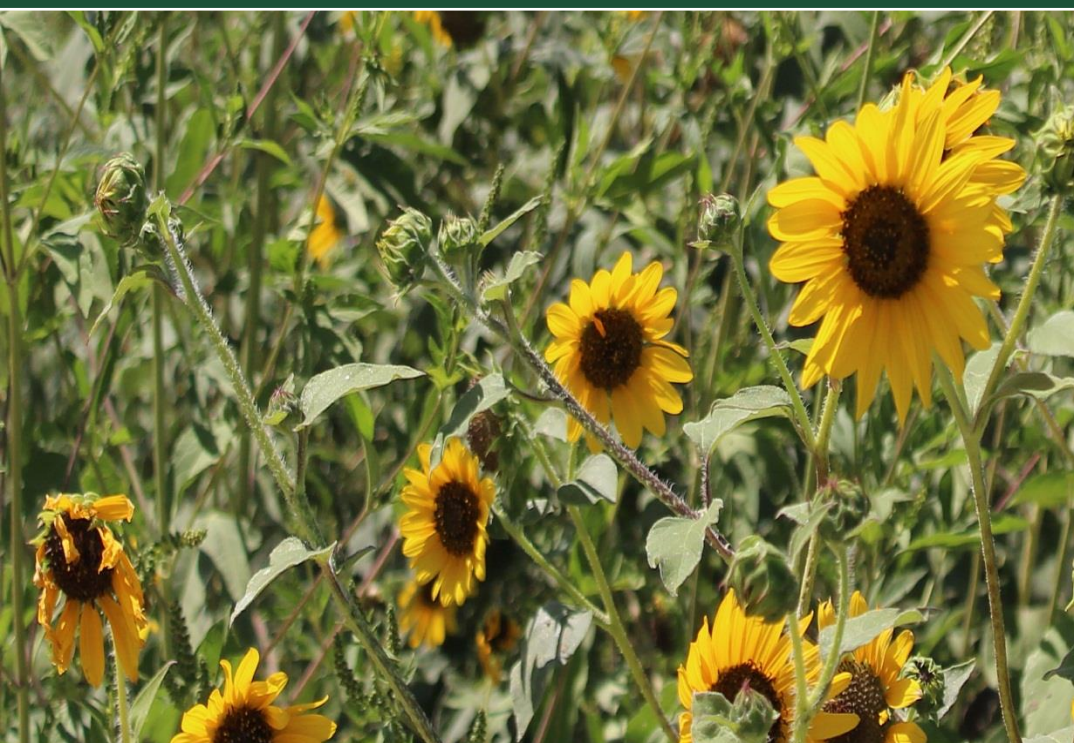




# Prairielands Groundwater Conservation District



**2017  
Annual Report**





## LETTER FROM THE GENERAL MANAGER

The 2017 Regular Session of the 85<sup>th</sup> Texas Legislature saw the introduction of a substantial number of groundwater-related bills that demanded significant time and resources of the District. Through work in pre-session stakeholder groups through the Texas Water Conservation Association and Texas Alliance of Groundwater Districts, attending and testifying at legislative committee hearings, as well as numerous meetings with members and staff of the House and Senate, a significant amount of time was spent at the State Capitol working, along with our team of professionals, to ensure that state law preserved the ability of the District to maintain local management of groundwater resources and to have the flexibility to fashion groundwater regulations that make sense for the landowners in our four counties. When the dust settled, at the end of the session, our hard work paid off, maintaining the District's ability to protect the private property rights of our landowners in their groundwater and to be able to give due consideration to their investment-backed expectations in groundwater. While our legislative efforts in 2017 were an unqualified success, the projections coming out of Austin for another busy groundwater session in 2019 have already begun. Our landowners can be assured that the District will continue to do its part to try to protect their interests at the Statehouse to maintain local control and fend off legislative approaches to groundwater management that may make little or no sense in our area. However, the District always welcomes, and can benefit from, the assistance of our local citizens in our efforts to stave off these one-size-fits-all, unfunded state mandates.

Early 2017 saw GMA-8, composed of Prairie Lands and 10 other GCDs, include the District's proposed DFCs in the proposed DFC of the GMA. Thus, another important step was taken. As required by statute, the GMA then sent its desired future conditions resolution and explanatory report to the Texas Water Development Board for administrative review. The DFC resolution and the report were declared complete by TWDB in the autumn of 2017. This action cleared the path for the PGCD Board of Directors to adopt by resolution the desired future conditions for the Trinity Aquifer Group and the Woodbine Aquifer underlying Ellis, Johnson, Hill and Somervell Counties, in December.

Simultaneously, the board through its Rules and Bylaws Committee and the District's consultants, began development of the District's permanent rules and regulations. Numerous committee meetings were held through the latter half of 2017 and continued into 2018, along with stakeholder input.

The District's number of monitor and observation wells increased in 2017, and the database is continually being enhanced making possible the more efficient incorporation of field data. Proposed developments and improvements will make this area even more exciting in the year ahead.

As will be seen graphically in the following pages, the District's public awareness program enjoyed its best year. Through the Water Education Trailer (WET) being seen in more venues than in previous years and

from invitations for staff members to speak before more groups, hundreds of people of all ages are aware of the District and about the importance of water conservation.

Property was purchased at 208 Kimberly Drive for the District's future office and shop and construction is scheduled to begin in 2018. The facility will allow the District staff to more efficiently serve the interests of constituents.

During 2017, the PGCD Board of Directors adopted a two-acre minimum tract size requirement to drill a well. This action should ensure a longer, more trouble free, productive life for the well and should also prevent heavy aquifer decline in a localized area.

District Directors Randel Kirk, Marty McPherson and Paul Tischler were reappointed to the board by their respective County Commissioners Courts. Barney Pustejovsky, charter board member representing Hill County, declined reappointment and the Commissioners Court appointed Kent Smith to fill the post. Craig Dodson, board member from Somervell County, resigned and the Commissioners Court appointed Tod Sandlin to fill the vacancy.

Other activities of the District in the past year included the production of a short video describing the stratigraphy of the aquifers of the District, the continued registration of new wells and resolving a minimal number of compliance issues.



**Jim Conkwright**  
**General Manager**  
**Prairielands GCD**



*Texas State Capitol at Night*



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## Mission Statement

The Mission of the Prairielands Groundwater Conservation District ("District") is to develop rules to provide protection to existing wells, prevent waste, promote conservation, provide a framework that will allow availability and accessibility of groundwater for future generations, protect the quality of the groundwater in the recharge zone of the aquifer, insure that the residents of Ellis, Hill, Johnson, and Somervell Counties maintain local control over their groundwater, and operate the District in a fair and equitable manner for all residents of the District.

## Brief District History

Prairielands Groundwater Conservation District was created in response to a finding by the Texas Commission on Environmental Quality (TCEQ) that groundwater shortages were expected in Ellis, Hill, Johnson, and Somervell counties over the next 25 years. The TCEQ finding required local residents to create a groundwater conservation district, or else the TCEQ would mandate one, enabling legislation for the Prairielands GCD to be created in 2009 by the 81<sup>st</sup> Texas Legislature.

The Texas Commission on Environmental Quality designated a large area over the Trinity Aquifer from the Red River to Central Texas as a Priority Groundwater Management Area (PGMA) due to the critical groundwater declines facing the area. The Prairielands GCD is located in the north prairies of Texas, encompassing a four-county area. The District spans 2,870 square miles and overlays the Trinity Aquifer.

Prairielands GCD is here to manage, protect and conserve groundwater and seeks to balance the needs of all groundwater users with the requirements of a sustainable aquifer. The District operates in a fair and equitable manner through a management plan and rules. They are designed to prevent waste, collect data, plan for future resources, and educate people about water conservation and aquifer protection.

## District Creation

The Prairielands Groundwater Conservation District ("District") was created by the 81<sup>st</sup> Texas Legislature under the authority of Section 59, Article XVI, of the Texas Constitution, and in accordance with Chapter 36 of the Texas Water Code ("Water Code"), by the Act of May 3<sup>rd</sup>, 2009, 81<sup>st</sup> Leg., R.S., Ch. 1208, 2009 Tex. Gen. Laws 3859, codified at TEX. SPEC. DIST. LOC. LAWS CODE ANN. Ch. 8855. ("The District Act"). The District is a governmental agency and a body politic and corporate. The District was created to serve a public use and benefit and is essential to accomplish the objectives set forth in Section 59, Article XVI, of the Texas Constitution.

## Board of Directors

The Prairielands Groundwater Conservation District's Board of Directors is composed of two members per county, appointed by the counties' Commissioners' Courts. The 2017 directors are:

**President – Charles Beseda**

Term Expires August 31, 2019  
Represents Hill County

**Director – Kent Smith**

Term Expires August 31, 2021  
Represents Hill County

**Secretary/Treasurer – Maurice Osborn**

Term Expires August 31, 2019  
Represents Ellis County

**Second Vice-President – Randel Kirk**

Term Expires August 31, 2021  
Represents Ellis County

**First Vice-President – Dennis Erinakes**

Term Expires August 31, 2019  
Represents Johnson County

**Director – Paul Tischler**

Term Expires August 31, 2021  
Represents Johnson County

**Director – Marty McPherson**

Term Expires August 31, 2021  
Represents Somervell County

**Director – Tod Sandlin**

Term Expires August 31, 2019  
Represents Somervell County

## District Staff

**Jim Conkwright**

General Manager

**Rosetta Douthitt**

Office Administrator

**Michael Heath**

Field Technician

**Stephanie Rexrode**

Records Administrator

**Karen Siddall**

Public Relations and Education Administrator

## Providing the most efficient use of groundwater

### Well Registrations

*A.1. - Management Objective: The District will require that all wells be registered in accordance with its rules.*

*A.1. - Performance Standard: Each year the staff will report well registration statistics. A summary of registration activity by county and aquifer will be included in the District's Annual Report.*

In 2017, an additional 128 wells were registered with the Prairielands GCD bringing the total number registered to 1,338.

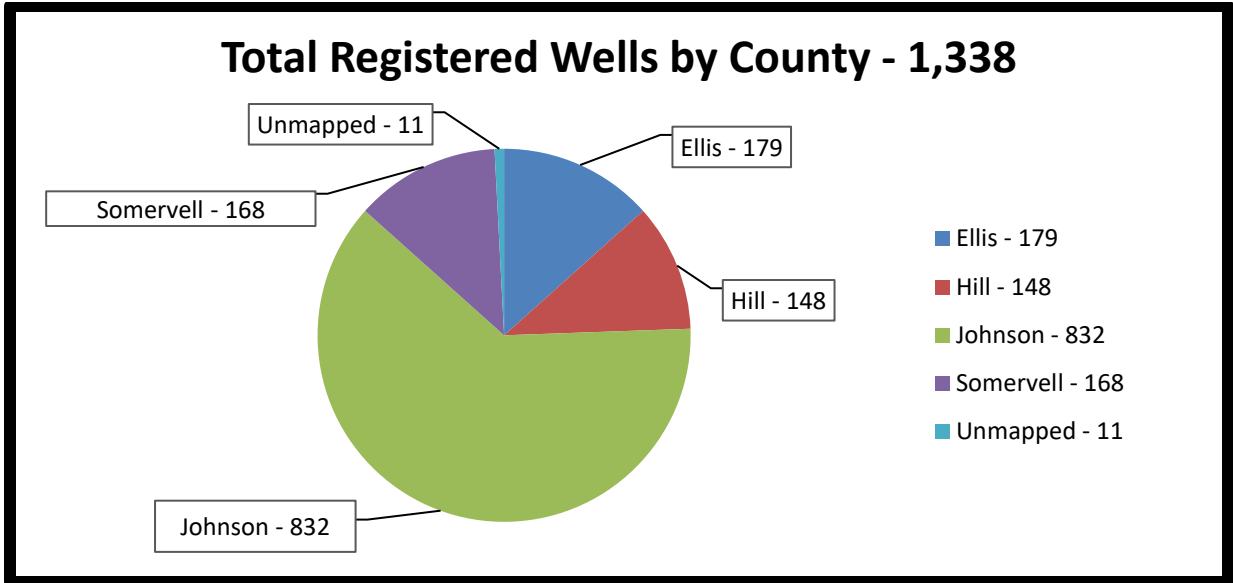
Of the new registrations:

- 126 new wells/1 existing well/1 plugged well
- 122 exempt/5 non-exempt/1 plugged

A breakdown of new registrations by county is as follows.

Ellis County - 8 <ul style="list-style-type: none"><li>▪ 5 new exempt</li><li>▪ 2 new non-exempt</li><li>▪ 1 existing exempt</li></ul>	Hill County - 8 <ul style="list-style-type: none"><li>▪ 7 new exempt</li><li>▪ 1 plugged</li></ul>
Johnson County - 101 <ul style="list-style-type: none"><li>▪ 98 new exempt</li><li>▪ 3 new non-exempt</li></ul>	Somervell County - 11 <ul style="list-style-type: none"><li>▪ 11 new exempt</li></ul>

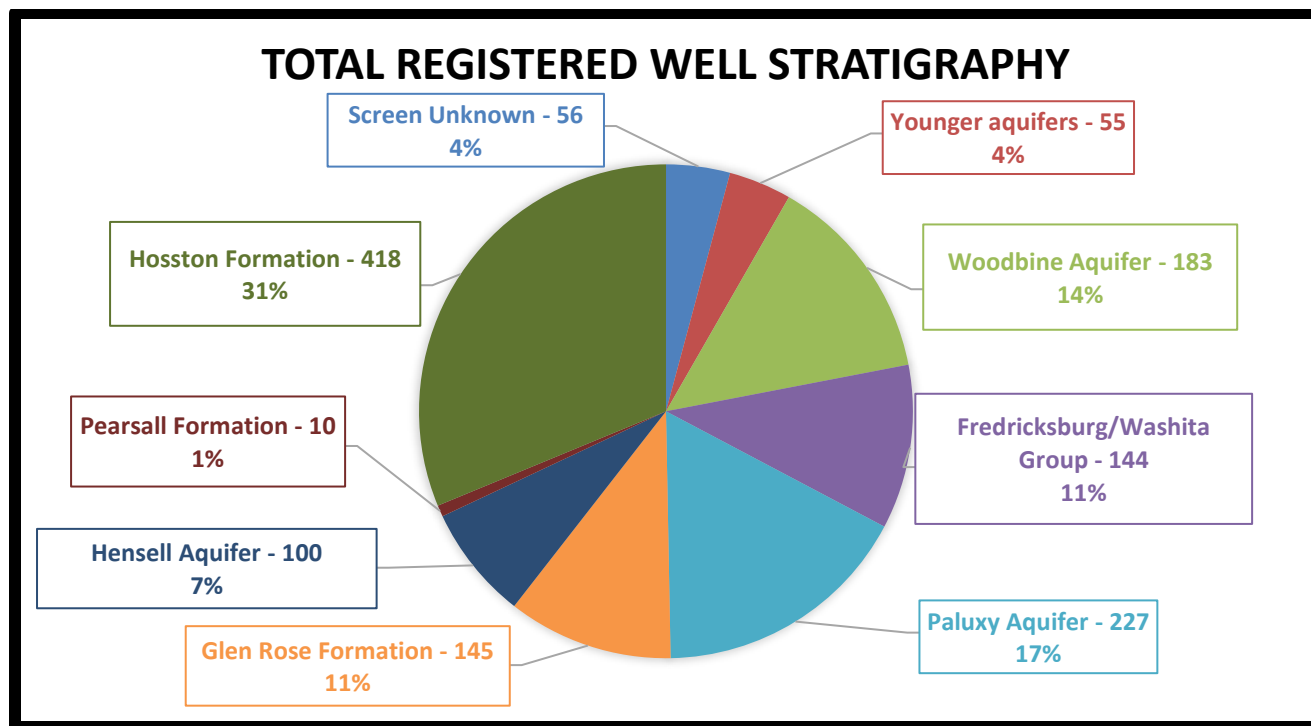




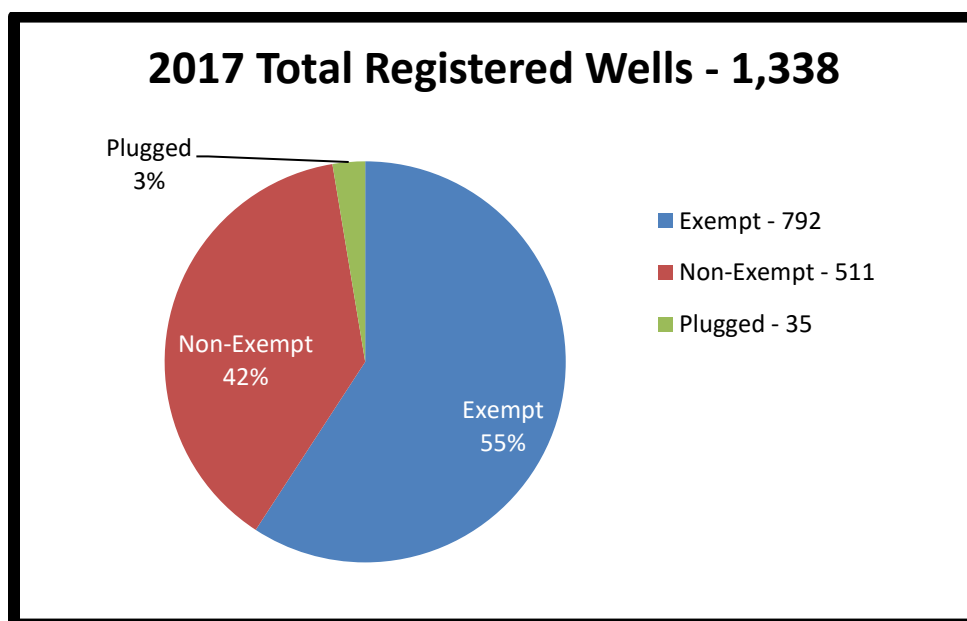
To register wells by aquifer formation, the district incorporated the data from the update of the Northern Trinity/Woodbine Groundwater Availability Model (“NTWGAM”). The district uses the data in its online registration and reporting geo-database to programmatically apply aquifer formations to registered wells based on location, depth, and screen interval. Many wells, however, are screened across multiple formations in the Trinity aquifer. For the purpose of this annual report, the layer with the majority of the screen was chosen for those wells.

The breakdown of wells registered in 2017 by stratigraphy is as follows:

<ul style="list-style-type: none"> <li>Younger aquifers – 3 <ul style="list-style-type: none"> <li>Ellis County – 1</li> <li>Hill County - 1</li> <li>Somervell County – 1</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Woodbine Aquifer – 30 <ul style="list-style-type: none"> <li>Johnson County – 20</li> <li>Ellis County – 7</li> <li>Hill County – 3</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>Washita/Fredericksburg Group – 15 <ul style="list-style-type: none"> <li>Johnson County – 15</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Paluxy Aquifer – 35 <ul style="list-style-type: none"> <li>Johnson County – 32</li> <li>Hill County – 2</li> <li>Somervell County – 1</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>Glen Rose Formation – 34 <ul style="list-style-type: none"> <li>Hill County – 1</li> <li>Johnson County – 31</li> <li>Somervell County – 2</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Hensell Aquifer – 5 <ul style="list-style-type: none"> <li>Johnson County – 2</li> <li>Somervell County - 3</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>Pearsall Formation – 0</li> </ul>	<ul style="list-style-type: none"> <li>Hosston Formation – 6 <ul style="list-style-type: none"> <li>Johnson County – 1</li> <li>Hill County – 1</li> <li>Somervell County – 4</li> </ul> </li> </ul>



The registered wells are also designated as exempt or non-exempt producers. By the close of 2017, there were 511 non-exempt and 792 exempt wells registered.



## **Installation of Meters and Annual Production of Groundwater from Non-Exempt Wells**

*A.2. - Management Objective: Each year the District will monitor annual production from all non-exempt wells within the District. The District will compile records and develop a database of non-exempt wells to help assess the aquifer units from which groundwater production occurs.*

*A.2. - Performance Standard: The District will require installation of meters on all non-exempt wells and reporting of production to the District.*

The District's *Temporary Rules* require all non-exempt well owners to install and maintain accurate water meters on their wells. Based upon the meter readings, the *Temporary Rules* further require well owners to record the amount of groundwater produced from their wells and to report the amount of groundwater production to the District on either a semi-annual or monthly basis.

*A.3. - Management Objective: The District will compile records and develop a database of non-exempt wells to help assess in which aquifer units groundwater production occurs.*

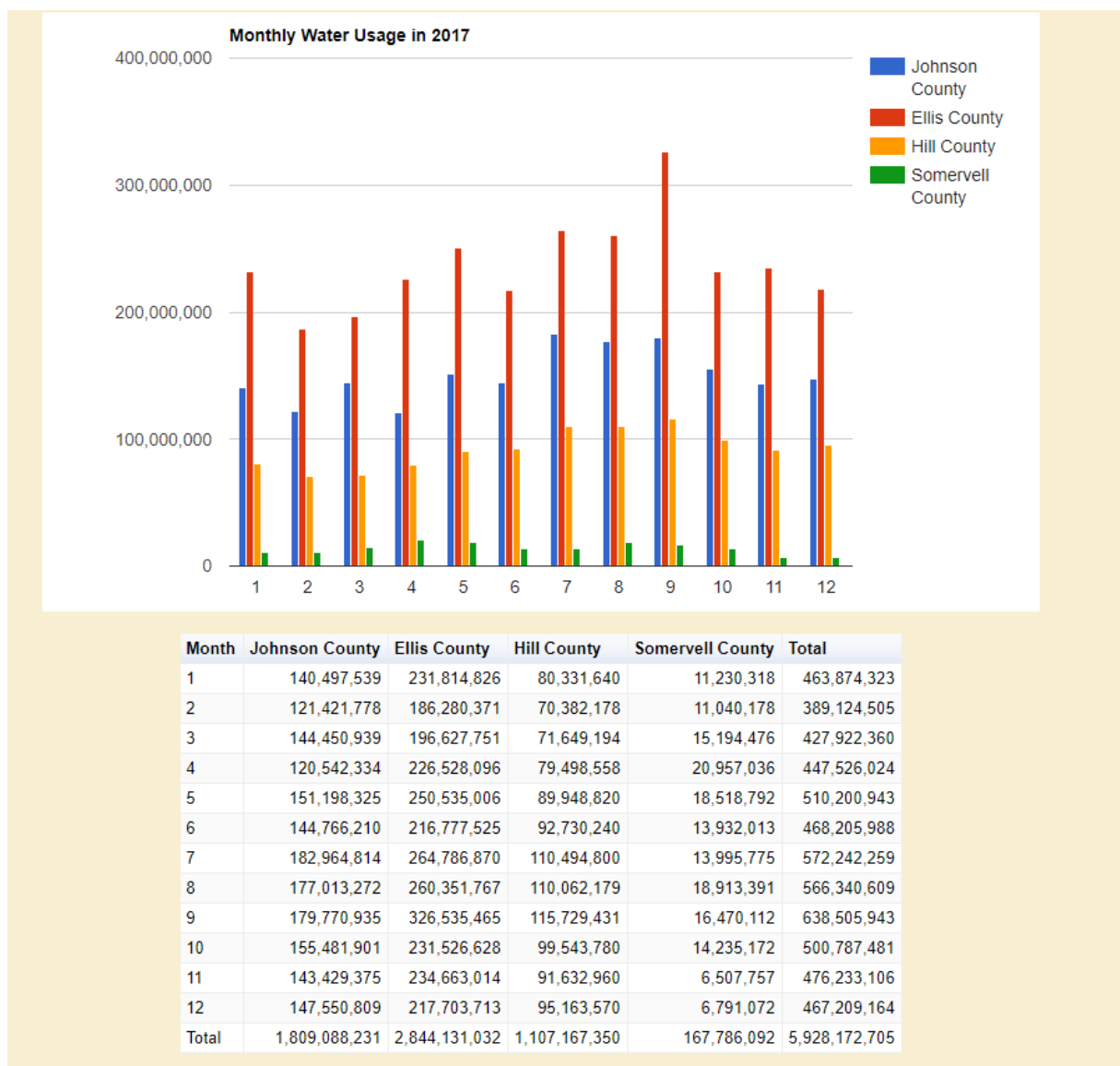
*A.3. - Performance Standard: The District will require installation of meters on all non-exempt wells and reporting of production to the District. The annual production of groundwater from non-exempt wells will be included in the Annual Report provided to the Board of Directors.*

The District operates an extensive geo-database that houses all well and water usage information. This database is used by the District to classify wells as exempt/non-exempt; verify coordinates of well locations; input/verify meter readings; easily assess the quantity of water pumped by county, well owner, or use; locate wells; and approve new well registration applications. It is also available to well drillers and well owners to apply for new wells or report meter readings, and to pay for their non-exempt water usage. Any non-exempt well owner that reports online monthly receives a 10% discount. This helps to minimize error and reduce administrative time and costs. Non-exempt well owners may also report online for a semi-annual period, but there is not an incentive program in place. Not only can non-exempt well owners report their meter readings, but they have 24/7 access to their meter readings archive, past water use fee orders, and driller's reports. Furthermore, they have access to a change-meter tool in situations in which their meter is malfunctioning. This improves accuracy of the readings without having to contact the office.

## District Well Production

Non-exempt well owners in the District reported that they pumped a total of 5,928,172,705 gallons of groundwater in 2017. Owners in Ellis County pumped the most of the four counties followed by Johnson, Hill, and Somervell. The months with the greatest usage was September for Hill and Ellis, July for Johnson, and April for Somervell. The lowest usage across the district varied with February being the lowest in Ellis and Hill counties, April in Johnson, and November in Somervell.

## Monthly Water Usage by County



### **District Water User Groups**

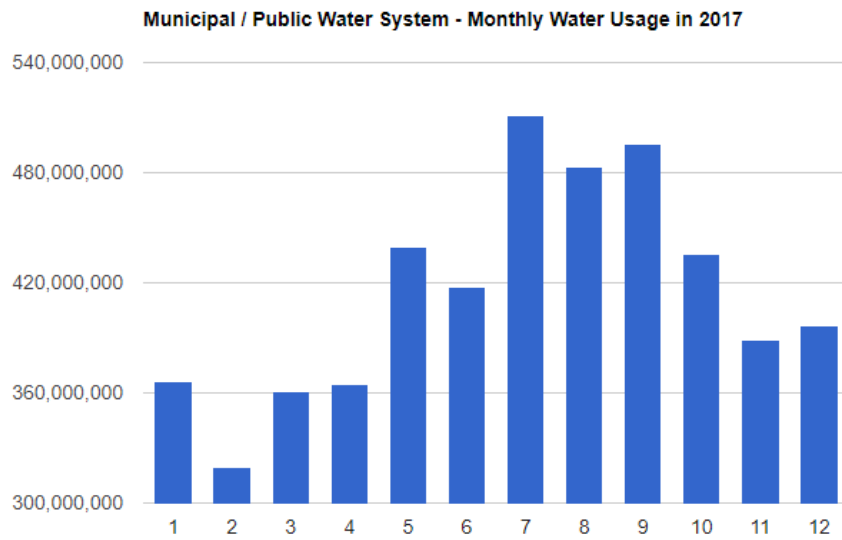
The majority of groundwater used in the district is for municipal/public water supply systems with a reported 4,978,891,456 gallons pumped in 2017. This amount is an increase of 131,042,731 gallons or 2.7% over totals reported for 2016. The Industrial/Manufacturing sector reported the second greatest usage at 870,047,596 gallons. This is a decrease of 38,606,891 gallons or 4.25% from totals reported for 2016.

Water User Group Water Usage		
User Group	2017 Usage	2016 Usage
Municipal/Public Water Supply	4,978,891,456	4,847,848,725
Industrial/Manufacturing	870,047,596	908,654,487
Commercial/Small Business	33,078,651	68,571,306
Golf Course Irrigation	6,847,664	16,347,700
Oil & Gas Production	28,881,450	14,374,404
Other*	10,425,888	1,978,200
Annual totals	5,928,172,705	5,857,774,822

\*Uncategorized as to water user group



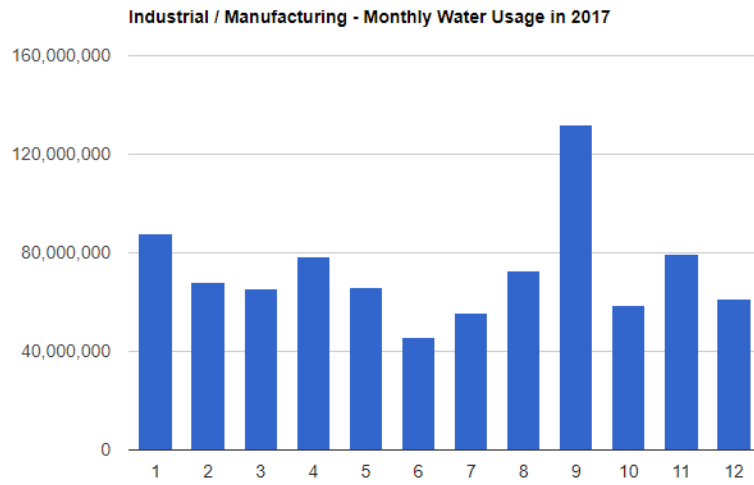
## **Monthly Water Usage by Sector – Municipal/Public Water Supply (2017)**



Month	Usage
1	366,621,760
2	319,646,644
3	360,646,614
4	364,295,045
5	439,426,608
6	417,321,121
7	511,070,191
8	482,990,764
9	495,616,786
10	435,218,995
11	389,206,247
12	396,830,681
Total	4,978,891,456



## Monthly Water Usage by Sector – Industrial/Manufacturing (2017)

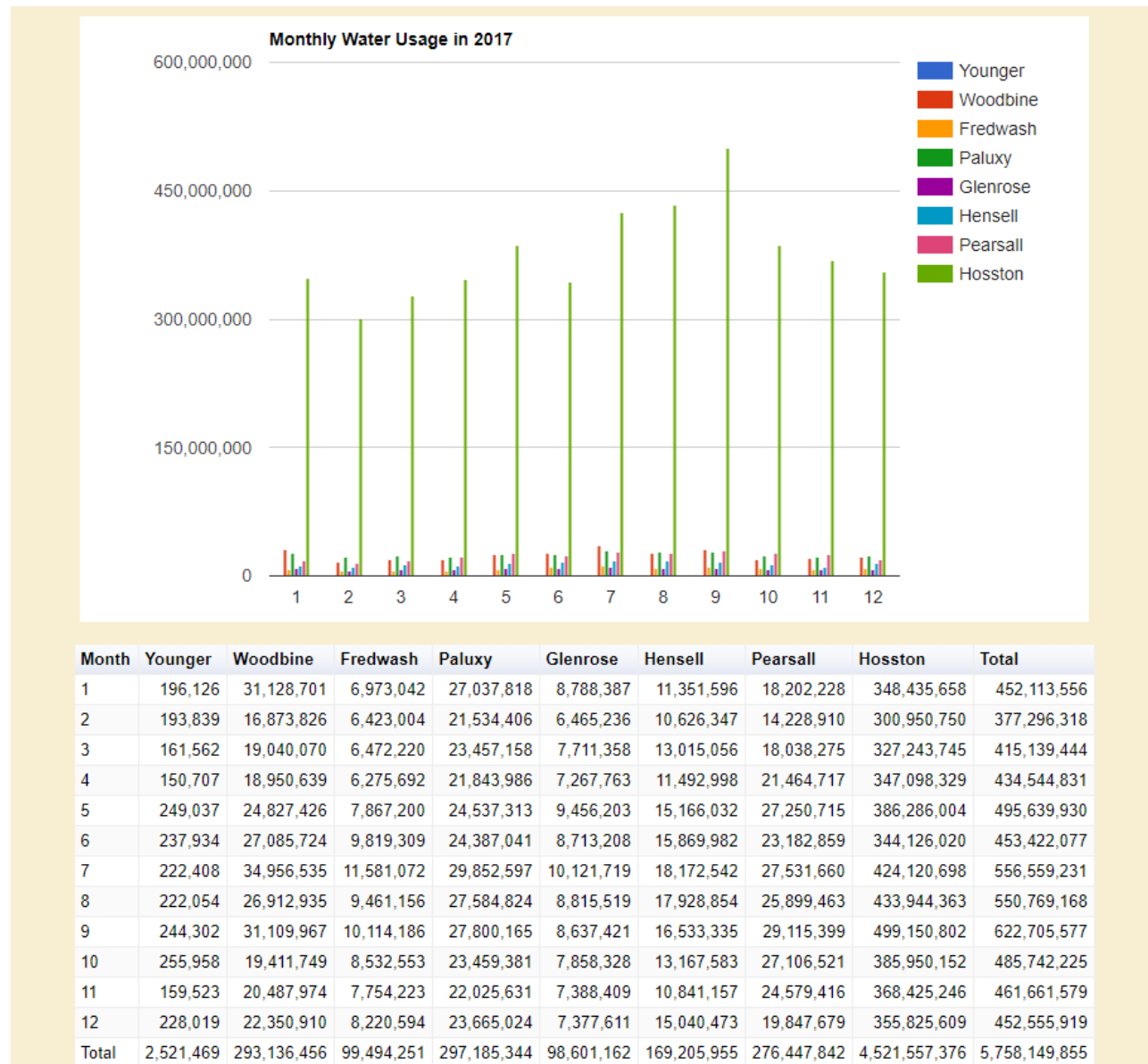


Month	Usage
1	87,776,940
2	67,927,089
3	65,481,438
4	78,184,965
5	65,749,884
6	45,744,643
7	55,423,732
8	72,536,272
9	131,895,018
10	58,636,510
11	79,643,080
12	61,048,025
Total	870,047,596

## Groundwater Usage by Aquifer

One of the goals of the database is the ability to determine groundwater usage by aquifer. The following graph depicts usage reported by the aquifer being accessed.

## Monthly Water Usage by Aquifer

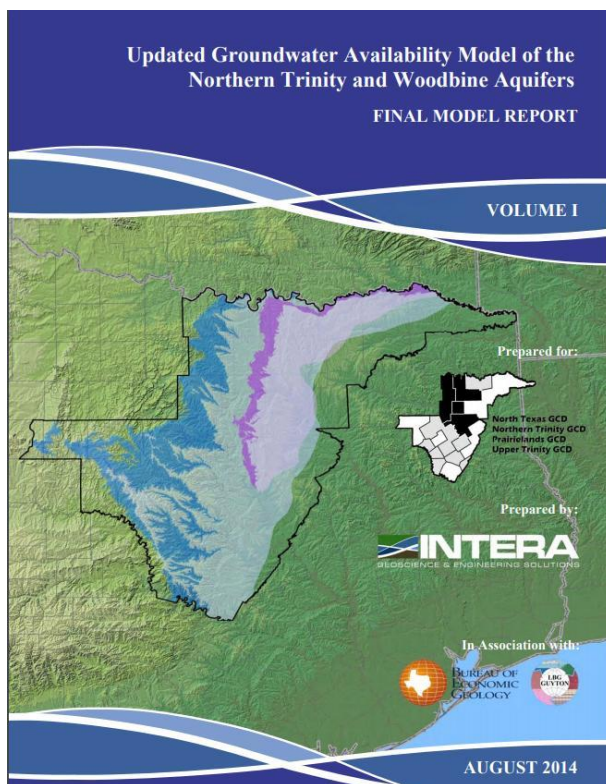


## **Methodology to Determine Production from Exempt Wells**

*A.4. - Management Objective: The District will develop a methodology to quantify current and projected annual groundwater production from exempt wells.*

*A.4. - Performance Standard: The District will provide the TWDB with its methodology and estimates of current and projected annual groundwater production from exempt wells. The District will also utilize the information in the future in developing and achieving desired future conditions and in developing and implementing its production allocation and permitting system and rules. Information related to implementation of this objective will be included in the Annual Report to the Board of Directors*

It has been recommended by the District's consulting hydrogeologist, LBG-Guyton Associates, that the District use the same methodology and estimates of current and projected annual groundwater production from District-defined exempt wells as was used in the TWDB-adopted Northern Trinity/Woodbine Groundwater Availability Model ("NTWGAM"). This methodology is consistent with that used by the TWDB, historically, and based on projected changes in population and the distribution of domestic and livestock wells in the area using census block data to estimate population distribution. In addition, TWDB and Texas Department of Licensing and Regulation ("TDLR") well and geospatial land use databases will also be utilized in determining spatial distribution of exempt water use.



## Controlling and preventing waste of groundwater

### **Metering, Reporting, Usage Fees, and Compliance Monitoring**

*B.1. - Management Objective: Each year the District will monitor annual production from all non-exempt wells within the District.*

*B.1. - Performance Standard: The District will require installation of meters on all non-exempt wells and reporting of production to the District. The annual production of groundwater from non-exempt wells will be included in the Annual Report provided to the Board of Directors.*

Prairielands Groundwater Conservation District requires all non-exempt wells to have meters installed and maintained on each wellhead. The District records the meter readings in its database and determines production within the District. Based upon the meter readings, the *Temporary Rules* further require well owners to record the amount of groundwater produced from their wells and to report the amount of groundwater production to the District on either a semi-annual or monthly basis. The District's estimate of the total amount of production from non-exempt wells in 2017 is 5,928,172,705 gallons.

*B.2. - Management Objective: The District will encourage the elimination and reduction of groundwater waste through the collection of a water use fee for non-exempt wells within the District.*

*B.2. - Performance Standard: Annual reporting of total groundwater used and total water use fees paid by non-exempt wells will be included in the Annual Report provided to the Board of Directors.*

In 2017, Prairielands GCD encouraged elimination and reduction of groundwater waste by collecting water use fees for non-exempt wells, identifying and investigating compliance issues, and looking for instances of potential waste of groundwater. The District charges a fee rate of \$0.20 per 1,000 gallons for non-exempt usage. There is an additional \$0.10 per 1,000 gallons for transporting water out of the District. There is a 10% discount for any non-exempt well owner that reports their meter readings monthly online through our database, and there is a 3% flushing discount for well owners required by TCEQ to flush their lines. Although Prairielands GCD's financial audit for 2017 will not occur until later in 2018, a "pre-audit" total of \$1,065,000 was paid to the District in total groundwater use fees in 2017.

*B.3. - Management Objective: The District will identify well owners that are not in compliance with District well registration, reporting, and fee payment requirements and bring them into compliance.*

*B.3. - Performance Standard: The District will compare existing state records and field staff observations with the well registration database to identify noncompliant well owners.*

Several compliance issues were encountered in 2017, most of which were for failure to report water production and pay water use fees on time. There were two cases where a well was not properly registered before drilling, and one non-exempt well found that had not been reporting to the district. The district collected \$1,859.63 in late fees and civil penalties.

*B.4. - Management Objective: The District will investigate instances of potential waste of groundwater.*

*B.4. - Performance Standard: Report to the Board as needed and include the number of investigations in the Annual Report.*

During 2017, there was one report of groundwater waste that required district staff attention. Upon investigation, the complaint was deemed unfounded.



*Typical water meter*

## Addressing conjunctive surface water management issues

### **State and Regional Water Planning Review and Participation**

*C.1. - Management Objective: The District will actively participate in the Region C and Region G regional water planning processes to stay abreast of water demand projects and supply strategies in the District and to coordinate the District's groundwater management strategies with the regional water planning groups and foster an understanding of regional management practices.*

*C.1. - Performance Standard: The District will review the most recently approved State Water Plan to gain an understanding of water demand projections and supply strategies in the District. The District will monitor future proposed amendments to the Region C and Region G regional water plans as they pertain to the District and insure that supply strategies impacting groundwater resources in the District are identified in the appropriate regional water plan. The District's General Manager or designated representative will attend meetings of the Region C and Region G regional water planning groups when feasible. A summary of the District's interactions with the regional water planning groups will be included in the Annual Report provided to the Board of Directors.*

The Board of Directors, General Manager, and PGCD staff all strive to stay informed on any matters related to groundwater supply in Ellis, Hill, Somervell and Johnson counties. Critical sources of pertinent information include familiarity and understanding of regional and state water plans, and attendance and participation in the Region C and Region G Water Planning Groups quarterly meetings.

The Board President and General Manager reviewed the 2017 State Water Plan (which was published in mid-2016) and continued to stay abreast of proposed amendments to the Region C and G regional water plans so that supply strategies impacting groundwater resources in the District were properly identified.

Additionally, the District attempts to have a representative at each of the Region C & G water planning group meetings. The Public Relations & Education Administrator attended both Region C meetings held in 2017 on May 22 and December 18. The Board President serves as a voting member of the Region G Water Planning Group and attended two of the three 2017 meetings on April 5 and August 16.

*C.2. - Management Objective: The District will: 1) seek to better understand groundwater and surface water interactions, including groundwater base flow discharges to surface water courses and aquifer recharge from surface water flows; 2) identify existing and planned surface water and other alternative supplies to meet anticipated demand growth; 3) explore possible groundwater to surface water conversions in the district and facilitate the process, and 4)*



*understand current and planned surface water supplies and how they affect groundwater demands.*

*C.2. - Performance Standard: A summary of the progress and interaction with RWPGs will be included in each Annual Report.*

The District's interactions with the regional water planning groups not only included attendance and participation in meetings but coordination with the groups to keep them up-to-date on groundwater-related activities in Ellis, Johnson, Hill and Somervell counties as well. The District is able to assist the groups with groundwater usage amounts included in regional water plans.

Beyond interacting with the RWPGs at regional meetings, the General Manager, as chair of the Texas Water Conservation Association Groundwater Panel, selected the chair, and then served as a member, of the association's Groundwater Committee which met during the legislative interim to discuss and develop strategies for the upcoming legislative session. Additionally, he served on the Legislative Committee of the Texas Alliance of Groundwater Districts and was actively engaged in meeting with lawmakers and advising legislative planning group subcommittees studying the various proposed bills related to groundwater issues.



## Addressing natural resource issues

### **Injection Wells/Oil and Gas**

*D.1. - Management Objective: The District will develop a program to monitor and assess injection well activities in the District.*

*D.1. - Performance Standard: The District will monitor and review injection well applications filed with the Railroad Commission of Texas and the Texas Commission on Environmental Quality that propose injection wells to be located within the boundaries of the District to identify contamination threats to groundwater resources in the district. The General Manager will bring to the attention of the Board any applications that the General Manager determines in his discretion threaten the groundwater resources in the district and any outcomes of actions taken by the District will be included in each Annual Report.*

In 2017, Prairielands GCD addressed natural resource issues that impacted the use and availability of groundwater and which are impacted by the use of groundwater. District activities fell into three categories:

1. Monitoring and assessing injection well activities in the district,
2. Monitoring compliance by oil and gas companies with District registration, metering, production reporting, and fee payment requirements, and
3. Participating in the 85<sup>th</sup> Session of the Texas Legislature.

### **Injection Well Application Monitoring**

The District developed an effective Underground Injection Control (“UIC”) monitoring program that included the review of all applications for injection wells proposed to be located within the District’s boundaries to ensure injection well activities do not endanger groundwater resources. Because the Railroad Commission of Texas (“RCT”) does not provide notification of injection well applications filed with the RCT to groundwater conservation districts, the District retained an outside contractor, *Statewide Plat Services*, to monitor all injection well applications filed with the RCT and notify the District and District’s legal counsel of each injection well application proposed to be located within the District’s boundaries.

Upon receiving a copy of an injection well application, District staff performs an internal review of the injection well application to identify the GPS location and examine the pressures, depths, and volumes relative to the completion of the well. If the District’s legal counsel determines the injection well application warrants further technical review, it is submitted to the District’s UIC technical consultants to perform an in-depth review of the application to ultimately determine whether the proposed injection well is a possible source of contamination of protected groundwater resources. In the event such a risk does exist, the District’s legal counsel seeks authorization from the District to initiate a protest on behalf of the District at the

RCT against the injection well application. The District works with injection well applicants to modify or abandon the application in a manner that ensures that groundwater resources are adequately protected. During 2017, the District did not receive any UIC applications.

*D.2. - Management Objective: The District will monitor compliance by oil and gas companies of the well registration, metering, production reporting, and fee payment requirements of the District's rules.*

*D.2. - Performance Standard: As with other types of wells, instances of non-compliance by owners and operators of water wells for oil and gas activities will be reported to the Board of Directors as appropriate for enforcement action. A summary of such enforcement activities will be included in the Annual Report.*

Only one instance of non-compliance was found in 2017 with oil and gas activities. It was quickly handled and did not advance past the initial penalty stage.

## Addressing drought conditions

### **Drought Conditions & Monitors**

*E.1. - Management Objective: Monthly review of drought conditions within the District using the Texas Water Development Board's Monthly Drought Conditions.*

*E.1. - Performance Standard: An annual review of drought conditions within the District will be included in the Annual Report provided to the Board of Directors. Reports will be provided more frequently to the Board as deemed appropriate by the General Manager to timely respond to drought conditions as they occur.*

Throughout 2017, Prairielands staff provided U.S. Drought Monitors for Texas and water usage reports to the Board of Directors during each month's Regular Board Meeting. The Board and staff kept up to date on drought conditions not only in the district, but also in the state of Texas and southern region of the United States. The monitors and usage reports were compared periodically to look for any correlation between the drought conditions and pumping amounts within the district. There appeared to be little correlation between drought conditions and increased pumpage. Pumpage in the district follows annual seasonal needs.

# Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, and brush control

## **Conservation and Public Awareness**

*F.1. - Management Objective: The District will annually submit at least one article regarding water conservation, rainwater harvesting, or brush control for publication to at least one newspaper of general circulation in the District counties.*

*F.1. - Performance Standard: Each year, a copy of each conservation article will be included in the District's Annual Report to be given to the District's Board of Directors.*

Press releases of various District activities were sent to newspapers in all four counties throughout the year: *Johnson County Times, Cleburne Times-Review, Glen Rose Reporter, Hillsboro Reporter, Midlothian Mirror, and the Waxahachie Daily Light*. Copies of the submitted articles follow along with the newspaper clippings of items published in 2017.



*Prairielands GCD Water Education Trailer*

## Press Release

### Contact

Karen Siddall

(817) 556-2299

[karensiddall@prairielandsgcd.org](mailto:karensiddall@prairielandsgcd.org)

### Covington Science Classes Host Prairielands Water Education Trailer

Cleburne, TX

March 13, 2017 – For Immediate Release

The Prairielands Groundwater Conservation District Water Education trailer visited students in Covington ISD this past Thursday. Science teacher, Tracie Stewart, invited the district to come and speak to students about groundwater, aquifers, and water conservation on March 9 as part of this year's National Groundwater Week, March 5 -11.

"The Water Education trailer is a great tool to help students understand the water cycle and especially about the groundwater hidden in the geologic formations beneath our feet," said Karen Siddall, public relations and education administrator for the district. "This resource is vital to our area and it is critical that our future landowners understand how it acts, how it recharges, and how to conserve it today so that it is still available tomorrow."

The Water Education trailer is available for school and community organization presentations and public events in Hill County at no charge. To check availability, contact Prairielands Groundwater Conservation District at 817-556-2299 or email [karensiddall@prairielandsgcd.org](mailto:karensiddall@prairielandsgcd.org).

## Press Release

### Contact

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### Weather or Not to Water - Cleburne

Cleburne, TX

June 30, 2017 – For Immediate Release

After 2 years of heavy spring rains, and pretty regular storm clouds in the sky lately, water conservation may not be much of a topic of conversation these days. However, conditions of plenty can change very quickly in our area: just look back at May. Although May is historically our wettest month of the year with an average rainfall of 4.84 inches, May of 2017 was almost record dry across our area with only 1.21 inches recorded in Cleburne. (Of course, then came June with a respectable 4.79 inches recorded.)

May usually ushers in our driest, hottest months in North Central Texas. Our biggest water output during this time is for outdoor watering. To avoid the “sticker shock” of a high water bill and still keep your yard at its healthiest, it is important to know how to tell when your landscape needs supplemental watering.

#### When do you need to water?

For two of our area’s most popular warm-season grasses, Bermuda and St. Augustine, one way to determine if it is time to water is by inspection of the blades of grass themselves. If your Bermuda grass lawn presents wilting leaves and a blue-gray color throughout, that is a good indication of drought stress; your yard could use supplemental watering. If your St. Augustine grass has a dull, bluish color, rolled or folded leaves, and footprints tend to retain their shape after you’ve walked across your lawn, it is showing signs of drought stress as well. Time for you to water.

#### How much/how long do you need to water?

Of course, each yard will be different. However, the following principles will apply to all turf grasses. Deep infrequent watering creates deep roots. Shallow frequent watering creates short roots. As water evaporates from the soil surface, short-rooted plants and lawns will need water more often. Deep-rooted plants and lawns will be able to absorb water from the deeper soil, over a longer period of time. This approach also reduces disease, helps insure good air movement down to the root system, and conserves water. Water lawns slowly, allowing water to reach a depth of 6 inches.

As for how long this will take, again, each yard will be different. Try watching and measuring how long it takes for your sprinkler to fill a standard sized tuna can (or cat food can) with one inch of water as it sweeps across the yard. If water starts running off your lawn before hitting the one-inch mark, pause the process to allow the water to soak into the underlying soil, before continuing. Note the amount of time before you paused and the amount of time you needed to wait before continuing. You may need to



pause more than once. But once you've successfully captured one inch of water in your catch can, you can determine your watering pattern for your individual yard. Just reproduce what you did to get one inch of water on your lawn, then stop.

#### **What time do you need to water?**

Since 50-60% of your irrigation can be lost to evaporation, it is best to water when that is less likely to happen. Whenever possible, water between midnight and 8:00 a.m.

#### **What about automatic sprinkler systems?**

You need to understand how to operate, set, and re-program your automatic sprinkler system. Determine how much water your system discharges (as described previously) and set the timing of the various zones in your configuration to water what is needed for your type of grass, groundcovers, shrubs, and trees. As your landscape matures, the height of some of your plantings may even necessitate changes in your head placements as the spray patterns become blocked or altered. Keep an eye on those heads and replace those that break.

#### **What about planting native plants or those that are adapted to our climate?**

Incorporating native or adapted plants to areas in your yard can help you build a more sustainable landscape. These plants typically use less water, have fewer issues with pests, and thrive in less-than-perfect soil conditions. Along with less water, they also require less pesticides, herbicides, and fertilizer.

An excellent online tool to help you refresh your yard using native and adapted plants is the Texas SmartScape website ([www.txsmartscape.com](http://www.txsmartscape.com)). This website is free and has online landscape design functions and an easy-to-use, and frequently updated, plant database developed just for the North Central Texas area.

#### **How much time will this take?**

Considering the above changes to some of the ways you may be maintaining your yard, you're going to be spending less time watering and doing yard work. You'll have more time to just sit back and enjoy your beautiful yard while conserving water and saving money on your water bill.

For more information on these tips and others, visit the Prairielands GCD website at [www.prairielandsgcd.org](http://www.prairielandsgcd.org) or call (817) 556-2299. The Prairielands GCD office is located in the Liberty Hotel, 205 S. Caddo St., Cleburne, TX, 76031.

## Press Release

### Contact

Karen Siddall

(817) 556-2299

[karensiddall@prairielandsgcd.org](mailto:karensiddall@prairielandsgcd.org)

### Make It A Year of Learning New Habits

Cleburne, TX

August 15, 2017 - For Immediate Release

School is back in session and while our little darlings are mentally geared up for getting back into the school morning routine, why not have them develop a new habit to conserve water and save some of your hard-earned money on the water bill?

If they are not already doing so, get the kids to turn off the water while they are brushing their teeth. If they're brushing as long as the dentist recommends, this could save more than four gallons of water every brushing session.

Here's how –

The faucet in the bathroom typically puts out a little over two gallons for every minute it runs. The dentist wants us to brush our teeth for two minutes. If you let the water run for the two minutes you're actually brushing, it's going straight down the drain unused and unneeded. Two gallons of water flowing for two minutes adds up to a total of four gallons (plus a little more) wasted!

Getting your toothbrush wet and then rinsing and cleaning up after brushing takes around 30 seconds of water flow or only one gallon of water. So, by turning off the tap between wetting the brush and cleaning up, you'll save that unneeded four gallons of water.

If that still seems like a lot of water to you to just brush your teeth, use a cup in the bathroom. Fill the cup and use water from that to wet the brush, rinse, and clean up instead. You just went from one gallon down to one cup of water use!

For more water-saving tips, visit the Prairielands Groundwater Conservation District website at [www.prairielandsgcd.org](http://www.prairielandsgcd.org) (click on "BROCHURES") or follow us on Facebook!

## Press Release

### Contact

Karen Siddall

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### Is There a Vampire in Your House?

Cleburne, TX

October 24, 2017 – For Immediate Release

With Halloween just around the corner, now might be the time to check for the vampire living at your house.

You didn't know there was a vampire at your house? Well, he's not all sparkly, and he really doesn't play by the vampire rules either. This guy is the one that preys on your plumbing and slowly, but surely, sucks your hard-earned money out of your wallet each and every month when you pay your water bill.

According to the US Environmental Protection Agency, the average household's water leaks can account for more than 10,000 gallons of water wasted every year and ten percent of homes have leaks that waste 90 gallons or more per day. That kind of water loss can really add up on your water bill.

Some of these leaks are easy to detect; you can see or hear them. There's that leaky faucet in the kitchen or the showerhead that won't quite turn completely off or, even more often, the toilet that continues to run sometimes after you flush if you don't remember to jiggle the handle just right. Thankfully, these types of problems are easy to correct, and many you can do yourself. No need to call in expert assistance! There's even YouTube videos for this.

Unfortunately, there are hidden or ghostly leaks as well. You don't see or hear them but they're there... lurking...waiting...

Some of these are easy to fix yourself. However, a couple may require you to call in ghoulish friends.

**Toilet tank** – You can usually see or hear leaks that cause water to move in the bowl or tank but there is a silent leak that is common to toilets caused by a deteriorating or improperly sealing flapper. The flapper keeps the water in the upper tank from seeping into the bowl below. You can check condition of the seal made by the flapper by coloring the water in the tank with a small amount of food coloring or Kool-Aid. Do not use the toilet for 10 minutes. Then check the color of the water in the bowl, if it is now the same color as the water in the tank the flapper needs to be replaced. (It is possible that the flapper and valve just need to be wiped free of any buildup to properly seal again.) Be sure to flush the dyed water away after this to keep from staining the tank or bowl.

**Hot water heater** – Your water heater can also be a hidden source of leaks, if it is installed out of the line of sight. Most commonly leaks can appear at the drain valve (the spigot used to drain the water from the bottom of the tank), the temperature and pressure relief valve, and even from the bottom of the

tank itself as it gets old. Unfortunately, water heater leaks can affect your wallet 3 different ways: not only in on your water bill and for repairs and replacement, but if the leak was on the hot water line, your energy bill can take a hit as well. Minor fixes you may want to tackle on your own, others may require a professional.

Outdoor faucet or hose bib – Leaks associated with your outdoor faucet, although visible, just may not be where you conduct your normal, everyday activities allowing them to go undetected for quite a while. Make sure the water is turned off at the hose bib especially if a hose is still attached, and not just at a nozzle on the hose. Disconnect, empty, and store garden hoses for the off-season. Be sure to wrap outdoor faucets as the temperatures dip!

Sprinkler system – Sprinkler heads and their supply grid are all subject to leaks. It's long been a common practice to inspect, repair, and perform maintenance on the landscape sprinkler system in the early spring before putting it back in service. But checking its integrity before putting it in "off-season" mode makes sense as well. If you're not out enjoying your yard during the winter, you're less likely to observe standing water from a leaking system. Check the settings on the controller to make certain it is only running when and where you need it. Turn each sprinkler zone on and check for low pressure or water bubbling from the ground or irrigation components. This means your system has sprung a leak somewhere. Don't forget to check your backflow and solenoid valves for drips.

If you still feel like you're in the dark about what may be sucking you dry, you may want to try checking the house as whole for water loss. Investigate this by, first, reading your water meter. Wait 15 minutes without using any water in the house and then go back and read your meter. (You may need to stop appliances that use water automatically like a standalone ice maker or an ice maker in your refrigerator/freezer from cycling.) If you show water usage after only this length of time, you've got a pretty good leak going somewhere. Extend your waiting period to 2 hours and even slower leaks will become apparent. If you've checked all your water-using appliances and fixtures already, the leaks you're probably facing at this point may be in the water supply lines between the meter and the house or under your foundation, and time to call in a plumbing professional.

For more information on these tips and others, visit the Prairielands GCD website at [www.prairielandsgcd.org](http://www.prairielandsgcd.org) or call (817) 556-2299. The Prairielands GCD office is located in the Liberty Hotel, 205 S. Caddo St., Cleburne, TX, 76031. In addition, most water service providers can also provide more detailed information on leak detection in your home as well as water conservation.

## **Press Release**

### **Contact**

Karen Siddall

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[karensiddall@prairielandsgcd.org](mailto:karensiddall@prairielandsgcd.org)

**Keep Some Jingle in your Pocket this Holiday Season!**

Cleburne, TX

November 27, 2017 – For Immediate Release

### **Water Saving Tips for the Holidays**

Over the holidays, with more time at home and more visitors in the house, our water bill can really take a hit. More cooking, more showering, (more flushing!) all require more water than what we normally use. Since the water bill in winter tends to be lower than other times of the year, because few of us are watering our lawns then, the increase in consumption around the holidays can be masked.

However, here are a couple of things that can be done around the holidays to save water and keep some of the jingle in our pocket rather than sending it out the door with a water bill.

### **Getting in the holiday spirit**

Switch to a reusable artificial tree this year – no watering!

We're more likely to notice water leaks indoors, so while putting up the outdoor lights, don't forget to check outdoor faucets, sprinklers, and hoses. And if really cold weather is anticipated, cover up and insulate that outdoor faucet.

While you're out there, find out where your master water shut off valve is located and how to turn it off in case of a leak. This could save water and prevent damage to your home.

As that final touch for upping your Christmas curb appeal, use a broom instead of a hose to clean your driveway and sidewalk.

Then before you put the big, red bow or antlers and red nose on the car, use a commercial car wash that recycles water.

### **Holiday feasting**

Don't use running water to thaw food. Defrost food in the refrigerator for water efficiency and food safety.

Wash fruit and vegetables in a pan of water rather than running water from the tap.

Use the garbage disposal sparingly. Compost vegetable food waste instead and save gallons of water every time you would have used it.

Soak pots and pans instead of letting the water run while you scrape them clean.

Keep in mind that a dishwasher uses less water to clean a full load of dishes than doing them by hand. Energy Star™ dishwashers use between 4 and 6 gallons of water per load depending on the cycle selected. If washing dishes by hand is necessary, fill the sink and rinse the dishes when they have all been scraped and scrubbed.

#### **Family at home**

Turn off the water while you brush your teeth and save around two gallons per minute. If you brush for the full two minutes that the dentist recommends, that's a water savings of almost four gallons every time you brush. (That's enough for a dishwasher session.)

Adhere to using one glass for water per person per day. Each person reusing their glass cuts down on the number to wash.

For cold drinks, keep a pitcher of water in the refrigerator instead of running the tap.

When running a bath, plug the tub before turning the water on, then adjust the temperature as the tub fills up. However, a short shower uses less water than a full bath.

When doing laundry, match the water level to the size of the load.

Small adjustments such as these will bring reductions in your daily water consumption. But more importantly, their daily practice can lead to them becoming long-term habits. Over time, these habits can add up to some significant savings on your water bill letting you keep those savings jingling in your pocket rather than flowing down the drain.

For more information about water conservation, visit the Prairielands Groundwater Conservation District website at [www.prairielandsgcd.org](http://www.prairielandsgcd.org).



## Press Release

### Contact

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### Happy Holiday Dishes!

Cleburne, TX

November 30, 2017 – For Immediate Release

So you're going to have the family over for a holiday meal or snacks and drinks. Besides the all-important menu, preparation will include deciding on dinnerware and utensils for the event – paper or reusable, extra garbage or washing up after.

Paper and plastic may be the answer for saving time better spent with family. However, cleaning up dishes afterwards and sharing leftovers with family members may be part of your holiday memories and routine. And using reusable plates and utensils will save you both money and water in the long run.

### Handwashing vs. Dishwasher

Studies have shown that dishwashers, especially those with the Energy Star™ rating, use less water to clean a full load of dishes than doing them by hand. Energy Star™ dishwashers use between four and six gallons of water per load depending on the cycle selected. Four gallons of water in a standard-sized sink doesn't get you very far when handwashing a lot of dirty dishes, pots, and pans. And as for rinsing, every minute of water you run from the tap, two gallons are going down the drain.

**Water Conservation Tip:** If washing dishes by hand is necessary, wash them inside the largest pot you've used to cook your meal (like your turkey roaster). Rinse everything at once by starting with the largest pot. Put clean water in it to rinse the rest of the dishes.

For more information about water conservation, see the [Prairielands Groundwater Conservation District](http://www.prairielandsgcd.org) website at [www.prairielandsgcd.org](http://www.prairielandsgcd.org).

## Press Release

### Contact

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### New Year's Resolution for Water Conservation

Cleburne, TX

December 27, 2017 – For Immediate Release

As the holidays come to a close and a new year approaches, thoughts inevitably turn to making resolutions for the future. This year, along with all our weight loss, exercise, and financial goals, why not include a couple of long-term money-savers in the mix.

If you're on Facebook, you've seen the "Save a penny today, Double it tomorrow and so on" scheme that will eventually net you a pretty good-sized payoff come the end of the year. But what if you could make a few household adjustments that, once completed, would net you savings every time you turned on the tap?

#### Small change

Number 1: Install an aerator on every faucet in your home. (And check and rinse out those already in use.) An aerator is the little screw-on device on your faucet where the water comes out. Aerators slow the flow of water coming out to a consistent 1.6 - 2.2 gallons per minute, and can be found at the local hardware/home improvement store for as little as a dollar. They even have special little wrenches for those that need some help with removal. Restricting the flow with an aerator limits the volume and increases the pressure of the water coming out. You'll use less water per minute you have it running but it will be a stronger, more effective stream.

Number 2: Get a shower timer. You may be surprised at how long you actually stay in the shower, and reducing that time can add up to some decent water savings. Actually, the US Environmental Protection Agency estimates that average shower is in the 7 to 10-minute range. Obviously, my teenage son (for whom a 30-minute shower was not unheard of) was not included in that survey population.

Shower timers are available online for as little as \$3 for a manual "sand in the hourglass" version that runs down from a 5 minute shower to higher tech types that will even restrict the water flow when time is up for around \$150 and more.

Number 3: If your shower fills a one-gallon bucket in less than 20 seconds, replace the showerhead with a water-efficient model. Water Sense-certified showerheads (they'll have a label) have been tested and determined to reduce the volume of water coming out to no more than 2.2 gallons per minute. That way, your 10-minute shower is now a 22-gallon shower. (Typically, a short shower uses less water than filling up the tub as a full-sized bathtub holds up to 75 gallons.) New showerheads range in price but you can pick them up at the hardware store/home improvement center for under \$20. Even some of the large "rainstorm" style showerheads are Water Sense™-certified.

### Chunk o'change

Number 4: Replace the old toilet with a new low-flow, high-efficiency model. This is a product that has really improved its performance since first being introduced. Most notable of those improvements is the flushing and clean evacuation of the contents in the bowl. The top complaint about the early models was that users had to flush 2 or 3 times to accomplish what the old models did in one – negating any water or money-savings in the process. But now, one flush is all that's required, and there are a variety of designs, bowl shapes, and seat heights on the market for a price range of under \$100 to high-end units over \$500.

Number 5: Replace the older dishwasher with one with an Energy Star™ rating. Although older dishwashers only used between 10 and 12 gallons of water per cycle, advancements in dishwasher and dishwasher detergents have gotten those totals down to four to six gallons depending on the cycle and the condition (how dirty the dishes are) of the load. Pricing these dishwashers at a variety of local appliance outlets revealed that you can obtain one of these Energy Star™ rated dishwashers for less than \$250. And water savings isn't the only plus, as the name implies, you're going to use less electricity as well.

Number 6: Replace the older washing machine - Back in grandma's day, a load of washing would require about 40 gallons of water to get the job done, however, improvements in laundry technology – both from a mechanical standpoint and a chemical one – have cut that volume almost in half. New washers typically can do a full load of clothes in approximately 25 gallons. There are a couple of high-efficiency models with settings that can reduce the requirement to a mere 12 gallons. No matter the model though, the water conserving feature that really hits the spot is the water-level adjustment. Matching the amount of water used to the size/condition of the load saves water. Choosing an Energy Star™ unit can also save you money on your energy bill. Using a laundry detergent formulated to be used in cold water can also help get your clothes clean and reduce your energy usage. High-efficiency, Energy Star™ washers are available at numerous appliance outlets and for under \$500.

One thing to keep in mind as you consider purchasing a major appliance such as a dishwasher or washer, is timing. Most shopping sites recommend deferring these purchases to September and October to take advantage of model year changes (when manufacturers introduce their new models). Significant sales of new "last year's models" ensue. In recent years, Black Friday and pre-Black Friday sales are showing up and extending the saving opportunities into the month of November. But if the goal is to conserve water AND save money, waiting and setting aside funds for the purchase is a plan that serves both interests.

For more information about water conservation, visit the Prairielands Groundwater Conservation District website at [www.prairielandsgcd.org](http://www.prairielandsgcd.org).

## KLA students learn about water



Ashley Rose/CTR

Prairielands Groundwater Conservation District Public Relations and Education Administrator Karen Siddall teaches Kauffman Leadership Academy sophomores about water wells, groundwater and ways to conserve water on Wednesday. She said if someone leaves the water running for two minutes as they brush their teeth, about four gallons of water will come out of the faucet.

*Cleburne Times-Review, Sunday, March 12, 2017, p. 5*





**SCIENCE WATER EDUCATION TRAILER.** The Prairielands Groundwater Conservation District Water Education trailer visited students at Covington ISD recently. Science teacher, Tracie Stewart, invited the district to come and speak to students about groundwater, aquifers and water conservation recently as part of this year's National Groundwater Week.

"The Water Education trailer is a great tool to help students understand the water cycle and especially about the groundwater hidden in the geologic formations beneath our feet," said Karen Siddall, public relations and education administrator for the district. "This resource is vital to our area and it is critical that

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Pictured above is Siddall talking to Covington science students about aquifers and groundwater in front of a working aquifer model in the water education trailer.

*Hillsboro Reporter, Thursday, May 4, 2017, p. 2B*



# Weather or not to water — making the decision

SPECIAL TO THE CTR

After two years of heavy spring rains, and pretty regular storm clouds in the sky lately, water conservation may not be much of a topic of conversation these days.

However, conditions of plenty can change quickly in our area: just look back at May.

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Courtesy photo

shape after you’ve walked across your lawn, it is showing signs of drought stress as well. Time for you to water.

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over a longer period of time. This approach also reduces disease, helps insure good air movement down to the root system, and conserves water. Water lawns slowly, allowing water to reach a depth of 6 inches.

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before continuing.

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But once you’ve successfully capture one inch of water in your catch can, you can determine your watering pattern for your individual yard. Just reproduce what you did to get one inch of water on your lawn, then stop.

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*Cleburne Times-Review, Thursday, July 6, 2017, p. 5*





**WATER CONSERVATION HIGHLIGHTED.** Water conservation was the focal point of the Thursday, July 20, edition of the summer reading program as the Hill County Extension Office and the Prairielands Ground-water Conservation District combined efforts to engage attendees on the topic.

Pictured above are area students taking advantage of the water conservation trailer.

The Hillsboro City Library sponsored program will continue Thursday, July 27, at 2 p.m. with a visit from KWTX meteorologist Brady Taylor.

*Hillsboro Reporter, Monday, July 24, 2017, p. 5*



# Make it a year of learning new habits



Courtesy photo

**Turning the tap off while brushing your teeth can save up to four gallons of water or more.**

## SPECIAL TO THE CTR

School is back in session and while our little darlings are mentally geared up for getting back into the school morning routine, why not have them develop a new habit to conserve water and save some of your hard-earned money on the water bill?

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Here's how:

The faucet in the bathroom typically puts out a little over 2 gallons for every minute it runs. The dentist wants us to brush our teeth for two minutes. If you let the water run for the two minutes you're actually brushing, it's going straight down the drain

unused and unneeded. Two gallons of water flowing for two minutes adds up to a total of four gallons (plus a little more) wasted.

Getting your toothbrush wet and then rinsing and cleaning up after brushing takes around 30 seconds of water flow or only one gallon of water. So, by turning off the tap between wetting the brush and cleaning up, you'll save that unneeded four gallons of water.

If that still seems like a lot of water to you to just brush your teeth, use a cup in the bathroom. Fill the cup and use water from that to wet the brush, rinse, and clean up instead. You just went from one gallon down to one cup of water use.

For more water-saving tips, visit the Prairielands Groundwater Conservation District website at [www.prairielandsgcd.org](http://www.prairielandsgcd.org) (click on "BROCHURES") or follow PGCD on Facebook.

*Cleburne Times-Review, Thursday, August 17, 2017, p. 5*



## Keep some jingle in your pocket this holiday season

Over the holidays, with more time at home and more visitors in the house, our water bill can really take a hit. More cooking, more showering, (more flushing!) all require more water than what we normally use.

Since the water bill in winter tends to be lower than other times of the year, because few of us are watering our lawns then, the increase in consumption around the holidays can be masked.

However, here are a couple of things that can be done around the holidays to save water and keep some of the jingle in our pocket rather than sending it out the door with a water bill.

### Getting in the holiday spirit

Switch to a reusable artificial tree this year – no watering.

We're more likely to notice water leaks indoors, so while putting up the outdoor lights, don't forget to check outdoor

faucets, sprinklers, and hoses. And if really cold weather is anticipated, cover up and insulate that outdoor faucet.

While you're out there, find out where your master water shut off valve is located and how to turn it off in case of a leak. This could save water and prevent damage to your home.

As that final touch for updating your Christmas curb appeal, use a broom instead of a hose to clean your driveway and sidewalk.

Then before you put the big, red bow or antlers and red nose on the car, use a commercial car wash that recycles water.

### Holiday feasting

Don't use running water to thaw food. Defrost food in the refrigerator for water efficiency and food safety.

Wash fruit and vegetables in a pan of water rather than running water from the tap.

Use the garbage disposal sparingly. Compost vegetable

food waste instead and save gallons of water every time you would have used it.

Soak pots and pans instead of letting the water run while you scrape them clean.

Keep in mind that a dishwasher uses less water to clean a full load of dishes than doing them by hand. Energy Star dishwashers use between 4 and 6 gallons of water per load depending on the cycle selected. If washing dishes by hand is necessary, fill the sink and rinse the dishes when they have all been scraped and scrubbed.

### Family at home

Turn off the water while you brush your teeth and save around two gallons per minute.

If you brush for the full two minutes that the dentist recommends, that's a water savings of almost four gallons every time you brush. (That's enough for a dishwasher session.)

Adhere to using one glass for water per person per day. Each person reusing their glass

cuts down on the number to wash.

For cold drinks, keep a pitcher of water in the refrigerator instead of running the tap.

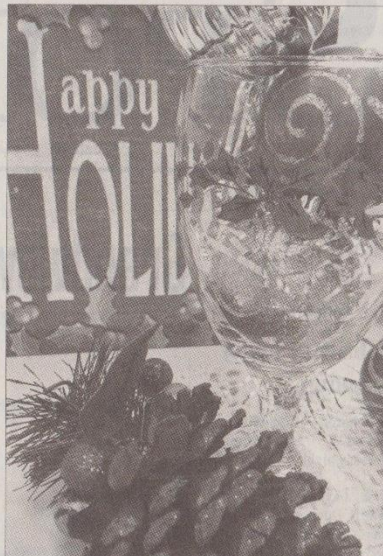
When running a bath, plug the tub before turning the water on, then adjust the temperature as the tub fills up. However, a short shower uses less water than a full bath.

When doing laundry, match the water level to the size of the load.

Small adjustments such as these will bring reductions in your daily water consumption. But more importantly, their daily practice can lead to them becoming long-term habits.

Over time, these habits can add up to some significant savings on your water bill letting you keep those savings jingling in your pocket rather than flowing down the drain.

For more information about water conservation, visit the [Prairielands Groundwater Conservation District website](http://www.prairielandsgcd.org) at [www.prairielandsgcd.org](http://www.prairielandsgcd.org).



Courtesy photo

*Cleburne Times-Review, Thursday, November 30, 2017, p. 5*

## Tips to conserve water during the new year

SPECIAL TO THE CTR

As the holidays come to a close and a new year approaches, thoughts inevitably turn to making resolutions for the future. This year, along with all our weight loss, exercise and financial goals, why not include a couple of long-term money-savers in the mix.

If you're on Facebook, you've seen the "Save a penny today, double it tomorrow and so on" scheme that will eventually net you a pretty good-sized payoff come the end of the year.

The [Prairielands Groundwater Conservation District](http://www.prairielandsgcd.org) offers tips to help you net you savings every time you turned on the tap.

### Small change

**No. 1:** Install an aerator on every faucet in your home, and check and rinse out those already in use.

An aerator is the little screw-on device on your faucet where the water comes out. Aerators slow the flow of water coming out to a consistent 1.6 to 2.2 gallons per minute, and can be found at the local hardware/home improvement store for as little as \$1. They even have special little wrenches for those that need some help with removal.

Restricting the flow with



Courtesy photo

**One thing to keep in mind as you consider purchasing a major appliance to conserve water, such as a dishwasher or aerator, is timing.**

an aerator limits the volume and increases the pressure of the water coming out. You'll use less water per minute you have it running but it will be a stronger, more effective stream.

**No. 2:** Get a shower timer. You may be surprised at how long you actually stay in the shower, and reducing that time can add up to some decent water savings.

Actually, the U.S. Environmental Protection Agency

estimates that average shower is in the seven- to 10-minute range.

Shower timers are available online for as little as \$3 for a manual "sand in the hourglass" version that runs down from a five minute shower to higher tech types that will even restrict the water flow when time is up for around \$150 and more.

**No. 3:** If your shower fills a one-gallon bucket in less than 20 seconds, replace

the shower head with a water-efficient model.

Water Sense-certified shower heads have been tested and determined to reduce the volume of water coming out to no more than 2.2 gallons per minute. That way, your 10-minute shower is now a 22-gallon shower.

New shower heads range in price but you can pick them up at the hardware store/home improvement center for under \$20. Even some of the large "rain-storm" style shower heads are Water Sense certified.

### Chunk o' change

**No. 4:** Replace the old toilet with a new low-flow, high-efficiency model.

This is a product that has really improved its performance since first being introduced. Most notable of those improvements is the flushing and clean evacuation of the contents in the bowl.

The top complaint about the early models was that users had to flush two or three times to accomplish what the old models did in one — negating any water or money-savings in the process.

But now, one flush is all that's required, and there are a variety of designs, bowl shapes and seat heights on the market for a price range of under \$100 to high-end units over \$500.

**No. 5:** Replace the older dishwasher with one with an Energy Star rating.

Although older dishwashers only used between 10 and 12 gallons of water per cycle, advancements in dishwasher and dishwasher detergents have gotten those totals down to four to six gallons depending on the cycle and the condition of the load.

Pricing these dishwashers at a variety of local appliance outlets revealed that you can obtain one of these Energy Star rated dishwashers for less than \$250. And water savings isn't the only plus, as the name implies, you're going to use less electricity as well.

**No. 6:** Replace the older washing machine. Back in grandma's day, a load of washing would require about 40 gallons of water to get the job done, however, improvements in laundry technology — both from a mechanical standpoint and a chemical one — have cut that volume almost in half.

New washers typically can do a full load of clothes in approximately 25 gallons. There are a couple of high-efficiency models with settings that can reduce the requirement to a mere 12 gallons. No matter the model though, the water conserving feature that really hits the spot is the water-level ad-

justment.

Matching the amount of water used to the size/condition of the load saves water. Choosing an Energy Star unit can also save you money on your energy bill. Using a laundry detergent formulated to be used in cold water can also help get your clothes clean and reduce your energy usage. High-efficiency, Energy Star washers are available at numerous appliance outlets and for under \$500.

One thing to keep in mind as you consider purchasing a major appliance, such as a dishwasher or washer, is timing.

Most shopping sites recommend deferring these purchases to September and October to take advantage of model year changes (when manufacturers introduce their new models).

Significant sales of new "last year's models" ensue.

In recent years, Black Friday and pre-Black Friday sales are showing up and extending the saving opportunities into the month of November. But if the goal is to conserve water and save money, waiting and setting aside funds for the purchase is a plan that serves both interests.

For more information about water conservation, visit [www.prairielandsgcd.org](http://www.prairielandsgcd.org).

*Cleburne Times-Review, Sunday, December 31, 2017, p. 3*

*F.2. – Management Objective: Each year, the District will include at least one informative flier on water conservation, rain water harvesting, or brush control within at least one mail out to groundwater non-exempt users distributed in the normal course of business for the District. The District will also consider additional fliers or initiating other public awareness campaigns and outreach efforts on water conservation during drought conditions*

*F.2. - Performance Standard: Each year, a copy of each mail-out flier or email and a summary of all other public awareness water conservation campaigns and outreach efforts will be included in the District's Annual Report to be given to the District's Board of Directors.*

As mentioned in Performance Standard F.1. above, the district developed and produced its own quarterly newsletter, the *Prairielands eLine*, that is distributed in print and electronically.

Water conservation topics covered in the *Prairielands eLine* in 2017 included the following.

**Winter 2017 Issue:**

- "Master Composter Classes Upcoming"
- "Education Trailer Visits with Somervell County Homeschoolers"
- "National Groundwater Awareness Week is March 5-11, 2017"

**Spring 2017 Issue:**

- "Draft Desired Future Conditions Adopted"
- "Prairielands Sponsors Master Composter Classes"
- "Prairielands Supports National Groundwater Week"

**Summer 2017 Issue:**

- "Glen Rose Elementary Gets WET!"

**Fall 2017 Issue:**

- "Now Scheduling Water Education Trailer School Programs"
- "Prairielands at Fall Burleson Family Camp Out"
- "Prairielands to Participate in Pioneer Days"
- "Make It a Year of Learning New Habits"



# Prairielands eLine

Prairielands Groundwater Conservation District  
www.prairielandsgcd.org

## Interim Activity and Upcoming Legislative Session

While the Texas Legislature only gathers in session every other year, that year in between (or "the interim" as it is known) is always busy for water professionals as they lay the groundwork for the next session. This interim, the Texas Water Conservation Association and the Texas Alliance of Groundwater Districts focused on a number of issues they want to take to our state's leaders.

First on the agenda is an Advisory Committee Bill which would allow Groundwater Management Areas (GMAs) to add voting or non-voting members to the GMA. The bill would also require the appointment of a joint planning advisory committee composed of the chair of each regional water planning group located in the GMA and interest group representatives.

The Proposed Export Amendments bill would amend current export permit provisions by al-



tering and clarifying the factors to be considered by a groundwater conservation district (GCD) when issuing an export permit or adding an export condition to an operation permit and providing for automatic extension of an expired export permit or condition to conform to the terms of the related operation permit.

Another area of concern deals with permit application administrative completeness. The proposed bill would limit the list of items a GCD can require for a permit application to what is already listed in statute as well as other information included in a district rule. The bill also states that a GCD may

not require additional information for a determination of a permit's administrative completeness.

Other issues still being discussed include bills which would provide for consideration of registered exempt wells in permitting decisions, the Desired Future Conditions (DFCs) adoption process, permits proposing the use of groundwater as an alternate source, and the addition of a definition of "modeled sustainable groundwater pumping" to Chapter 36 of the Texas Water Code.

The opening day of the 85th session of the Texas Legislature was January 10, 2017.

Winter 2017

Volume 3, Issue 1

### Inside this issue:

Master Composter Classes Set	2
Education Trailer & Home School	2
District Board Meeting	3
EPA Report on Fracking Issued	3
Groundwater Awareness Week	4

### Special points of interest:

- Legislative interim topics listed
- Computing courses set for February and March
- Education trailer available for home school students
- Next board meeting set for Jan 16
- Groundwater Awareness Week is March 5-11, 2017

# Prairielands eLine

Prairielands Groundwater Conservation District  
www.prairielandsgcd.org



William F. (Bill) Mullicon, III, PC, Mullicon & Associates, presented an overview of the extensive explanatory report that is to be sent to the Texas Water Development Board at the January 31, 2017 meeting of the GMA-8.

## Draft Desired Future Conditions Adopted

On January 31, groundwater district representatives in Groundwater Management Area 8 (GMA 8) met and adopted statements of desired future conditions (DFCs) for all relevant aquifers within the boundaries of the groundwater management area as required by the Texas Water Code. The adopted DFCs were developed as part of the joint planning process (which began in September 2013) among the 11 groundwater conservation districts (GCDs) and covers all or part of 45 counties.

Desired future conditions are defined as "the desired, quantified condition of groundwater resources

(such as water levels, spring flows, or volumes) within a management area at one or more specified future times as defined by participating GCDs within a groundwater management area as part of the joint planning process." The specified time mentioned above extends through at least the current planning period for the development of regional water plans (January 1, 2010 - December 31, 2020).

Desired future conditions have to be physically possible, individually and collectively, if different desired future conditions are stated for different geographic areas overlying an aquifer or subdivision of an aquifer.

In the case of GMA 8, there are two sets of statements, one set on an aquifer-wide scale for the Northern Trinity and Woodbine aquifers, and the other adopted for the Northern Trinity and Woodbine aquifers' outcrop and down-dip areas in the counties comprising the Upper Trinity GCD (Bosque, Parker, Montague, and Wise counties).

After adoption of the DFC statements, the GMA submitted them along with an extensive explanatory report to the Texas Water Development Board for consideration and review. This explanatory report can be found on the web at <http://www.gma8.org>.

Spring 2017

Volume 3, Issue 2

### Inside this issue:

Master Composter Classes Held	2
Legislative Update	2
Well Water Screening Held	3
Notice of Public Hearing	3
National Groundwater Week Activities	4

### Special points of interest:

- Groundwater Management Area 8 has adopted desired future conditions for repairs.
- Groundwater teams continue to be of major interest in the Texas Legislature.
- Prairielands sponsored groundwater-related seminars and presentations throughout the district.
- Date for public hearing on proposed minimum tract size set.

## Prairielands eLine, Winter 2017

## Prairielands eLine, Spring 2017

# Prairielands eLine

Prairielands Groundwater Conservation District  
www.prairielandsgcd.org

## Board Approves Minimum Tract Size Rule



Subdivision in Johnson County with multiple wells on smaller than two-acre lots.

On May 15, 2017, the Prairielands Board of Directors held a public hearing to receive comments from the public regarding the minimum size that a piece of property must be to obtain a well registration prior to drilling a new well.

Kicking off the hearing, Mr. James Beach, P.G., with the hydrogeologic firm of LBC-Guyton Associates, presented the results of their studies of the aquifers in our area and the long-term conditions that property owners can anticipate based on several well density and tract size scenarios.

Computer modeling predicts that declines in the water table with a continued minimum tract size of one acre

could result in a 65% failure rate of many existing wells in the area over the following five-year period.

However, if the tract sizes were increased to a minimum of two acres for a new well installation, that production loss could be reduced to a 20% rate.

A two-acre minimum tract size rule was adopted and became effective immediately, but a process was also put in place to consider various areas for tracts that were planned prior to May 15, or those that were substantially along in their planning process.

District rules and bylaws can be viewed online at [www.prairielandsgcd.org](http://www.prairielandsgcd.org) under "Rules and Bylaws" or

in the office at 205 S. Caddo St., Cleburne, TX, 76031. Online, the tract size rule can be found under "Temporary Rules As Amended May 15, 2017."

If you have questions or need additional information, call the district office at (817) 556-2299.



Johnson County subdivision with numerous new homes—all with a residential well screened at the same level in the same aquifer.

Summer 2017

Volume 3, Issue 3

### Inside this issue:

Water Day in Glen Rose	2
Board meeting change of date	2
Governor calls for Special Session	2
New Personnel	3
Young Professionals of Cleburne	3
Monitor Well Program	3
Wrap-Up of the 85th Legislature	4

### Special points of interest:

- Minimum tract size for new well registrations set at 2 acres.
- July board meeting moved to July 31.
- The water education trailer and district staff have been actively engaging community groups and schools.
- There are few changes to state law regarding groundwater after this past legislative session.

# Prairielands eLine

Prairielands Groundwater Conservation District  
www.prairielandsgcd.org

## Groundwater Conservation Districts Have a Long History of Collaboration

During the 85th Texas legislative session, a number of omnibus groundwater bills were introduced in both the House and Senate. Although none of these wide-ranging bills made it into law, their very existence resulted in much positive discussion between legislators, groundwater management professionals, and leaders in the groundwater arena.

One such bill, Senate Bill 1192, written and filed by Senator Charles Perry (R) - Lubbock, proposed what he felt were much needed changes to Chapter 36 of the Texas Water Code. Included in the bill was the requirement that the nearly 100 groundwater conservation districts across the state

have any rules or decisions governing groundwater production solely on "best available science" ignoring local water use considerations. The bill also required GCDs over a "common reservoir" to adopt "common rules" to lessen the impact on landowners whose properties straddle jurisdictional boundaries - something that groundwater management area groups have already been studying for some time.

### Early cooperative efforts

Groundwater districts have been in existence in Texas since the early 50s with the creation of the first district, the High Plains Underground Water Conservation District, in 1951. Others followed, and not only in this state; groundwater management districts appeared in Kansas, Oklahoma, and Nebraska. These groundwater management districts all had a common reservoir - the Ogallala or High Plains aquifer. In the early 1970s, districts across these states came together to form the Groundwater Management Districts Association (now known as the Texas Alliance of Groundwater Districts) to lessen the impact on landowners whose properties straddle jurisdictional boundaries - something that groundwater management area groups have already been studying for some time.



GMA-8 members work for consistency and compromise.

Some of the latest collaborations

General managers in GMA-9 which encompasses all or parts of nine Central Texas counties including Travis County west to Kerr County and oversees groundwater management for the Edwards (Balcones Fault Zone), Edwards-Trinity (Plains), Trinity, Ellenburger-San Saba, Hickory, and Marble Falls aquifers met this past summer specifically to discuss the differences and similarities in their various district rules. The goal of the managers was to identify areas where the development of common rules was feasible with the understanding that differences would have to be maintained when circumstances within districts

See COLLABORATION, p 4

Fall 2017

Volume 3, Issue 4

### Inside this issue:

Water Education Trailer Scheduling	2
Burleson Family Camp Out	2
Pioneer Days Event	2
Make it a Habit to Conserve Water	3
Cap Your Well to Protect Your Groundwater	3

### Special points of interest:

- Collaboration among groundwater districts continues into the future.
- The Water Education Trailer is available for school and community presentations.
- Properly capping unused water wells protects our groundwater now and for the future.

## Prairielands eLine, Summer 2017

## Prairielands eLine, Fall 2017

## **Outreach activities**

Public education and awareness about groundwater and water conservation is one of the main goals of the District.

### **Schools**

Over the course of 2017, Prairielands GCD staff presented 11 programs at schools in all four counties in the district: Ellis – 2, Hill – 5, Johnson – 2, and Somervell – 2.

Date	School	ISD	County	Grade Levels	Number of Participants
2/3/17	Marvin Elementary	Waxahachie	Ellis	2 <sup>nd</sup>	21
3/8/17	Kauffman Leadership Academy	Charter School	Johnson	6 <sup>th</sup> – 10 <sup>th</sup>	76
3/9/17	Covington High School	Covington	Hill	7 <sup>th</sup> – 12 <sup>th</sup>	80
4/4/17	Penelope Elementary	Penelope	Hill	5 <sup>th</sup>	65
4/5/17	Whitney Intermediate	Whitney	Hill	5 <sup>th</sup>	155
4/6/17	Hillsboro Intermediate	Hillsboro	Hill	4 <sup>th</sup>	165
4/12/17	Glen Rose Elementary	Glen Rose	Somervell	K	150
4/26/17	Glen Rose Elementary	Glen Rose	Somervell	2 <sup>nd</sup>	150
5/15/17	Whitney Intermediate	Whitney	Hill	4 <sup>th</sup>	150
5/16/17	Godley Intermediate	Godley	Johnson	4 <sup>th</sup> – 6 <sup>th</sup>	424
5/19/17	Schupmann Elementary	Red Oak	Ellis	K – 5 <sup>th</sup>	300
<b>Totals</b>	<b>11 School visits</b>	<b>9 Unique ISDs</b>	<b>4</b>	<b>All</b>	<b>1,736</b>

### **Community Groups**

In 2017, Prairielands staff made 16 presentations to community groups or appearances at public events. Programs were completed in all four district counties (Ellis – 3, Hill – 2, Johnson – 7, and Somervell – 2) and, by special request\*, at two events outside the district.

Date	Event	Location	County	Participants
1/23/17	Cub Scout Pack 232 Pack Meeting	Waxahachie	Ellis	33
1/23/17	Indian Trails Master Naturalists	Waxahachie	Ellis	50
2/23-25/17	Master Composter Class	Cleburne	Johnson	13
4/11/17	Hill County Water Supply Corporation Annual Meeting	Whitney	Hill	40
4/13/17	Blacklands Water Utilities Association Monthly Meeting	Waxahachie	Ellis	50
4/17/17	Texas Well Owners Network	Glen Rose	Somervell	30
4/22/17	Burleson Family Camp Out	Burleson	Johnson	12
4/29/17	Texas SmartScape Plant Fair & Sale	Cleburne	Johnson	12
5/8/17	Somervell County Master Gardeners Meeting	Glen Rose	Somervell	40
6/17/17	Rio Brazos Master Naturalists*	Acton	Hood	25
6/20/17	Johnson County Elected Officials Dinner	Cleburne	Johnson	50
6/21/17	Young Professionals of Cleburne	Cleburne	Johnson	30
7/20/17	Hillsboro Summer Reading Club	Hillsboro	Hill	35
9/21/17	Cleburne Rotary Club	Cleburne	Johnson	50
9/23/17	Burleson Family Camp Out	Burleson	Johnson	25
11/9/17	White Rock Water Utilities Association Monthly Meeting*	Irving	Dallas	77
<b>Totals</b>	<b>16 Events</b>	<b>8 Cities</b>	<b>6</b>	<b>572</b>

*F.3. - Management Objective: The District will investigate the feasibility of recharge enhancement and aquifer storage recovery projects in the district.*

*F.3. - Performance Standard: By 2022, the District will complete studies and an initial assessment regarding the feasibility of recharge enhancement and aquifer storage and recovery projects in the district.*



During the 85<sup>th</sup> session of the Texas Legislature, the district was active in working on proposed legislation related to recharge enhancement and aquifer storage and recovery projects in addition to legislation addressing the development of brackish groundwater.

*F.4. - Management Objective: The District will periodically support or sponsor an education seminar addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control.*

*F.4. - Performance Standard: The District shall support or sponsor such a seminar at least once every other year. A summary of such educational activities will be included in the District's Annual Report.*

2/23-25/17 – Master Composter Classes, MacGregor Park, 1628 W. Henderson, Cleburne, TX (Johnson County) – The district took an active role in planning and hosting this event which was open to the public. Course repeated March 16-18, 2017.



**February 23<sup>rd</sup>-25<sup>th</sup>**

**Thursday & Friday evenings 6-9pm**

**and Saturday from 8am-5pm**

**1628 W. Henderson Street**

**Call to Register - 817 733-5066**



This service was funded by the  
Texas Commission on Environmental Quality  
through a grant from the  
North Central Texas  
Council of Governments.



## Composting Classes at MacGregor Park

Four million tons of yard trimmings like leaves, grass, tree limbs, weeds and other organic debris are thrown away each year in Texas. We spend more than \$300 million every year disposing of yard trimmings, and billions in total yard care costs, including water, fertilizer, and chemicals to combat pests. Composting is a simple biological process that breaks down leaves, grass clippings, wood chips, brush, and food scraps into a dark, crumbly, nutrient-rich, organic product. It's nature's way of recycling organic matter back to the soil as natural fertilizer. Compost also increases the soil's organic content, which holds water, and grows healthier plants. Join our composting class to learn how to capture this wealth.

The 14-hour Master Composter course hosted by Bluebonnet RC&D gives students an in-depth look at the benefits and challenges of composting. The three day class hours are Thursday and Friday from 6 to 9 p.m. and Saturday from 8:30 a.m. to 5 p.m. Students will get an understanding of the biology of composting, the importance of solid waste reduction, and be introduced to vermi-composting (composting with worms), and hands-on bin building. The \$20 course fee includes all books and materials, and a light lunch on Saturday. State of Texas Alliance for Recycling course certification is obtained after completing volunteer service hours teaching others about composting. A free C.E. Sheppard compost bin goes to students volunteering in Cleburne.

**To register call:  
817-733-5066**



**COMPOST**  
*Can you dig it?*



*F.5. - Management Objective: Each year, the District will seek to provide an educational outreach regarding water conservation to at least one elementary school in each county of the district.*

*F.5. - Performance Standard: Each year, a list of schools that participate in the educational outreach will be included in the District's Annual Report to be given to the District's Board of Directors.*

Over the course of 2017, Prairielands GCD staff presented 11 programs at schools in all four counties in the district: Ellis – 2, Hill – 5, Johnson – 2, and Somervell – 2.

Date	School	ISD	County	Grade Levels	Number of Participants
2/3/17	Marvin Elementary	Waxahachie	Ellis	2 <sup>nd</sup>	21
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*Talking to students at Kauffman Leadership Academy in Cleburne*

## Addressing desired future conditions

### **Groundwater Monitoring Program and Desired Future Conditions**

*G.1. - Management Objective: The District will develop a Groundwater Monitoring Program within the District to monitor water well levels (and baseline water quality) in wells in each aquifer and subdivision thereof in the District. The District will review the geographic and vertical distribution of existing monitoring wells in the District with historical data from the TWDB, USGS, TCEQ, and other agencies and develop a plan to partner with those agencies as appropriate to ensure continued availability of the monitoring wells and data from them to the District. The District will also develop a plan to acquire or install new monitoring wells to fill in gaps in geographic or vertical distribution. The District will then develop an annual goal of how many monitoring wells it will add each year and a priority system for their installation based upon data deficiencies and needs for the geo-database. The District will take periodic readings from the monitoring wells and input the data into the District's geo-database. The District will utilize the information to help implement its regulatory and permitting program and monitor water level trends and actual achievements of DFCs.*

*G.1. - Performance Standard: Upon development, a summary of the District Groundwater Monitoring Program will be included in the District's Annual Report to be given to the District's Board of Directors.*

The main goal of the monitor program in 2017 was to increase the number of aquifers represented in each county. To accomplish this, the field technician

- Talked to individual well owners in all counties regarding the monitor program and underlying geological layers of their area.
- Added two Sardis-Lone Elm wells in Ellis County to the monitor program – one in the Trinity Group and one in the Woodbine aquifer.
- Added 17 Johnson County Special Utility District wells in northern and southern Johnson County to the TWDB observation well program – nine in the Paluxy formation, one in the Glen Rose, and seven additional Trinity Group installations (mostly Hosston and one multi-screened.)
- Completed the annual measurement of all (64) current TWDB observation wells in the four-county area during the month of December.
- Moved the well information database hosting site to a new provider – ArcGIS.
- Continued to work with the district's consulting hydrologist, LBG Guyton & Associates, to identify the most needed areas in the district for monitoring.

*G.2. - Management Objective: Upon approval of the District Monitoring Program, conduct water level measurements as specified in the Monitoring Program within the District.*

*G.2. - Performance Standard: Annual evaluation of the water-level trends and the adequacy of the monitoring network to monitor aquifer conditions within the district and to monitor achievement of applicable desired future conditions. The evaluation will be included in the District's Annual Report to be given to the District's Board of Directors.*

As previously discussed, the District continues to develop its monitoring program. On full implementation, District staff will take water level measurements to determine trends and will evaluate these trends in relation to the achievement of desired future conditions. The following information depicts water availability data reviewed by the District in 2017, and the type of daily information that might be expected from the monitor wells for review and analysis in the future.

## Available Data

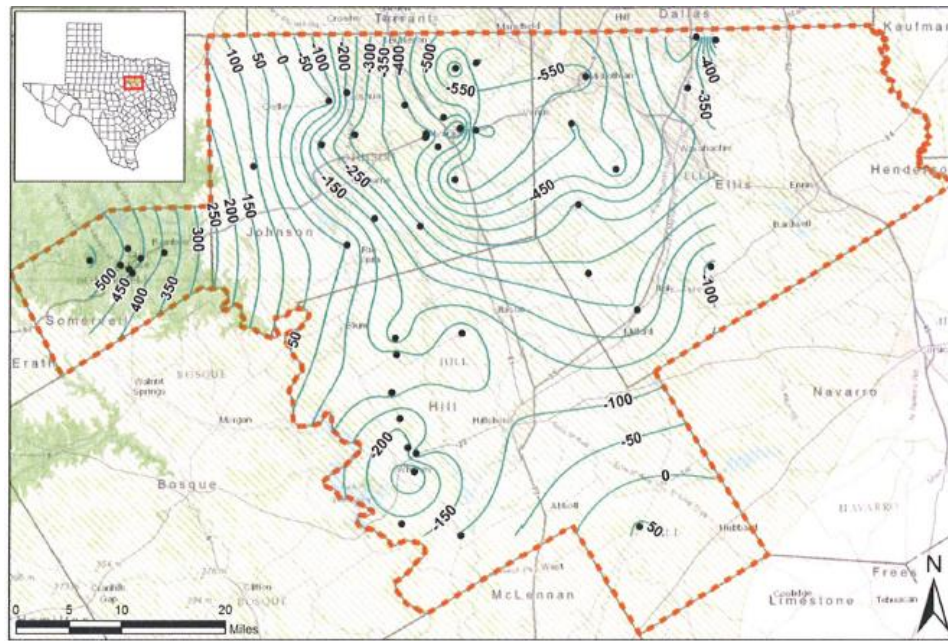
**Water Level Data Availability**

County/Aquifer	Woodbine	Paluxy	Glen Rose	Hensell	Hosston
Ellis	13 1957-2012	No Data	No Data	No Data	7 1948-2012
Hill	8 1930-1997	2 1941-1991	No Data	6 1958-2012	18 1939-2012
Johnson	11 1960-2012	11 1966-2012	2 1966-1995	No Data	6 1964-2010
Somervell	No DFC	4 1950-2012	2 1950-1986	8 1950-2012	4 1929-2012

**Notes:**

- 1) Table lists number of wells with water level data and the date range of available data.
- 2) The date range shown is not a common period of record for all wells (not all wells have data that extends across the entire date range).
- 3) These data are based upon NTGAM reassigned aquifer designations.
- 4) This table excludes dual completion wells.

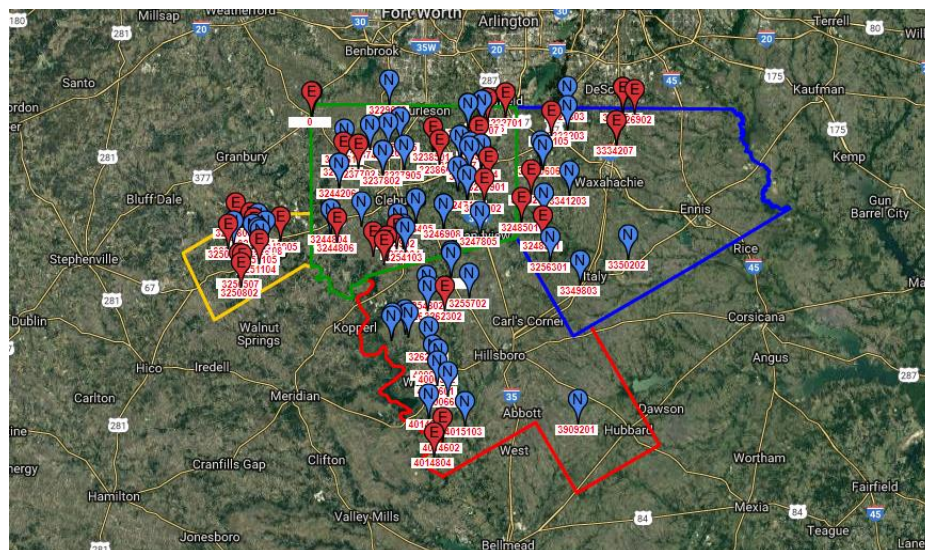




### Observation Wells

Starting in December 2015, the PGCD assumed water level measurement of 52 observation wells previously established and maintained by the Texas Water Development Board. Staff continued this program in 2017 with the wells now totaling 64. These wells are located in all four District counties.

## Observation Well Map - 2017



## **Desired Future Conditions and Groundwater Use by Non-Exempt Wells**

*G.3. - Management Objective: Monitor non-exempt pumping within the District for use in evaluating District compliance with aquifer desired future conditions.*

*G.3. - Performance Standard: Annual Reporting of the groundwater used by non-exempt wells will be included in the Annual Report provided to the District's Board of Directors.*

As discussed previously, water usage by non-exempt wells during 2017 was 5,928,172,705 gallons.

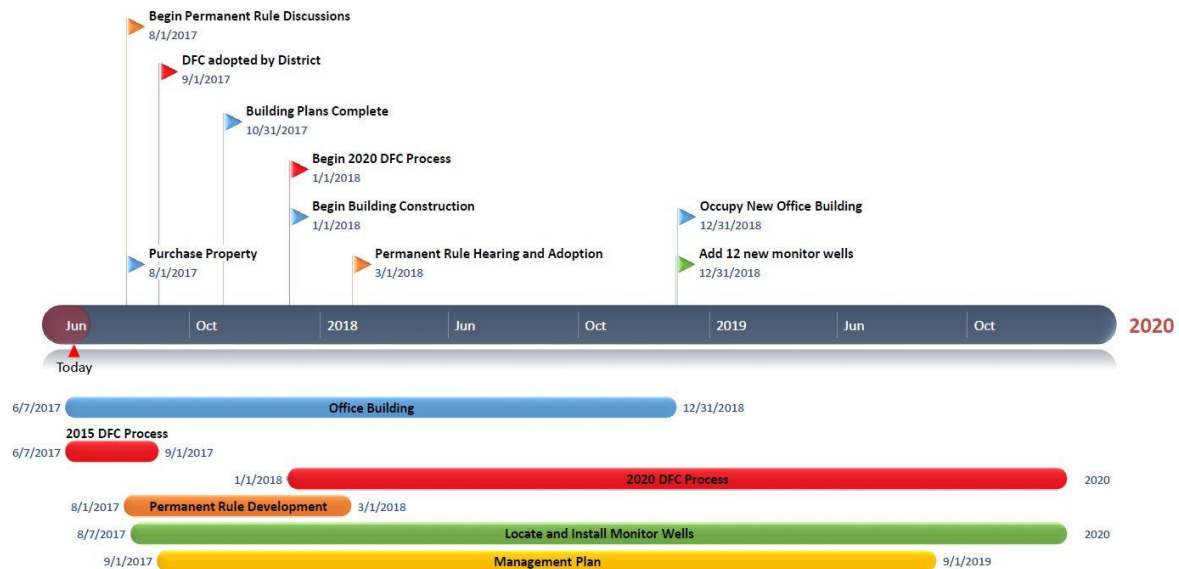


*Pulling a pump to install monitor equipment*

## Status of Permanent Rules Development

*G.4. - Management Objective: Develop permanent rules including a water well permitting and groundwater allocation system that will achieve the desired future conditions of the aquifers in the District. In doing so, the District will strive to protect private property rights, including investments by existing well owners.*

*G.4. - Performance Standard: By 2022, the District will develop and adopt permanent rules that will achieve the desired future conditions of the aquifers in the District.*



The *Rules and Bylaws Committee* met several times during 2017 to discuss the path forward to adopt permanent rules for the district. Intentionally waiting until DFCs had been set, to take advantage of the best science available, the committee began to discuss minimum tract size, spacing between wells, permitting and other aspects of permanent rules. On May 15, 2017, the PGCD Board of Directors adopted a two-acre minimum tract size requirement to drill a well. This action should ensure a longer, more trouble free, productive life for the well and should also prevent heavy aquifer decline in a localized area. It is anticipated that the additional portions of the final rules will be in place with final adoption following near the end of 2018, four years ahead of the initial schedule.