



PANOLA COUNTY

groundwater conservation district

# **2016 ANNUAL REPORT**

## **Understanding Our Resource**



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# District Information

## Creation

In 2007, the 80th Legislature, through the approval of House Bill 1498, authorized the creation of the Panola County Groundwater Conservation District, or the District. The voters of Panola County then confirmed the creation of the District on November 6, 2007 by 87%, along with a tax to fund the District with an 83% approval rate.



The purpose of the District is to provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater, and the groundwater reservoirs or their subdivisions, consistent with the objectives of Section 59, Article XVI, Texas Constitution, Chapter 36 of the Texas Water Code, and the District's enabling act. The District was created to serve a public use and benefit in preserving the groundwater resources of the area.

## Mission

Since its creation, the Panola County Groundwater Conservation District has worked hard to develop rules to provide protection to existing water wells, prevent waste, promote conservation, and to preserve and protect the groundwater resources of Panola County.

The District is committed to managing and protecting the groundwater resources within its jurisdiction, and to work with other stakeholders to ensure a sustainable, high-quality, and cost-effective supply of water for future generations.

The District will strive to develop, promote, and implement water conservation and management strategies to protect the water resources for the benefit of the citizens, the economy, and the environment within the District.

## Authority

The District is a political subdivision of the State of Texas organized and existing under Section 59, Article XVI, Texas Constitution, the Texas Water Code Chapter 36, Title 31 of the Texas Administrative Code (TAC) Chapter 256, and the District's enabling act. The District is a governmental agency and a body politic and corporate of the State of Texas. The District exercises the authority it has been granted to preserve and protect the groundwater resources of Panola County through the adoption and implementation of rules for the District.

# District Information Continued

## Location and Extent

The boundaries of the District are the same as Panola County. The area encompasses 821 square miles (approximately 525,438 acres). The District is bounded by Harrison County to the north, Rusk County to the west, Shelby County to the south, and the State of Louisiana to the east.



## District Office

Physical/Mailing Address:

419 West Sabine Street  
Carthage, TX 75633

Phone: 903-690-0143

Fax: 903-690-0135

Email: [district@pcgcd.org](mailto:district@pcgcd.org)

# Staff and Directors

## Directors

The Board of Directors consists of nine (9) members who are elected by the voters of Panola County. The District utilizes the same four (4) precinct boundaries which are used for the Panola County Commissioners when filling eight (8) of the District's director positions. One director position for the District is elected at-large from Panola County. Elections are held in November of each even-numbered year. The directors of the District are each elected to a four-year term, and a director may serve consecutive terms.

James Browning, President .....	Precinct Two
Mike Pennington, Vice-President .....	Precinct One
Danny Reed, Secretary .....	Precinct One
Jim Payne, Treasurer .....	Precinct Three
Larry Dorman, Director ... ..	Precinct Two
Al Clay, Director .....	Precinct Three
Ronny McMillan, Director .....	Precinct Four
Ray Davis, Director .....	Precinct Four
Bobby Langford, Director .....	At-Large

## Staff

Leah Adams .....	General Manager
Teresa Griffin.....	Office Manager
Jess Landreneau .....	Field Technician I
David Waldrop.....	Field Technician II

# Letter from the General Manager

Accurate information is necessary for making sound policy decisions when it comes to groundwater. Whether the information is scientific or socio-economic, making decisions without accurate information can have adverse effects on the people of Panola County. For the last 5 years, the District has been working tirelessly to gather accurate information about the aquifer and the types of groundwater usage, the amount of groundwater used, and how modeling groundwater is used in making decisions. The accumulation of this information puts together a puzzle that, as a whole, can be used to make effective decisions regarding the aquifer.

Through aquifer studies provided by a consultant for the District, we know that the aquifer, which is classified as unconfined, actually responds like a confined aquifer when pumped at deeper depths. In an unconfined aquifer, the water table is equivalent to the water level in a well, whereas in a confined aquifer, the water level in a well is influenced by pressure. Knowing how an aquifer reacts to pumping can influence rules for spacing and volumes permitted. We have also learned there are shallow alluvial sands which feed nearby streams that can provide water even in times of drought in some areas of the county, but in order to provide sustainability and prevent surface contamination of a water well, it is more beneficial to drill deeper in the aquifer, such as 250-400 feet. In 2017, we are studying the influence of pumping on a water well to determine how pumping can affect others and evaluating policies based on aquifer science to better protect private property rights.

The main issue with knowing the amount of groundwater used in the county is having all of the water wells in the county registered. Without a registration, the District can neither collect production data from permitted wells nor estimate domestic use. The better the data is for water usage, the better the District can manage the aquifer. In one year, the District went from over 500 known unregistered wells to just over 50 unregistered wells.

Having information about the aquifer and how it works, and compiling accurate water usage data leads to better modeling results. To predict aquifer outcomes, hydrologists use water modeling software. Without good information, decisions and policies pertaining to the aquifer can be made incorrectly. The adage of “garbage in, garbage out” is true in this case. Throughout 2016 and into 2017, the District will work hard to ensure the information used going forward is accurate and useful in policy-making. A better understanding of the resource we manage makes for better decisions that affect the future of Panola County.

# Management Plan Goals

The District Management Plan identifies the goals and objectives of the District and provides performance standards and tracking methods to measure the District's effectiveness in meeting these goals. The District goals are mandated by the Texas Water Code Chapter 36 in Section 36.1071. Although all groundwater conservation districts are subject to these goals, each district chooses how to best implement the goals within their district by establishing their own objectives and performance standards. The District goals are as follows:

- A. Providing the most efficient use of groundwater
- B. Controlling and preventing waste of groundwater
- C. Addressing conjunctive surface water management issues
- D. Addressing natural resource issues which impact the use and availability of groundwater, and which are impacted by the use of groundwater
- E. Addressing drought conditions
- F. Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective

**The following is a summary of the District's activities related to these goals.**

## Goal A.1.

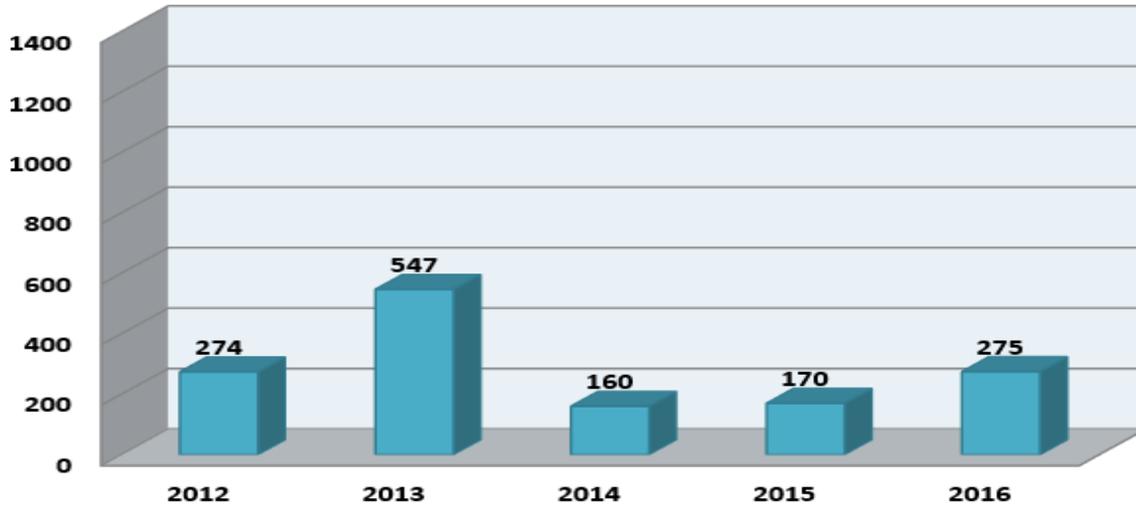
**A.1. Objective:** The District will require the registration of all wells, exempt and non-exempt, within the District's boundaries each year in accordance with the District Rules.

**A.1. Standard:** The number of new and existing water wells registered with the District will be provided in the Annual Report for each fiscal year.

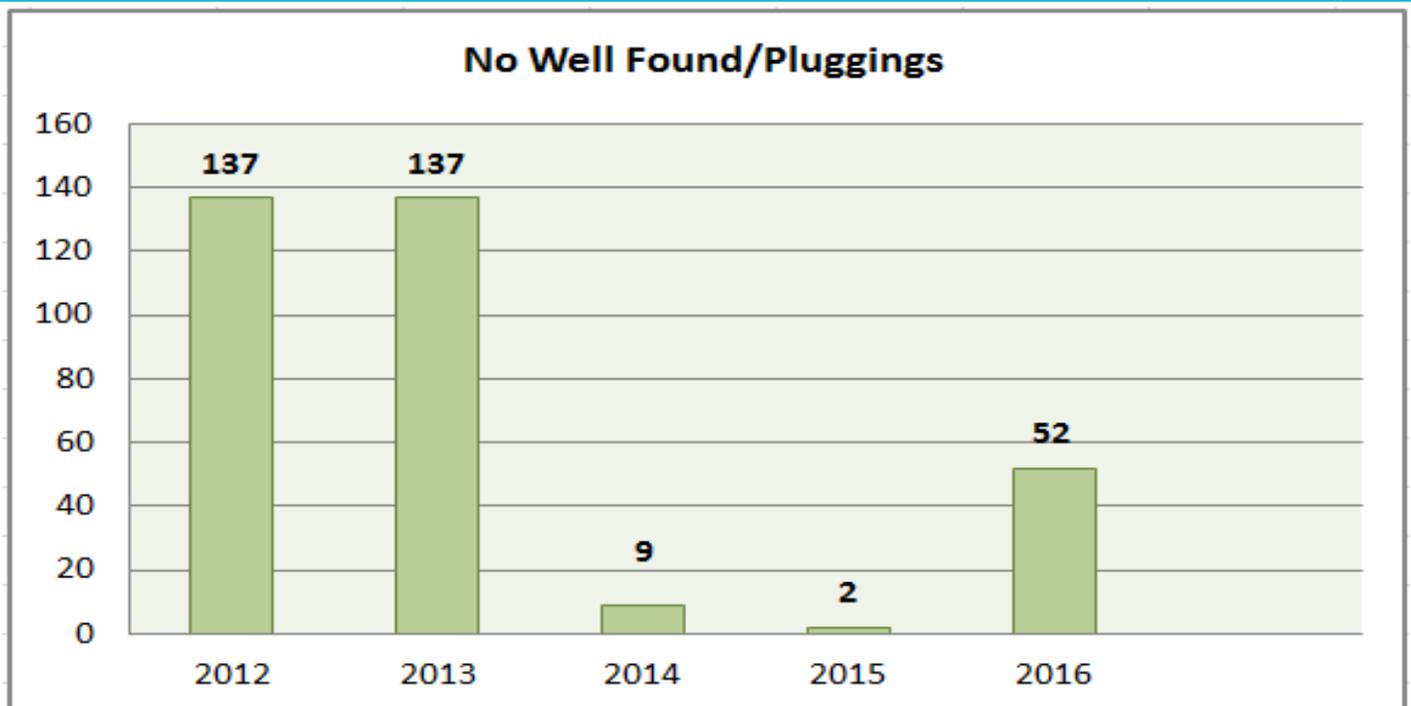
## Summary of Actions

In 2016 the District reviewed and accepted 275 applications for water wells. The total is 105 more than in 2015 and 115 more than in 2014. **Table 1** shows a graph that compares the total number of applications for each year. Currently, we have an accumulative total of 3,719 water wells plotted in our ARC GIS mapping system. Because the District has a number of water wells drilled and left by oil and gas companies, we require them to be either plugged or turned over to the landowner. **Table 2** shows the number of wells we could not confirm as existing or plugged in 2016. The District continues the water well registration initiative by attempting to register undocumented water wells that field technicians have found in the field. Additional unregistered wells are discovered by searching through the state's submitted driller's reports. Outreach efforts explaining the requirement to register wells, along with explaining the benefits of a well being registered, have helped spur the movement to register wells.

## Table 1 - Total Number of Water Well Registrations



## Table 2 - Total Number of No Water Wells Found or Plugged Wells



## Goal A.2.

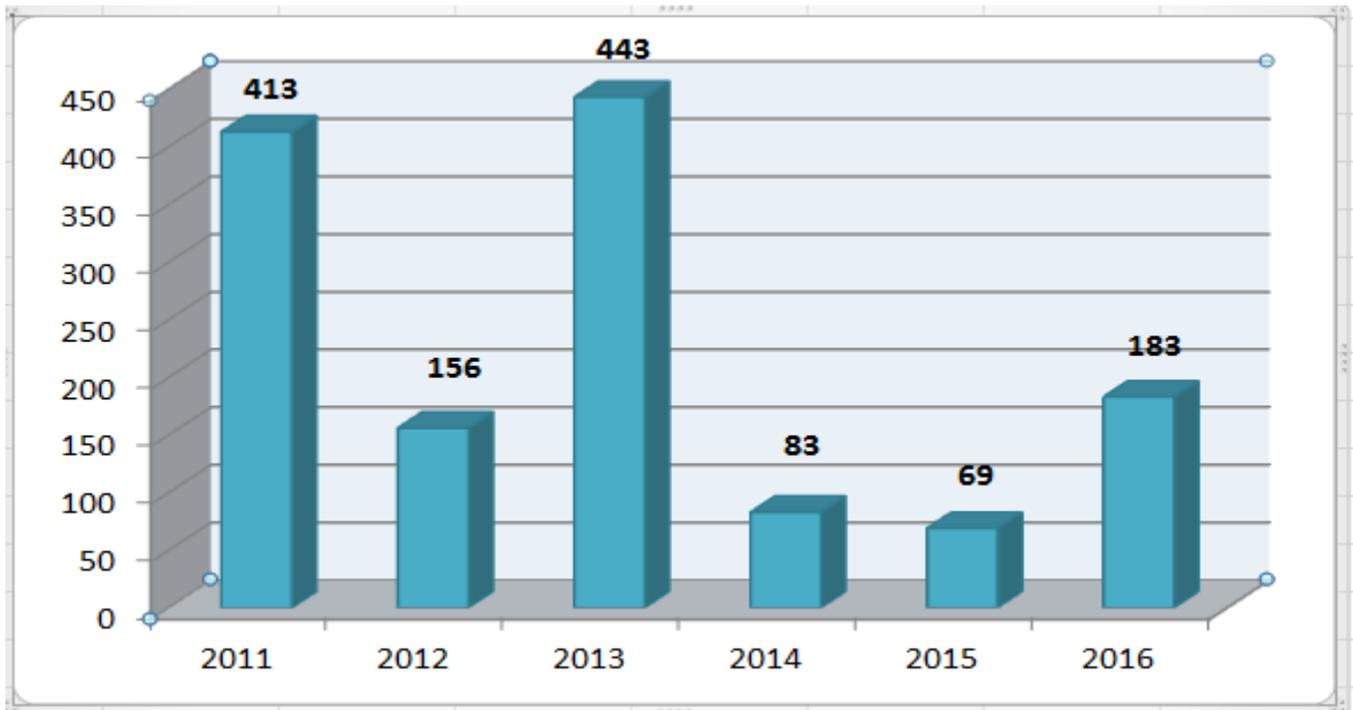
**A.2. Objective:** The District will require permits for all non-exempt groundwater use water wells within the District's boundaries pursuant to the District Rules each year.

**A.2. Standard:** The District will accept and process applications for permits for all non-exempt groundwater use pursuant to the permitting process described in the District Rules each year. The Annual Report for each fiscal year will contain a summary of the number of applications for the permitted use of groundwater and the number and type of permits issued.

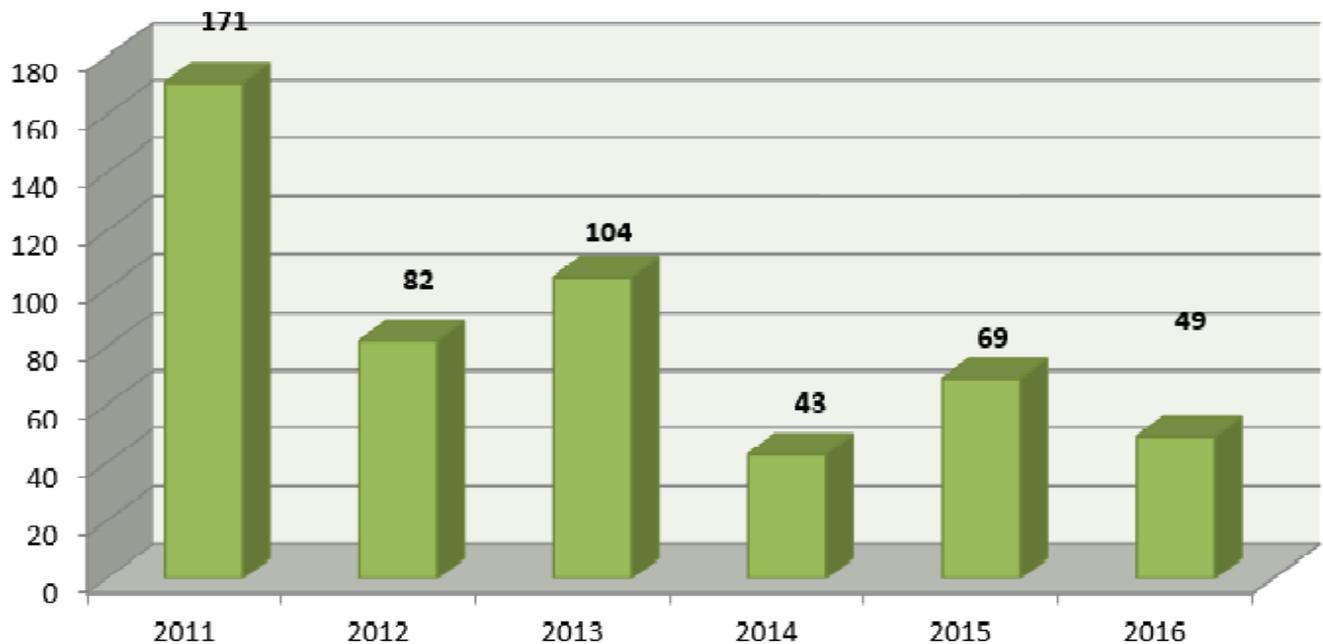
## Summary of Actions

Of the 275 applications received in 2016, a total of 183 were exempt oil and gas applications, 49 were domestic use applications, 23 were exempt monitor wells, and 4 were exempt livestock and irrigation wells. There were 16 Non-Exempt applications: 1 public water supply, 0 water sales, 8 poultry, 2 livestock and irrigation, and 5 commercial. The two following pages provide **Tables 3—6** respectively, which show the number of and types of water wells. In 2016, we saw the first round of Grandfathered Use Permit renewals. Of the 87 Grandfathered Use Permits, 11 were renewed. The District has a total of 2,486,602,590 gallons or 7,631 acre-feet of groundwater permitted for use each year.

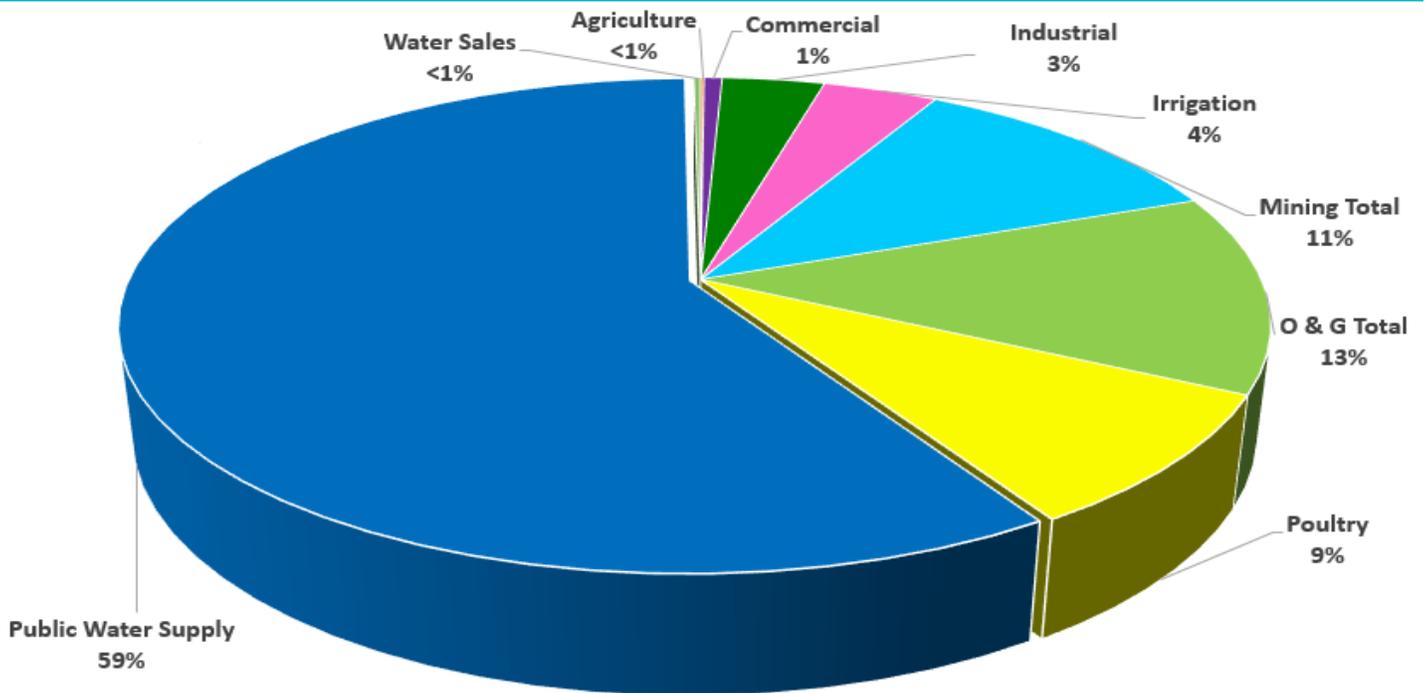
## Table 3 - Exempt: Oil and Gas Water Wells



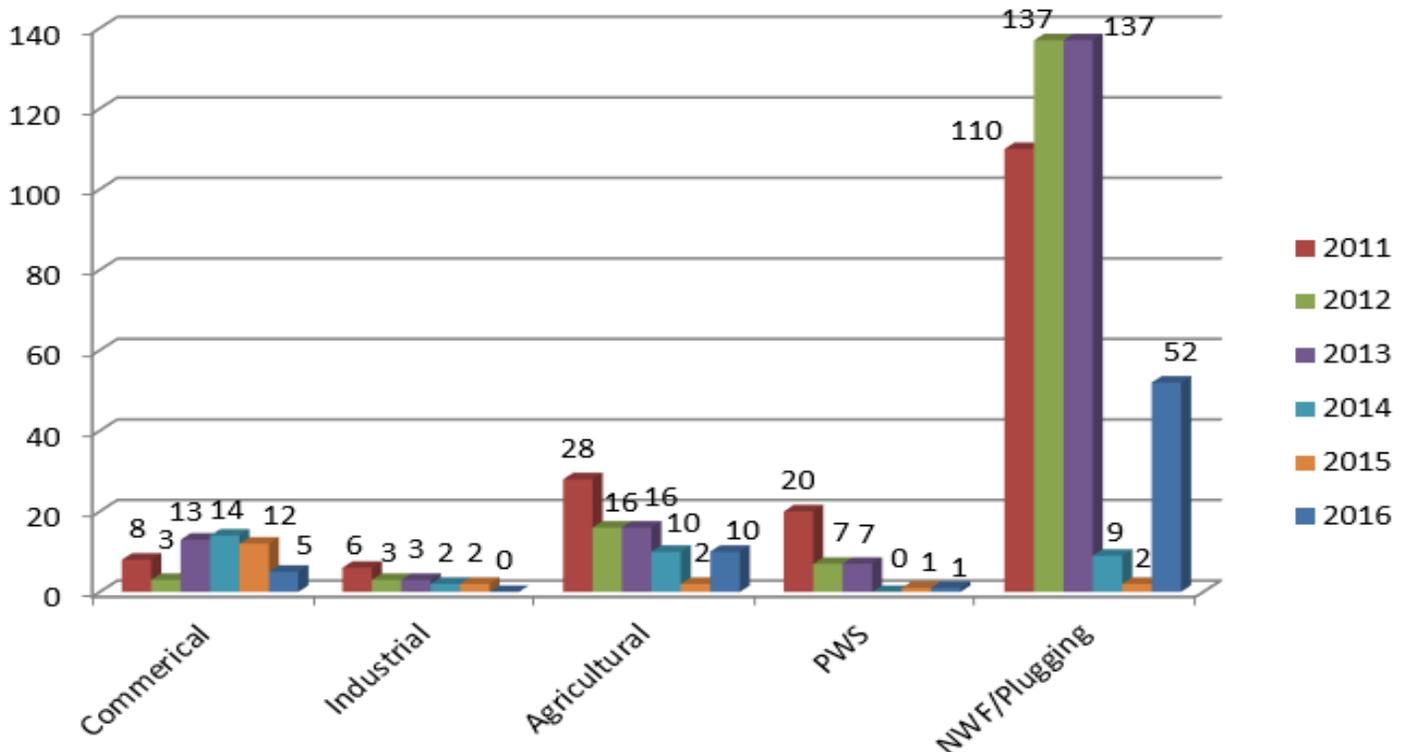
## Table 4 - Exempt: Domestic



## Table 5 - 2016 Permitted Wells By Type



## Table 6 - Number of Non - Exempt Water Wells by Type



## Goal A.3.

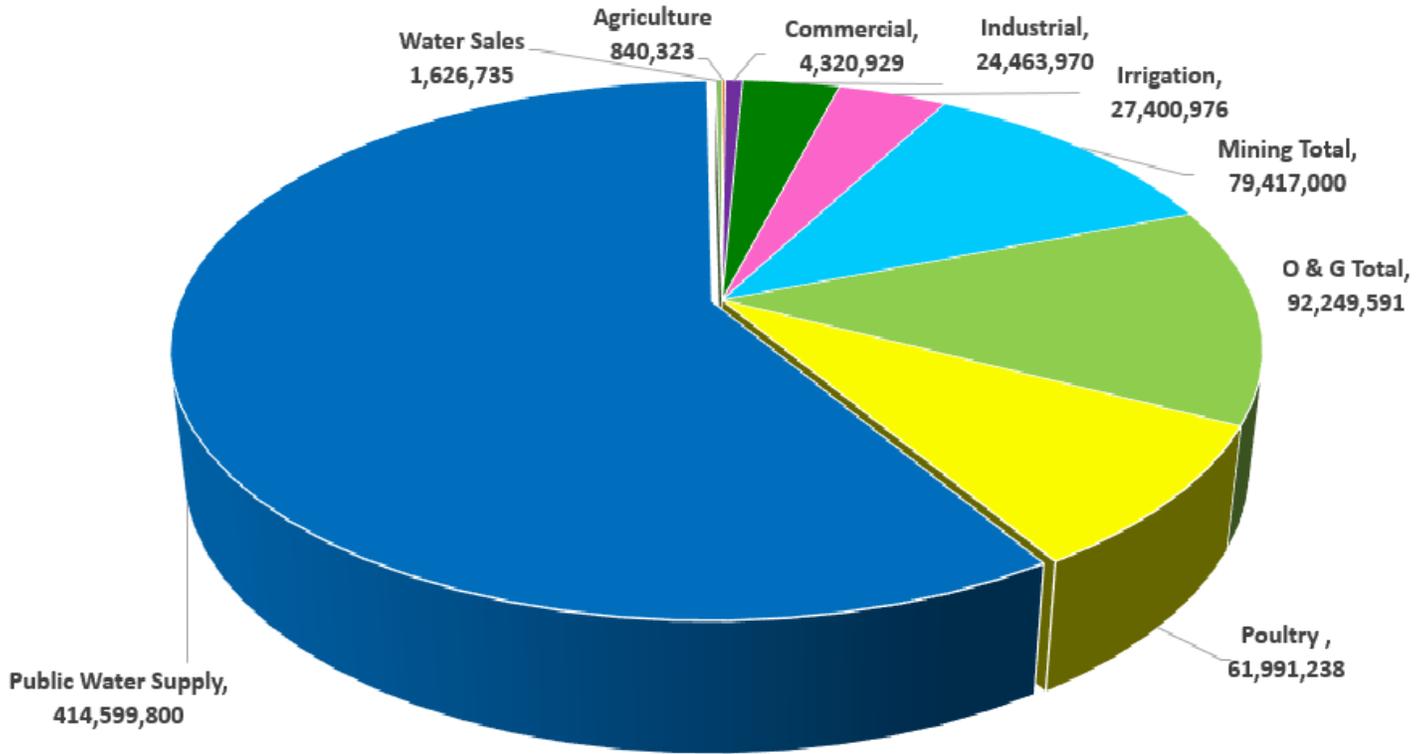
**A.3. Objective:** The District will regulate the production of groundwater by maintaining a database of groundwater usage through production volume reports each year according to the District rules.

**A.3. Standard:** The District will include a summary of the reported volume of groundwater produced in the county each year in the annual report.

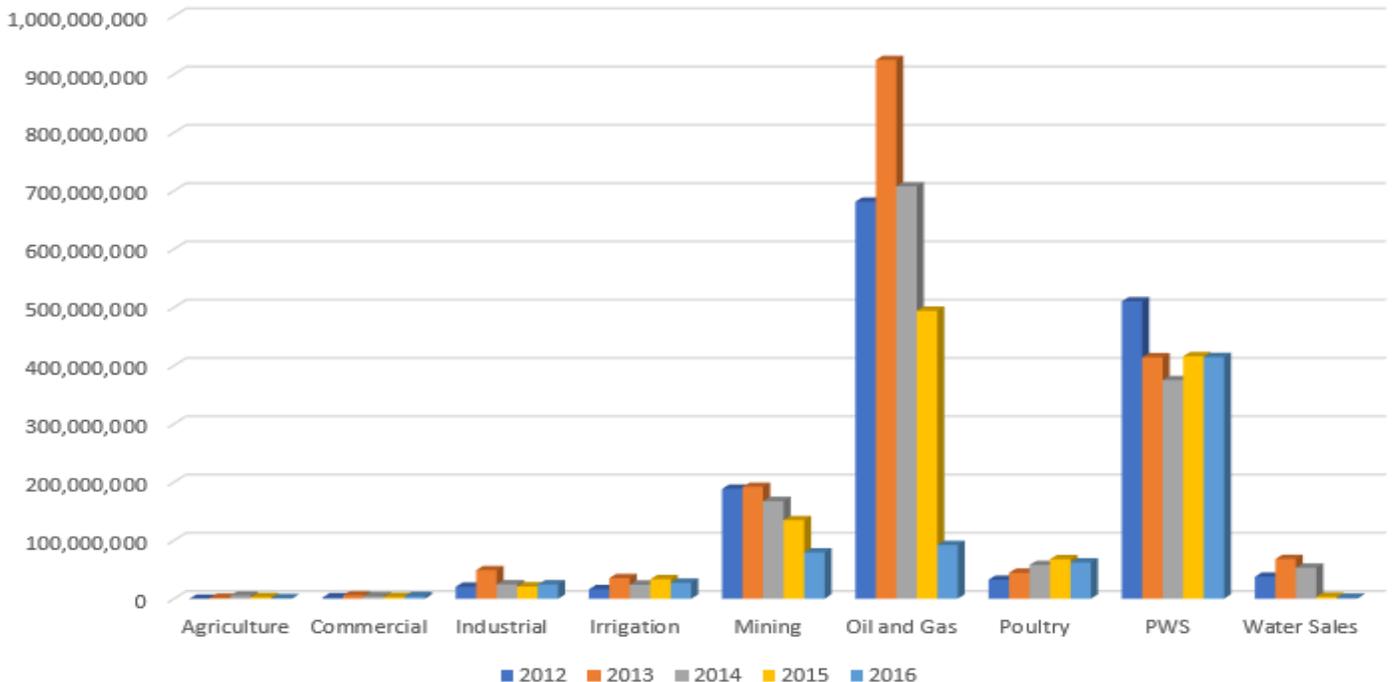
## Summary of Actions

The total production for 2016 was 706,910,562 gallons (2,169 acre-feet) of groundwater annually by the people and businesses in Panola County. The total actual permitted use was 2,486,602,590 gallons (7,631 acre-feet) for 2016, a difference of 5,462 acre-feet. **Tables 7 and 8** show the breakdown of permitted groundwater use by user group, along with the totals of production since 2012 by category. Even though oil and gas production and mining are considered exempt, production is still required to be reported to the District. Mining reported the use of 79,417,000 gallons (244 acre-feet) annually (down 55,395,200 gallons or 170 acre-feet from last year) and oil and gas reported 92,249,591 gallons (283 acre-feet) annually (down 401,755,792 gallons or 1,233 acre-feet from last year). At the time this report was published, the District was still waiting on production from a few users that had not reported all of their usage for 2016.

# Table 7 - 2016 Reported Production by Well Type



# Table 8 - 2012-2016 Reported Production by Well Type



## Goal B.1.

**B.1. Objective:** The District will provide information on an annual basis to the public on the elimination, reduction, and prevention of waste of groundwater, and information focused on water quality protection each year.

**B.1. Standard:** The District's Annual Report will include a summary of the District's efforts during the fiscal year to provide educational information to the public on the elimination, reduction, and prevention of waste of groundwater.

## Summary of Actions

The District's web site, [www.pcgcd.org](http://www.pcgcd.org), contains links to a number of useful web sites pertaining to the elimination, reduction, and prevention of waste of groundwater. **Exhibit 1** on the following page shows a snapshot of the links on our website. In 2016, the District sponsored a Water Testing Program, which consisted of the District offering the first 20 participants a free water quality test for their well water. The program was a success on many fronts; the District gained water quality information countywide, received 12 new well registrations, and spread the message that the PCGCD is here to help the people. (**Exhibit 2**). In conjunction with the Water Testing Program, the District also hosted a Landowner Conference, co-sponsored with the Texas AgriLife Extension. The topics discussed during the conference included "Water Well Management and Protection" and "Safe Handling of Chemical Pesticides." The evening concluded with a question and answer session with participants. A water wise conservation education kit was given as a door prize. The kit contains tools to measure how much water is being used, kitchen and bathroom faucet aerators, and a high-efficiency shower head to encourage conservation. (**Exhibit 3**).

# Exhibit 1 - Links to Educational Material



PANOLA COUNTY  
groundwater conservation district

HOME

ABOUT US

OUR WATER

FAQ'S

LINKS

CONTACT

## Links

Texas Groundwater Protection Committee <http://www.tgpc.state.tx.us/index.php>

Fun For Kids [www.twdb.texas.gov/kids](http://www.twdb.texas.gov/kids)

Texas Water Development Board [www.twdb.state.tx.us](http://www.twdb.state.tx.us)

Know Your Water, Water IQ [www.wateriq.org](http://www.wateriq.org)

Environment and Natural Resources portal [www.texasonline.com/portal/tol/en/nat/home](http://www.texasonline.com/portal/tol/en/nat/home)

Railroad Commission of Texas [www.rrc.state.tx.us/pressreleases/index.php](http://www.rrc.state.tx.us/pressreleases/index.php)

Palmer Drought Indices [www.ncdc.noaa.gov/oa/climate/research/prelim/drought/palmer.html](http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/palmer.html)

Homeland Security [www.dhs.gov](http://www.dhs.gov)

Texas OneCall [www.call811.com](http://www.call811.com)

Texas Department of Licensing and Regulation for Water Well and Pump Installers [www.license.state.tx.us/wwwd/wwwd.htm](http://www.license.state.tx.us/wwwd/wwwd.htm)

Licensed Water Well and Pump Installer Search [www.license.state.tx.us/LicenseSearch/](http://www.license.state.tx.us/LicenseSearch/)

TWDB Submitted Drillers Reports [www.wiid.twdb.texas.gov](http://www.wiid.twdb.texas.gov)

USGS Groundwater and Drought <http://water.usgs.gov/ogw/drought/>

El Nino Weather Effects <http://www.elnino.noaa.gov/>

### Panola County Groundwater Conservation District hosts Water Testing Program

The Panola County Groundwater Conservation District (PCGCD) will be sponsoring a well water testing program March 14-18, 2016. The program is free to the first 20 participants to call and schedule a sample testing and half price to the next 10 participants. The well water testing program is open to Panola County residents with water wells registered with the District. If your well is not registered with the district this will be the perfect time to register your well. Sample testing will include; total dissolved solids, Iron, Chloride and Sulfate and is valued at \$93. There is a limit of one test sample per participant and anyone wanting additional testing may do so at their own expense. The District will also be hosting a Landowner's Conference in conjunction with Texas Agrilife Extension Service on March 24, 2016 at the Annex Building (Old Sammy Brown Library). Registration will begin at 5 p.m. with a meal being served at 5:15, sponsored by PCGCD. County Extension Agent, Lee Dudley will lead the program discussion with "Safe Handling of Chemical Pesticides," followed by PCGCD General Manager, Leah Adams, discussing "Water Well Management and Protection". Private Applicator License holders will earn one CEU in the elements in our local groundwater supply throughout the county and also educate the public on the importance of conservation and protection of our groundwater. For more information or to reserve your spot on the well water testing drive please contact PCGCD at (903) 690-0143. You may also visit our website at [www.pcgcd.org](http://www.pcgcd.org) for information on the District, forms to register your well, conservation tips and much more information.

### Baskets of Hope to be held

The seventh annual Baskets of Hope Dinner and Silent Auction to benefit Mission Carthage will be held in the Central Baptist Church Activities Center on Saturday, April 2 at 6 p.m. The evening will feature a meal with homemade desserts, a live auction, musical entertainment, door prizes to be given away, Grateful Life and baskets of any theme donated for the silent auction. Churches, businesses, social and service clubs or individuals are needed to donate completed baskets, gift certificates, cash or other items to be included in the auctions. Basket ideas in the past have been varied and included themes of "A Great Date," "Movie Night," "Baby Basket," "Pamper Me," "In the Garden," "Man Bucket of Tools," "Hunting/Fishing," "Mani/Pedicure," "Gig em Aggies" plus many more; large and small. Donations will be accepted beginning Monday, March 14 in the main office at Central Baptist Church, located at 220 W. Sabine St. Donation forms will be available there as well. Tickets for the event are available at Central Baptist Church, Mission Carthage, First United Methodist Church and First Baptist Church. Tickets are \$25 each and seating is limited. Mission Carthage is a 501(C)3 organization and donations are tax deductible. For more information contact Brooke Lipsey (903-692-1963) or Janet Shrewsbury (903-693-

### Weather Whys: Spring Allergies

Q: So far this spring, it seems like everyone's allergies are a big problem. Is the weather contributing to this?  
A: Very much so, says plants blooming this time of year. As a result, many people - even pets - are suffering right now. Texas is one state that is known for its spring allergies." include ash, elm, pine, pecan, hickory, poplar and walnut trees. Perhaps the most common allergen in this part of the country is mold, which

### Daylight Saving Time

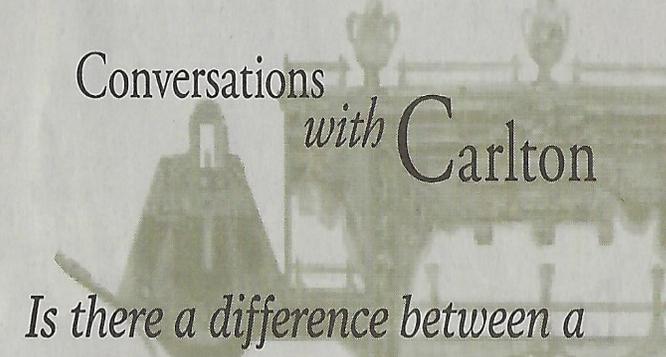
Spring Forward on Sunday, March 13  
**2 a.m.**

*The time switch is a great time to change the batteries in smoke detectors, too!*



### Conversations with Carlton

*Is there a difference between a*



# Exhibit 3 - Preventing Waste and Studying Water

## Quality Continued

TEXAS A&M  
**AGRI LIFE**  
EXTENSION

**Panola Landowners  
Conference**  
Thursday  
March 24, 2016  
1 L&R (CEU)



**Panola AgriLife  
Extension Office**  
RSVP BY March 18th  
(903)693-0380



PANOLA COUNTY  
groundwater conservation district

**AGENDA:**

- 5:00 pm Registration/ Soil Testing Packets Picked up
- 5:15 pm Meal Starts
- 5:30 pm Safe Handling of Chemical Pesticides
- 6:15 pm Water Well Management and Protection
- 7:00 pm Program Evaluation Meeting Adjourn

**Program Topics Presented By:**  
Lee Dudley CEA- Panola County  
&  
Leah Adams - General Manager  
Panola County Groundwater  
Conservation District

**RSVP By March 21st  
(903)693-0380**



## Goal B.2.

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

**B.2. Standard:** The District's Annual Report will include a summary of the evaluation of the District Rules, and will provide a recommendation as to whether any amendments to the Rules are needed to facilitate the prevention of waste.

## Summary of Actions

From September through October of 2016, the Board reviewed and discussed the District Rules for any necessary changes. In November, a Public Hearing was held for rule changes concerning permitting water wells used for fracking, and exempting domestic water wells from spacing requirements. Numerous oil and gas companies were in attendance to express concerns with the rule change regarding the permitting of frack pond water wells. After discussion, all parties agreed to work together through a series of meetings to reach a solution that is agreeable to all. The Board of Directors agreed to approve the exemption of domestic water wells from spacing requirements and to table the rule change on permitting until the meetings can be held. A copy of the agenda, the public hearing notice, the affidavit of publication, and the minutes showing the rule review can be found in **Appendix A**. Other suggested revisions include water well spacing and water well construction requirements, which should be considered in 2017.

## Goal C.1.

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

**C.1. Standard:** The attendance at any Region I meeting by a representative of the District will be included in the District's Annual Report, and will indicate the dates of attendance.

## Summary of Actions

The District participates in the regional planning process by attending Region I and Region D Planning Group meetings. The attendance of District staff at these meetings provides valuable input to the Planning Group relative to groundwater's role in overall regional planning, and it helps to coordinate information between the Regional Planning Groups and GMA 11. Of the two meetings for Region I, both were attended by a representative of the District. **Appendix B** shows the attendance of a representative at both the May 18, 2016 and the November 9, 2016 meetings. A representative attended the November 9, 2016 meeting, but the signed minutes will not be available until the next meeting in 2017, which had not been scheduled at the time of this report. The draft minutes have been included, even though they are not signed. **Appendix C** shows the minutes from Region D for the March 16, 2016 meeting attended by District staff.

## Goal D.1.

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

**D.1. Standard:** The District's Annual Report will include a description of the number of water levels measured and the monitoring results of the measured water levels for each year.

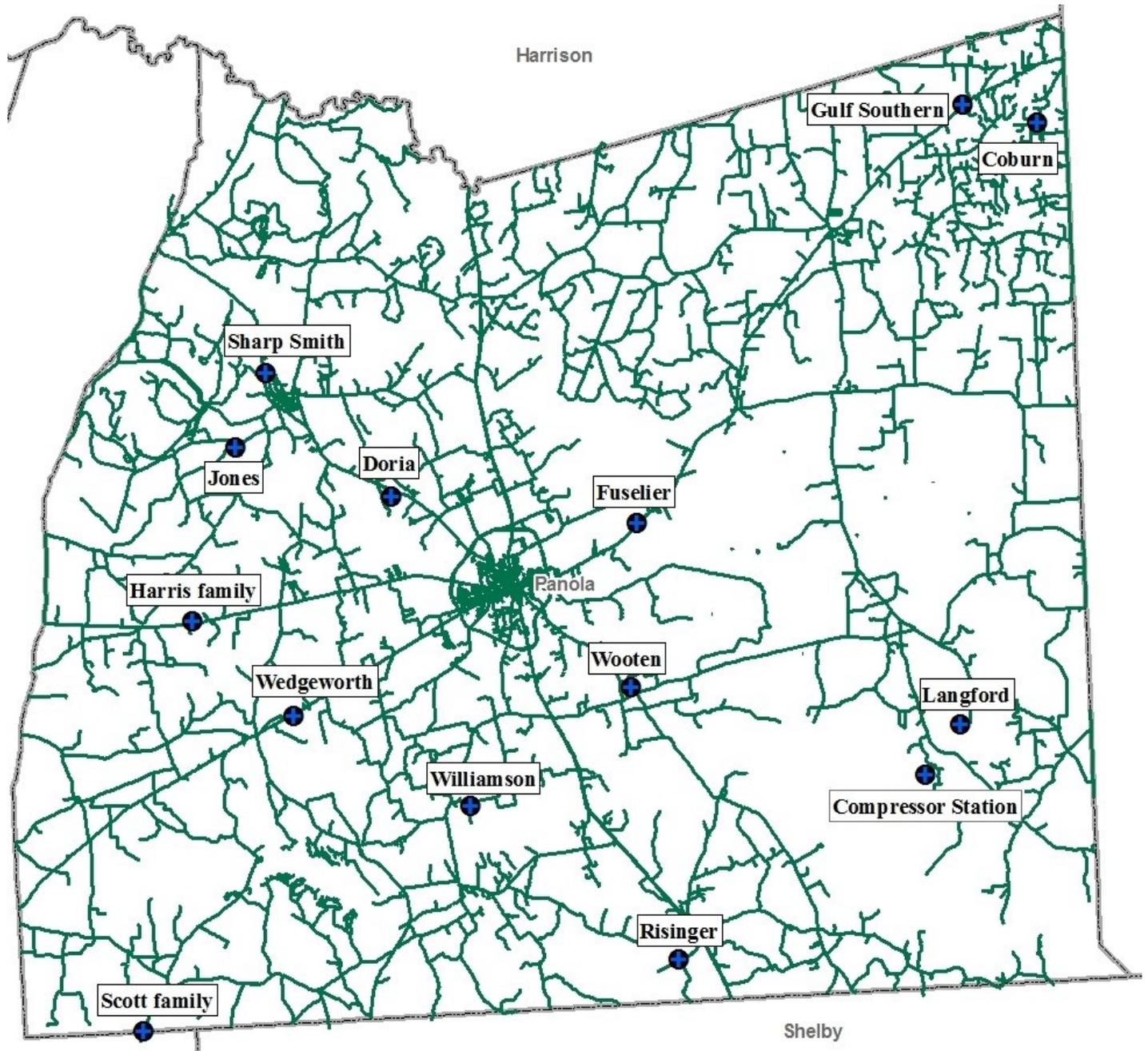
## Summary of Actions

The District continues to check 24 water wells for water levels. Ten (10) of the water wells are annual State wells for TWDB, and the remaining fourteen (14) are checked monthly for the District (**Exhibit 4**). Based on the 2016 measurements, we saw a net decline of 0.11 feet in water levels over the course of the year. Since starting the program mid-year in 2011, we have seen a net change in water levels as follows: 2012 = up 1.25 feet, 2013 = up



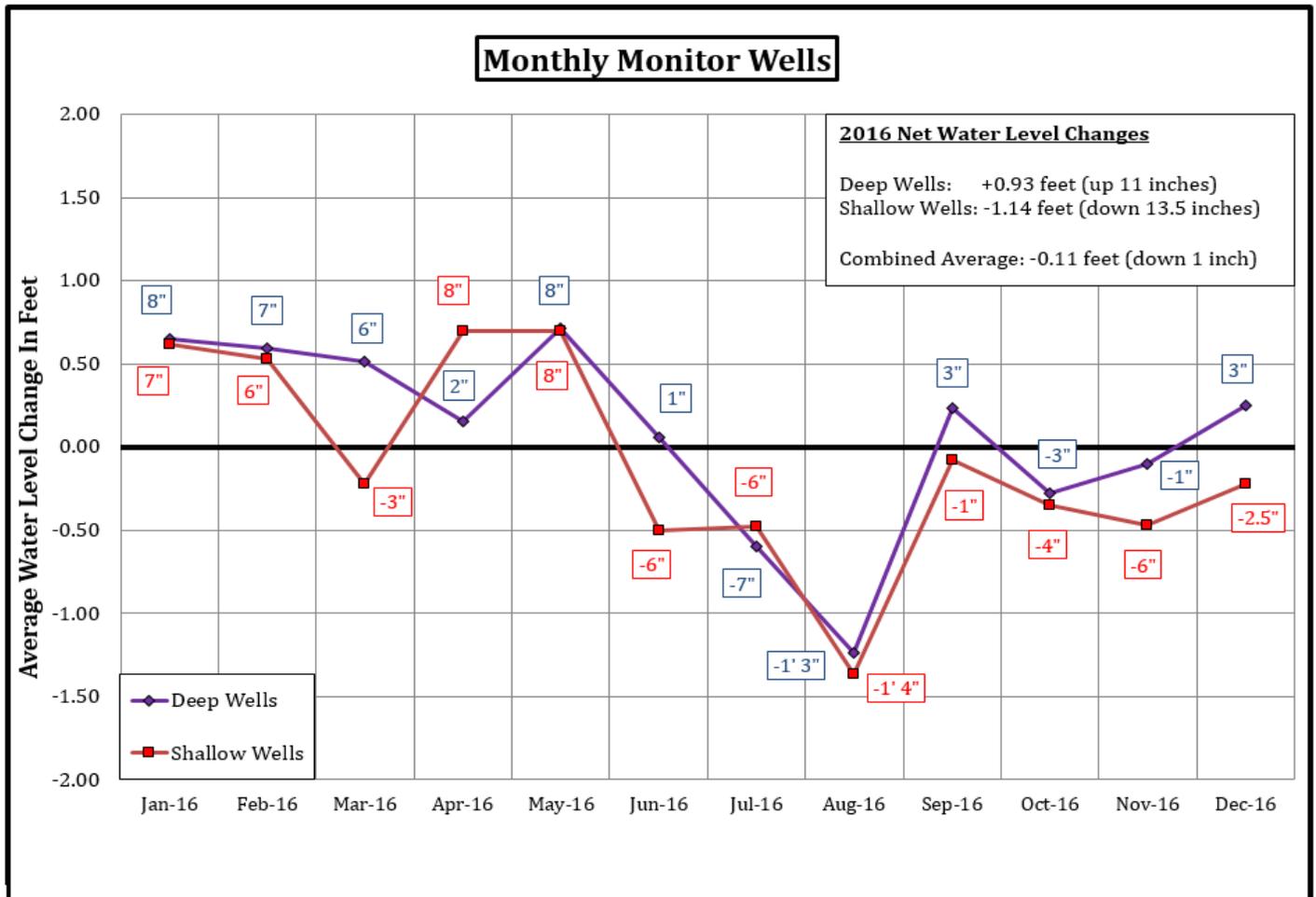
0.02 feet, 2014 = up 0.65 feet, and 2015 = up 2.72 feet (**Table 9 and 10**). The District also had on average 32 water wells used specifically to monitor changes due to hydraulic fracturing (**Exhibit 5 and Exhibit 6**). The frac pond monitor water wells help us learn about the drawdown and recovery of the aquifer. The District continues to use a data logger that measures pressure, temperature, and specific conductivity.

# Exhibit 4 - Map of Monthly Monitor Wells



# Tables 9 and 10 - Monitor Well Water Level Data

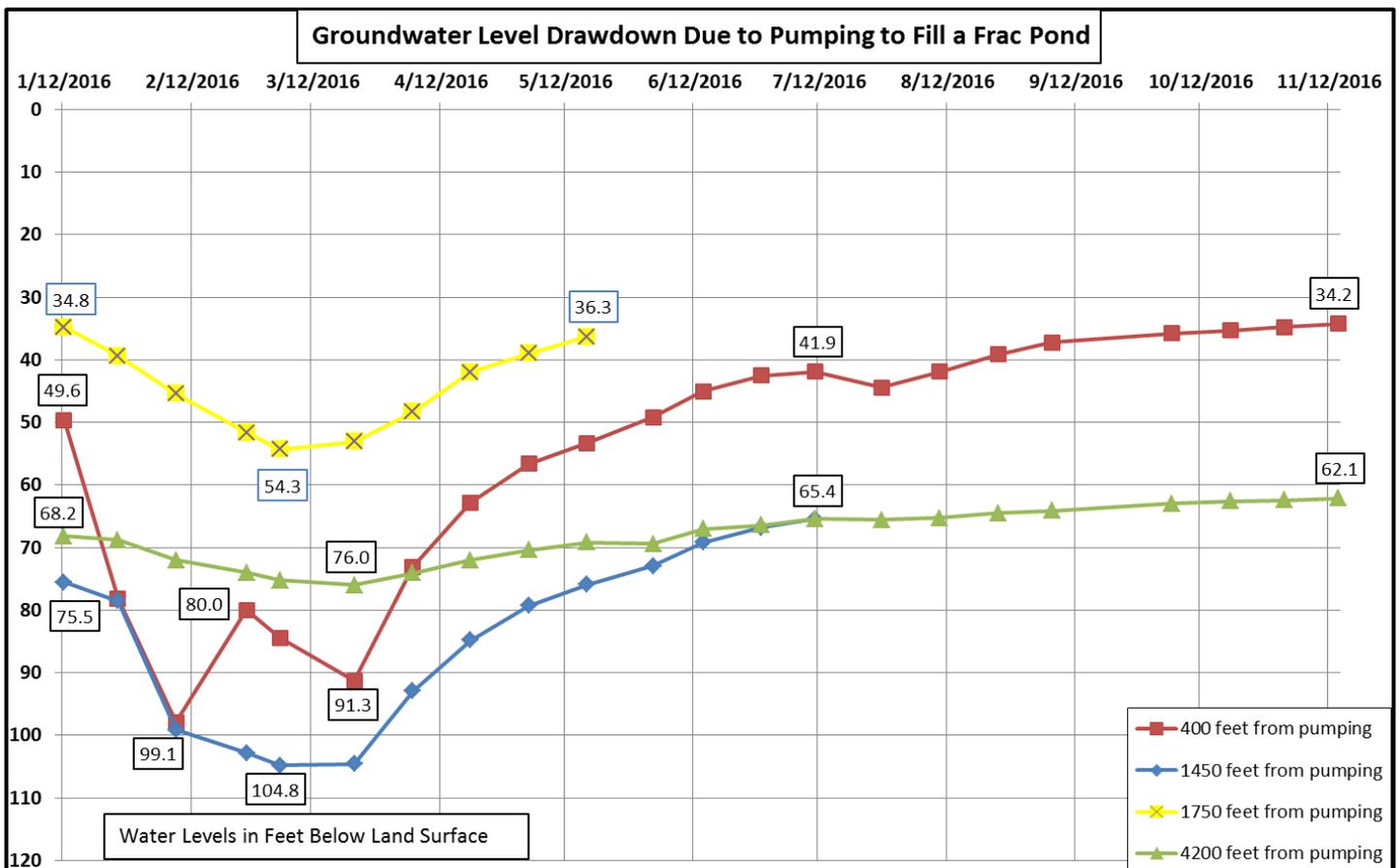
PCGCD Well ID	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
3548226	40.5	40.2	39.9	39.7	39.3	39.0	40.2	43.1	42.1	42.1	42.1	41.4
3553658	66.1	65.4	65.1	64.4	64.2	63.8	63.8	64.0	63.8	63.8	63.6	63.4
3554612	14.7	14.4	14.4	13.9	13.6	13.8	14.1	14.9	15.3	15.7	16.1	16.3
3552906	34.7	34.0	33.9	33.7	33.7	33.5	33.2	33.0	33.1	33.0	33.4	33.5
3553105	23.2	22.8	23.1	22.0	20.8	21.3	21.9	23.2	22.7	23.2	24.0	24.4
3564115	24.4	23.9	23.4	22.8	22.0	22.4	23.0	25.6	25.0	24.8	25.4	25.0
3706307	19.8	19.0	19.4	18.4	18.9	19.6	19.8	20.7	20.5	20.9	21.2	21.3
3561208	6.1	5.9	6.7	6.0	3.0	4.7	6.5	10.2	10.3	10.8	11.4	11.6
3562402	70.5	70.3	70.0	69.9	70.0	70.2	70.7	71.6	71.5	71.6	71.8	71.5
3562337	56.5	55.0	54.7	54.9	53.9	53.7	55.4	55.5	55.7	56.2	55.7	55.5
3563623	38.7	38.2	37.8	37.2	36.6	36.7	36.9	37.3	37.2	37.9	38.0	38.1
Gulf Southern	28.4	27.1	26.4	25.8	25.6	25.7	26.4	28.8	29.3	30.3	31.0	30.9
3545721	58.1	58.4	57.1	58.5	55.9	55.5	55.4	55.8	55.3	55.4	55.3	55.1
Scott family	67.9	67.1	67.0	66.3	66.1	66.2	66.5	68.2	68.8	69.2	69.5	69.8



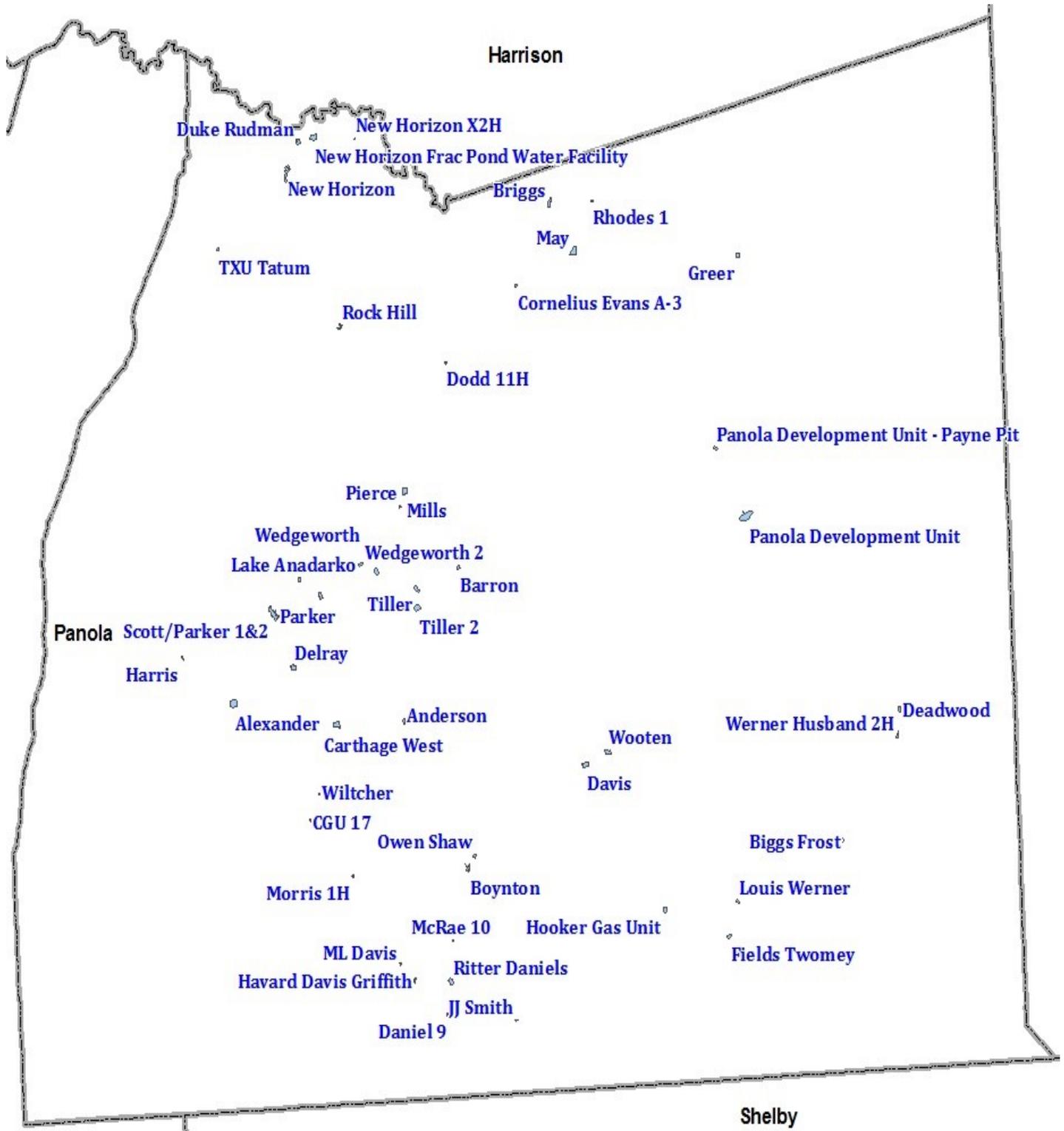
# Exhibit 5 - Hydraulic Fracturing Pond Summary and Example Data

In 2016, the District monitored twenty frac pond areas, with sixteen of those areas showing full water level recovery in the same year. Another four areas showed partial recovery in 2016, with a combination of prolonged pumping and inconsistent recharge likely preventing complete recovery. An average of thirty-two water wells were checked monthly to monitor the effects of concentrated pumping fields that were used to supply hydraulic fracturing.

The largest drawdown seen in 2016 was about forty-eight feet, which was measured in a well four hundred feet from the nearest pumping well. The pumping field in this scenario (graphed below) consisted of twelve wells, and 46,326,700 gallons were reported as produced in 2016 by those wells.



# Exhibit 6 - Map of Hydraulic Fracturing Ponds



## Goal E.1.

**E.1. Objective:** The District's Management Plan requires the District to download at least one updated Palmer Drought Severity Index ("PDSI") map each month and to check for regular updates to the Drought Preparedness Council Situation Report ("Situation Report").

**E.1. Standard:** The District will include the 12 monthly downloaded PDSI maps and Situation Reports in the Annual Report for each fiscal year.

## Summary of Actions

The Palmer Drought Severity Index Reports (PDSI Reports) can be found in **Appendix D** of this document. The PDSI maps show that Panola County stayed in the very moist to extremely moist levels of moisture throughout the year. May and August were reported as the wettest months for 2016, while November and December saw moderately moist conditions. The Situation Reports normally included in the Annual Report were not available for 2016 on the Texas Department of Public Safety website. A screen shot of the website can be found in **Appendix E** of this document.

## Goal E.2.

**E.2. Objective:** The District will create and adopt, through the Board of Directors, a Drought Contingency Plan, and will monitor drought conditions in the Carrizo-Wilcox Aquifer as outlined in the Drought Contingency Plan. If necessary, the District will update its Drought Contingency Plan when changes are warranted.

**E.2. Standard:** The District's Annual Report to the Board of Directors will provide a summary of any implementations of the Drought Contingency Plan for each year and will include an update on any revisions made during the year.

## Summary of Actions

The drought contingency plan was approved at the May 24, 2016 board meeting. Attached in **Appendix F** is a copy of the plan and the approved minutes for the May 24, 2016 meeting. There have been no problems with drought since its approval ,so the plan has yet to be activated.

## Goal F.1.

**F.1. Objective:** The District will promote conservation at least once during each fiscal year by distributing literature packets or brochures and will sponsor an educational program/curriculum.

**F.1. Standard:** The District's Annual Report will provide a summary of the District's efforts and a copy of any information provided by the District to the public during the previous fiscal year to promote conservation.

## Summary of Actions

The District distributed 3,500 book covers for the 2016 school year. **Exhibit 7** on the next page shows a copy of the book cover promoting conservation and the schools receiving the covers. Our website also provides suggestions of ways to conserve water. **Exhibit 8** shows a snapshot of the website links. The District also participated in the annual summer reading program at the library. Office Manager, Teresa Griffin, constructed model aquifers with the participants and distributed a conservation tip sheet, (**Exhibit 9**). In 2016, the District began a quarterly newsletter in efforts to educate and keep citizens informed on District updates. A copy of the first newsletter can be found in **Exhibit 10**. The District also placed an informational piece in the local magazine, *Crossroads*, which is distributed quarterly to every mailbox in the county (**Exhibit 11**). In 2016, the District also began a rainwater harvesting project at Baker Koonce Intermediate School. The students will be planting a raised-bed vegetable garden and using collected rainwater for irrigation. **Exhibit 12** shows the area to be planted, along with calculations by the students of potential yields from the rainwater harvest system.

# Exhibit 7 - Book Covers

The Book Binding Co.  
 Student Name \_\_\_\_\_ Subject \_\_\_\_\_  
 215-900-007

**HOW MUCH DO YOU KNOW ABOUT WATER?**

Every thing thing needs water. Beavers need water for their beaver to drink. Farmers need it to grow our food. You and your families need water for cooking, cleaning and even when you are playing. But there is only so much water, and there are more and more people using it every day. So use water wisely... **make every drop count!**

Compliments of PANOLA COUNTY

**HERE'S HOW YOU CAN HELP CONSERVE WATER...**

- Leaky faucets waste water. When you find a dripping faucet at home or at school, tell someone so that it can be repaired.
- Turn off the water while you brush your teeth...it can save about four gallons of water each day.
- When you play in the sprinkler, keep it on the grass, not the driveway.
- Water your lawn early in the morning or late in the evening.
- Take short showers or keep handheld water stations.
- Don't let the hose run while mowing your car or yard. Use buckets, sponges, and a water saving nozzle on the hose.
- Do not "sweep" milk and drippings into a water hose... use a broom or rake instead.

**KEEP DRINKING THE BLENDED WATER THAT THE DROPPERS DRINK!**

Water has been on earth for billions of years. It is the only substance on earth that can exist in all three states: solid, liquid, and gas. This means that you can drink it, use it to cook with, and breathe it.

**FOR A LITTLE WATER... YOU CAN BUY...**

4 or 6 oz. drinks, two and a half boxes of cereal, 100 gallons of clean, drinking water delivered to your home!

**IT TAKE ONE GALLON OF WATER TO PRESSURE WASH A HAMBURGER!**

**AMAZING WATER FACTS...**

**ONLY 1% OF THE WATER AFTER A RAINFALL FOR PANOLA COUNTY**

Only water covers nearly 70% of the Earth's surface, only 1% of that water is usable fresh water. 2% of the water is frozen in glaciers and 70% is salt water.

**A MILK CAN BEING BOAST 35 GALLONS OF WATER!**

Water is also used to grow the corn and alfalfa cows eat. From the feed and products from the cow, the milk is produced. The milk is then pasteurized and bottled. The water is used to clean the cow's udder.

**Waterpan**  
The American Water Conservation Society

District	Campus	Quantity
Beckville ISD	Beckville JR-SR High	250
Carthage ISD	Carthage JR High	2,000
Carthage ISD	Carthage High School	500
Gary ISD	Gary School	750
	Total	3,500

# Exhibit 8 - Website Conservation Tips



**PANOLA COUNTY**  
groundwater conservation district

[HOME](#)

[ABOUT US](#)

[OUR WATER](#)

[FAQ'S](#)

[LINKS](#)

[CONTACT](#)

## Conservation Tips

### Milk Jug your toilet

Fill a half-gallon plastic milk jug with water and affix the cap. Flush the toilet and place the jug in the tank, away from the moving parts. This will save a half gallon per flush. Use pebbles or sand in the bottom of the jug if it doesn't stay put. Toilets use more water than anything else in a house, accounting for nearly 30% of indoor water use, according to the U.S. Environmental Protection Agency.

### Think 'on and off'

Continuous flow uses more water than intermittent use. Turn the faucet on and off while brushing teeth, shaving, scrubbing kitchen pans and soaping the car.

### Use less

It's obvious, but shorter showers and running the dishwasher and clothes washer only when full help.

### Let your grass grow

Use a higher wheel setting on your lawn mower- 3 inches or more. Taller grass retains moisture better, requiring less watering. And it inhibits weed growth, saving money on weed-killer.

### Fix leaks

It's a no-brainer to fix leaky faucets, but your toilet might be leaking without you knowing and wasting 200 gallons a day, or about 50 flushes' worth. Place a drop of dark food coloring in the tank. If it reaches the bowl within 15 minutes, you have a leak worth fixing.

### Get WaterSense

The EPA has a relatively new program called WaterSense for labeling plumbing fixtures certified to save water, about 20% on average. It's similar to the EnergyStar label for products that use electricity efficiently. The label goes on water-efficient models of such fixtures as toilets, sink faucets and showerheads. Learn more at [www.epa.gov/watersense](http://www.epa.gov/watersense).

### Don't rinse the dishes

You don't need to rinse dishes before loading them in the dishwasher. Not rinsing could save 6,500 gallons of water per year.

### Use sink disposal sparingly

Using the garbage disposal requires a lot of water. Instead, put food waste in a compost pile, which reduces the need for fertilizer.

### Water smart outdoors

Water in the cool morning to reduce evaporation and aim sprinklers at plants. Use drip hoses where appropriate.

# Exhibit 9 - Conservation Education at the Sammy Brown Library



## WATER CONSERVATION TIPS

- Whenever you wash your hands, don't leave the water running. Wet your hands and turn the water off. Use soap and lather your hands well, then turn the water on to rinse. Turn off the water and make sure it is off completely. Then dry your hands.
- Do the same when you brush your teeth. Turn the faucet on to get your toothbrush and toothpaste wet, and then again to rinse your mouth and toothbrush.
- Since baths use a lot of water (about 37 gallons on average), take short showers instead and use only about 20 gallons of water, instead.
- A regular shower head uses as much as 7 gallons of water every minute. Use a low flow shower head that has a cut-off valve that shuts off the water flow while lathering your hair or shaving legs. You can then turn the water back on, without it starting off cold again. This will help to conserve even more water while showering.
- Use a wastebasket for used tissues, or things like gum wrappers, paper towels, or even dead bugs or goldfish. Don't flush them - the average flush uses as much as 5 gallons of water! Even if the toilets in your house are "low-flow" toilets, using them for trash still uses 1.5 gallons of water unnecessarily.
- In the tank part of the toilets in your house, put several drops of food coloring into the water. If you see the coloring seeping into the bowl, there's a leak. Fixing it can save about 600 gallons of water each month!
- Put a barrel outdoors to catch rain water, then use that water for things like watering plants or flushing toilets and save hundreds of gallons of water a year!
- In the summertime, it's fun to play under the lawn sprinkler. When you do, make sure it's when the lawn is being watered at the same time.
- If there is a dishwasher in your house, encourage everyone to scrape their plates rather than rinse them before loading them into the machine. It should always be full before turning it on.
- If the adults in your home occasionally water the lawn, encourage them to water in the cooler parts of the day (early morning, or at or after sunset), and never on windy days. This keeps in the soil all the water being sprayed instead of most of the water being lost to evaporation.



# Exhibit 10 - Conservation Education Newsletter

The Panola County Groundwater Conservation District was created in 2007 by the 80th Texas Legislature with a directive to conserve, protect and enhance the groundwater resources of Panola County. The District is committed to managing and protecting the groundwater resources within its jurisdiction and to work with other stakeholders to ensure a sustainable, high quality and cost effective supply of water for future generations.

The District also works with other GCD's as members of the Ground Water Management Area 11 (GMA 11), Texas Alliance for Groundwater Districts and the Regional Water



Planning Group to ensure sustainability within surrounding areas. The District will strive to develop and promote implementation of water conservation and management strategies to protect water resources for the benefit of the citizens, the economy and the environment of the District.

The preservation of this most valuable resource can be achieved in a prudent and cost effective manner through conservation, education, management, and rule implementation.

Any action taken by the District shall be upon full consideration and deference to the individual property rights of the citizens residing in the District.

## 2015 RAINFALL AMOUNTS

To help us better understand the recharge of the aquifer, the District uses rain gauges throughout the County to measure and track the amount of rainfall each year. The chart below shows the amount of rainfall collected at different areas around the County. In 2015, the District measured an average of 61 inches for the entire

Location	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	2015 Total
Carthage	16.84	18.03	3.87	23.13	61.87
Dead-wood	19.09	17.89	2.66	20.14	59.78
Gary	17.61	18.61	3.69	21.77	61.68
Rock Hill	15.89	18.85	4.85	20.44	60.03
DE Berry	16.75	19.75	2.61	22.3	61.41
NOAA Data	18.88	18.32	4.27	24.11	65.58

## DATES TO REMEMBER

June 30-End of 2nd quarter.  
Production due by July 31.

September 30-End of 3rd quarter.  
Production due by October 31st.

December 31-End of 4th quarter.  
Production due by January 31.



**Panola County Groundwater Conservation District**  
419 W. Sabine Street  
Carthage, Texas 75633  
Phone: 903-690-0143  
Email address:  
[district@pcgcd.org](mailto:district@pcgcd.org)

Welcome to the first edition of  
***Groundwater for Tomorrow!***

This quarterly publication is brought to you by the Panola County Groundwater Conservation District to keep you up-to-date on the "goings on" at the Conservation District. This newsletter will be a valuable tool to keep you informed on rule changes that could possibly impact you along with interesting statistics and educational materials in the area of groundwater management.

The groundwater conservation district strives to ensure our most precious natural resource is preserved and the quality maintained through efforts to reduce pollutants reaching the groundwater and impairing the quality.

### ***Inside this Issue:***

- ***Our Mission***
- ***Who We Are***
- ***2015 Well Registrations***
- ***2015 Water Use in County***
- ***2015 Rainfall Totals***
- ***Dates to Remember***

# Exhibit 11 - Conservation Education Crossroads



## PANOLA COUNTY

groundwater conservation district

419 W. Sabine Street • Carthage, Texas 75633  
Phone: 903.690.0143 • Email: [district@pcgcd.org](mailto:district@pcgcd.org)

**What  
We Do  
For You**

- We monitor the aquifer condition through our well monitoring program. PCGCD checks water levels in 26 wells and based on 2015 measurements we saw a net rise of 2.75 feet in water levels over the year!
- We conduct scientific studies in our area. These studies are passed on to the State for more accurate information regarding our groundwater.
- We maintain a well registration database. This allows us to ensure adequate spacing between wells to protect all wells from being drawn down to unusable levels.
- We collect quarterly production data. Production data allows us to gain a reasonable estimated water usage/need for county to help ensure our water needs are protected.
- For more information on these programs or any other questions please contact us!

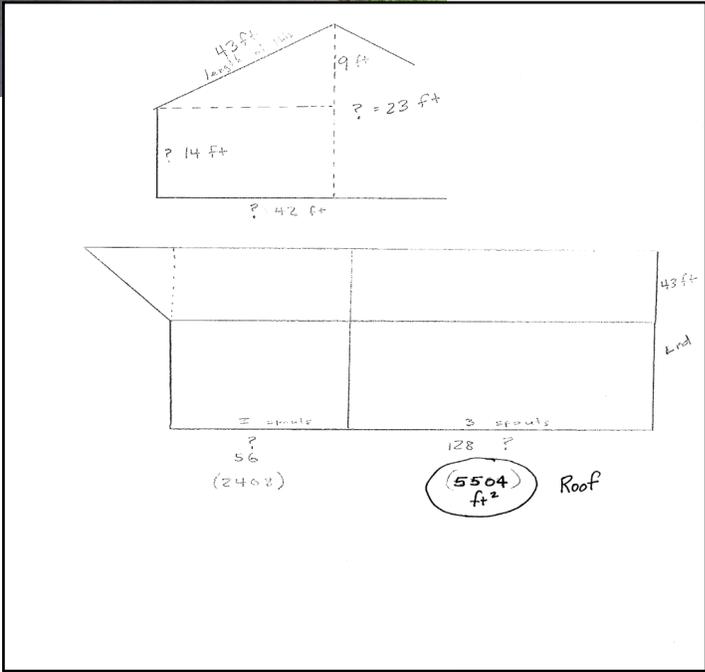
Like Us On



# Exhibit 12 - Conservation Education



Future location of Rainwater Harvest System



Rainwater Harvest yield calculations by the students

Outdoor classroom



## Goal F.2.

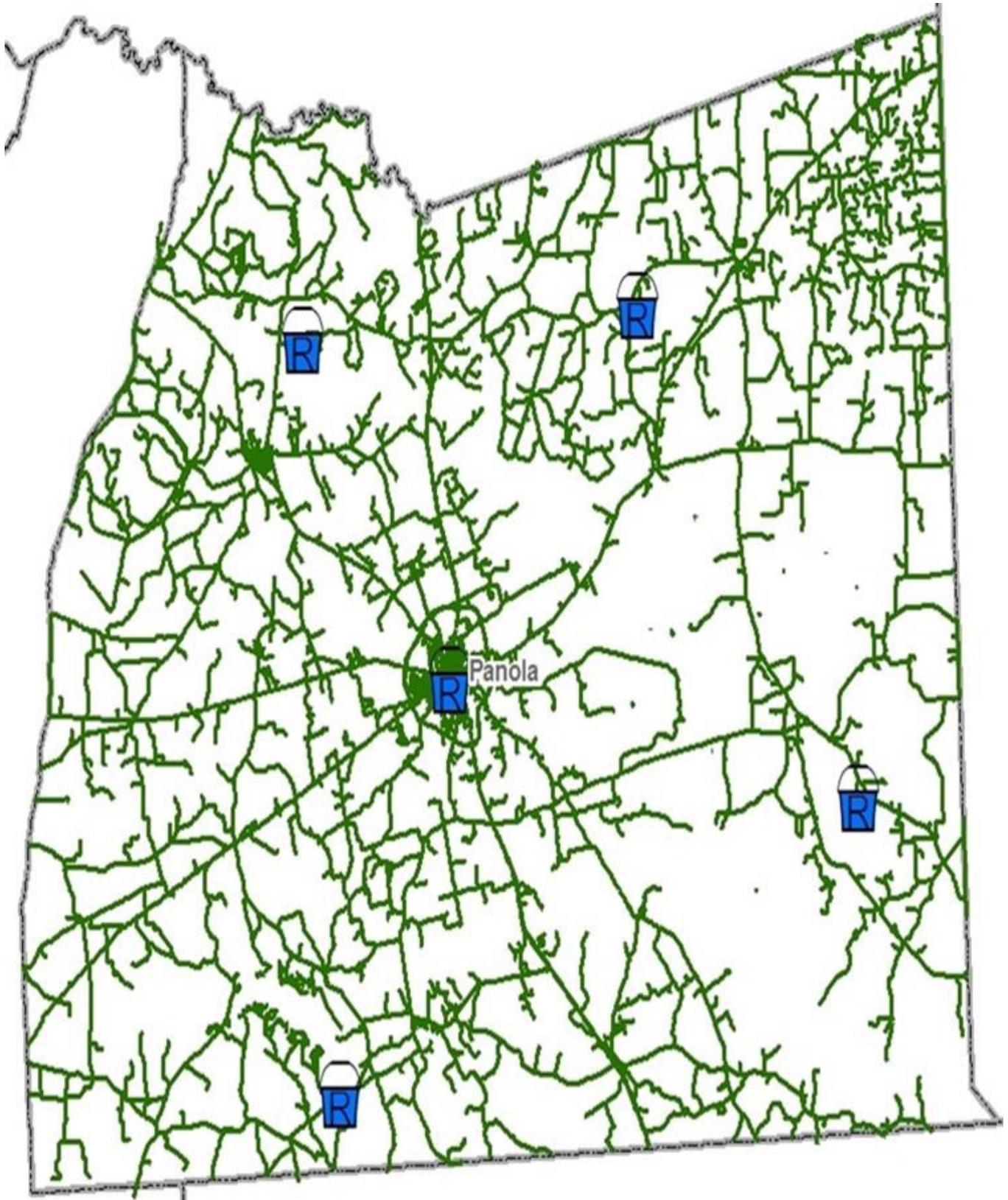
**F.2. Objective:** The District will provide information relating to recharge enhancement on the District website at least one time each fiscal year.

**F.2. Standard:** Each year, the District's Annual Report will include a copy of the information that has been provided on the District website at least once each fiscal year.

## Summary of Actions

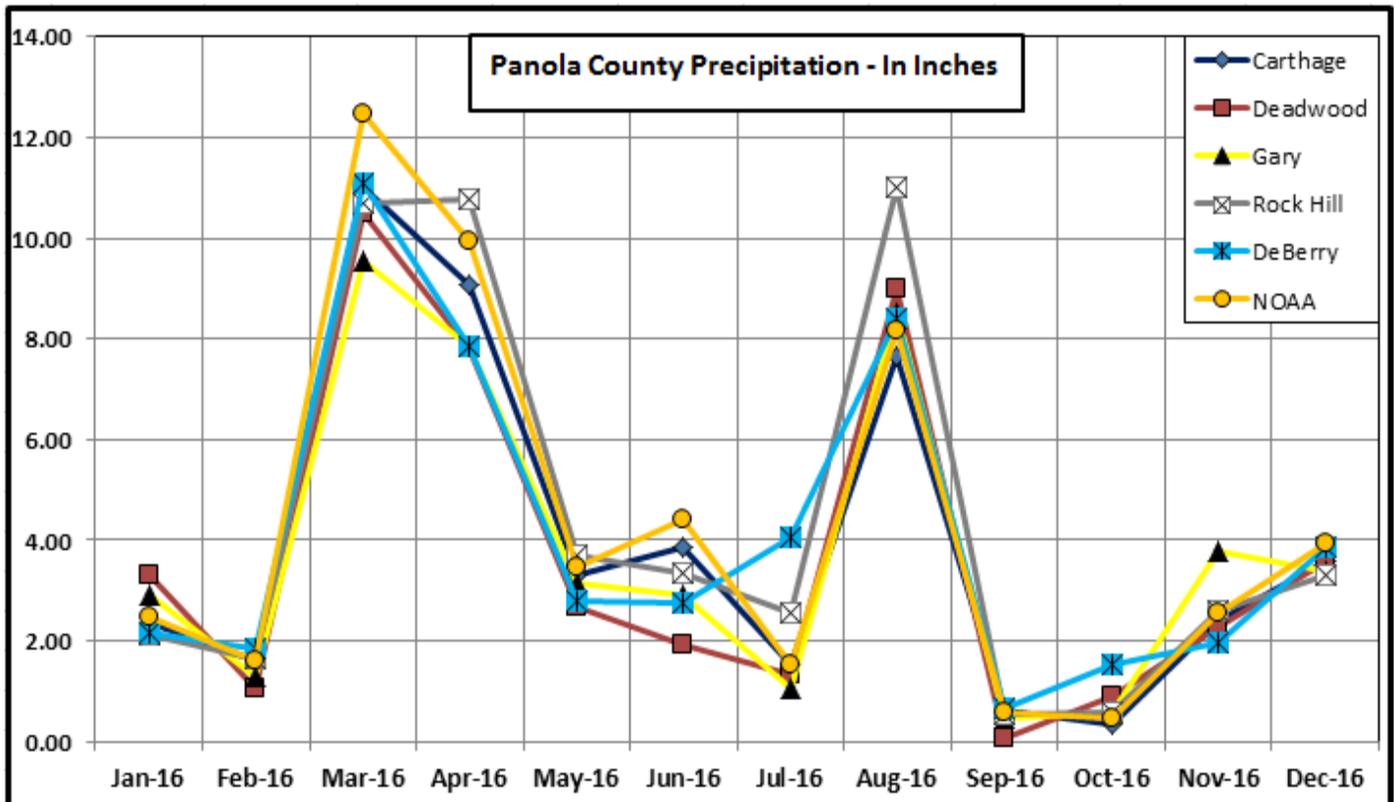
To help us better understand the recharge of the aquifer, the District uses rain gauges throughout the county to measure and track the amount of rainfall each year. The District currently has five (5) rain gauges. The map in **Exhibit 13** shows the placement of the gauges and the amount of rainfall collected at different areas around the county. In 2016, the District measured an average of 48 inches for the entire county (**Tables 11 and 12**). We also track the NOAA totals for precipitation in the county. The website records all recharge information, including other information which affects recharge. An example of the website posting is found in **Exhibit 14**.

# Exhibit 13 - Map of Rain Gauges



# Tables 11 and 12 - Rainfall in Panola County

Identifier	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	2016 Total
Carthage	14.98	16.24	9.80	6.31	47.33
Deadwood	14.87	12.44	10.43	6.77	44.51
Gary	13.72	13.89	10.05	7.75	45.41
Rock Hill	14.45	17.81	14.09	6.47	52.82
DeBerry	15.05	13.36	13.12	7.34	48.87
NOAA Data	16.56	17.82	10.26	6.93	51.57



# Exhibit 14 - Website Recharge Enhancement



PANOLA COUNTY  
groundwater conservation district

HOME

ABOUT US

OUR WATER

FAQ'S

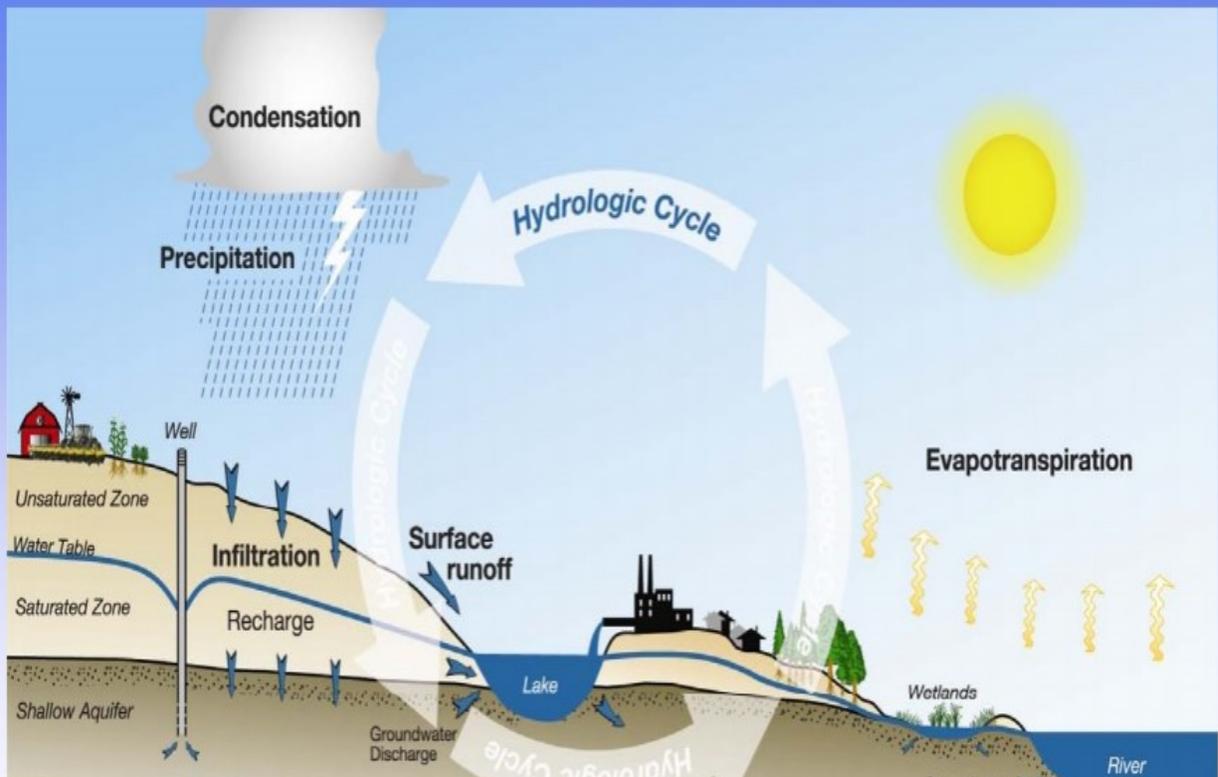
LINKS

CONTACT

## Recharge Enhancement

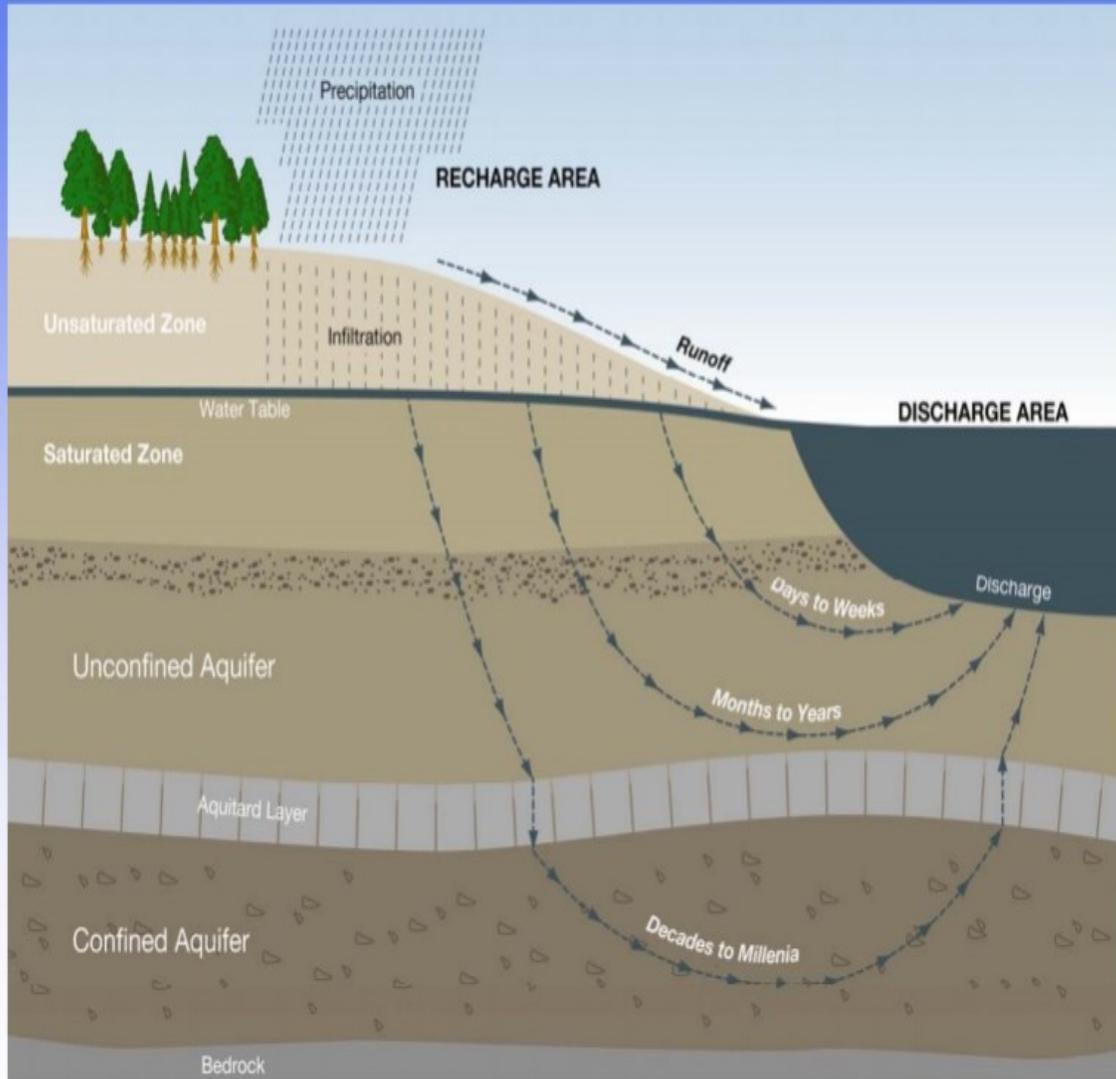
Credit to the Illinois State Water Survey for the following graphics:

### The Hydrologic Cycle



# Exhibit 14 Continued - Website Recharge Enhancement

## Local/Regional Groundwater Flow Systems



Recharge is the term used to describe how an aquifer gains water from the surface (precipitation, rivers, etc.) or the subsurface (other aquifers). When an aquifer is recharging, water levels rise to be closer to the ground surface, and artesian pressure generally increases. The PCGCD is tracking factors related to recharge such as precipitation (rainfall, snow, etc.) and water levels in water wells.

Panola County is in the outcrop of the Carrizo-Wilcox aquifer, also referred to as the recharge zone of the Carrizo-Wilcox. This means that some of the geologic formations which store groundwater are oriented so that they intersect the ground surface in such a way that they are “open ended” and can receive water from the surface. This is good news for us in that the aquifer will recharge faster than in non-outcrop areas, but it is bad news in that there is a higher risk of groundwater contamination from surface sources.

# Exhibit 14 Continued - Website Recharge Enhancement

## Rain Gauges

The PCGCD has 5 rain gauges in Panola County, located in Deadwood, DeBerry, Rock Hill, Gary, and Carthage. At the end of each month, the precipitation recorded by each gauge is averaged to give an approximate rainfall amount for the county. In the graphs below, the data recorded by the PCGCD are compared to what is reported by the National Oceanic and Atmospheric Administration (NOAA) for our area.

2011 Cumulative Precipitation

2012 Cumulative Precipitation

2013 Cumulative Precipitation

2014 Cumulative Precipitation

2015 Cumulative Precipitation

2016 Cumulative Precipitation

2017 Cumulative Precipitation

Monthly Precipitation

Monthly Precipitation Since 2011

NOAA Website

In the link below is a graph of the annual cumulative precipitation totals for the Carthage weather station, dating back to the 1950s, courtesy of the Southern Regional Climate Center. This graph provides interesting insight into our local wettest years, driest years, and long-term patterns.

Historic Annual Precipitation – Carthage

## Drought Monitoring

Drought is a major influence on all water sources. When precipitation becomes sparse, surface water and groundwater conservation remains crucial in meeting water demands. Provided below is a link to the U.S. Drought Monitor for Texas, a useful tool for tracking state and local drought conditions week-to-week.

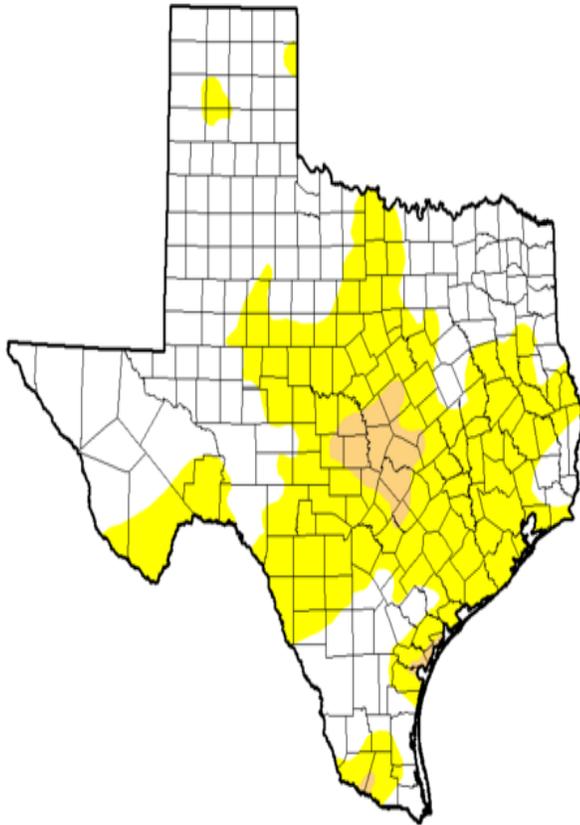
# Exhibit 14 Continued - Website Recharge Enhancement

## U.S. Drought Monitor Texas

February 16, 2016  
(Released Thursday February 18, 2016)  
Valid 7 a.m. EST

Statistics type: Traditional Percent Area

Export table:   



Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current <a href="#">2016-02-16</a>	55.16	44.84	3.57	0.00	0.00	0.00
Last Week <a href="#">2016-02-09</a>	88.01	11.99	0.00	0.00	0.00	0.00
3 Months Ago <a href="#">2015-11-17</a>	90.41	9.59	0.61	0.00	0.00	0.00
Start of Calendar Year <a href="#">2015-12-29</a>	95.48	4.52	0.00	0.00	0.00	0.00
Start of Water Year <a href="#">2015-09-29</a>	34.51	65.49	38.32	17.55	6.27	0.00
One Year Ago <a href="#">2015-02-17</a>	39.21	60.79	43.39	27.81	13.92	4.46

Estimated Population in Drought Areas: **1,970,980**

[View More Statistics](#)

### Intensity:

-  D0 (Abnormally Dry)
-  D1 (Moderate Drought)
-  D2 (Severe Drought)
-  D3 (Extreme Drought)
-  D4 (Exceptional Drought)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying [text summary](#) for forecast statements.

### Author(s):

Eric Luebbehusen, U.S. Department of Agriculture

Download:   

[View drought planning resources](#)

The National Drought Mitigation Center | 3310 Holdrege Street | P.O. Box 830988 | Lincoln, NE 68583-0988  
phone: (402) 472-6707 | fax: (402) 472-2946 | [Contact Us](#) | [Web Policy](#)



# Exhibit 14 Continued - Website Recharge Enhancement

## Monitor Wells

The PCGCD currently has 14 monitor wells spaced throughout the county which are used to measure water levels once each month. The Texas Water Development Board has 16 monitor wells in Panola County, all of which have been absorbed by the District in order to supplement our database. Below are links to graphs showing the average change in water level county-wide each month and each year.

[PCGCD 2011 Monthly Monitor Wells](#)

[PCGCD 2012 Monthly Monitor Wells](#)

[PCGCD 2013 Monthly Monitor Wells](#)

[PCGCD 2014 Monthly Monitor Wells](#)

[PCGCD 2015 Monthly Monitor Wells](#)

[PCGCD 2016 Monthly Monitor Wells](#)

[PCGCD 2017 Monthly Monitor Wells](#)

[Monitor Wells Since 2011](#)

## Recharge

Pages 7-9 of the District Management Plan include information from the Texas Water Development Board pertaining to recharge.

Total recharge from precipitation for the Carrizo-Wilcox is 38,005 acre-feet per year.

Total discharge from the aquifer to the surface (springs, lakes, river, etc.) is 29,888 acre-feet per year.

Total flow into the District via the subsurface: 5,655 acre-feet per year.

Total flow out of the District via the subsurface: 3,123 acre-feet per year.

Net hydrologic gain (not accounting for pumping): 10,649 acre-feet per year.

## Additional links:

[The Water Cycle: Infiltration](#)

[Aquifer recharge: Functions and Uses](#)

[Underground Injection Control; AR & ASR](#)

[Enhancing Groundwater Recharge](#)

[Rainwater Harvesting: Soil Storage and Infiltration](#)

[Enhanced Aquifer Recharge](#)

[USGS Drought and Groundwater](#)

## Goal F.3.

**F.3. Objective:** The District will advocate for rainwater harvesting each year by providing updated information about rainwater harvesting on the District website at least once each fiscal year.

**F.3. Standard:** The District's Annual Report will include a copy of the information on rainwater harvesting which has been provided on the District website within the previous fiscal year.

## Summary of Actions

The District has added to the District website the information on rainwater harvesting. **Exhibit 15** is a snapshot showing the links on our website.

The District continues to work with the AgriLife Extension Service on the rainwater harvesting project at Baker Koonce Intermediate School for their raised-bed gardens. Tyson Foods donated the money to provide a tank for the rainwater harvesting project. The entire project should be completed in 2017.

# Exhibit 15 - Website Rainwater Harvesting



[HOME](#) [ABOUT US](#) [OUR WATER](#) [FAQS](#) [LINKS](#) [CONTACT](#)

## Rainwater Harvesting

Click the links below for more information about Rainwater Harvesting.

[TWDB – Rainwater Harvesting](#)

[The New Landscape of Rainwater Harvesting in Texas – \(article by Kristen Fancher, Attorney\)](#)

[AgrLife Extension, Texas A&M – Rainwater Harvesting](#)

### NEWS

[Water Is The Future](#)

OCTOBER 16, 2013

### ANNOUNCEMENTS

[February Board Meeting](#)

FEBRUARY 23, 2016

### CONTACT US

419 W. Sabine St., Carthage, TX 75633

903-690-0143

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Developed by Arnold Graphic Design

## Goal G.1.

**G.1. Objective:** The District will monitor water levels within the District boundaries on an annual basis by measuring the water level of at least ten (10) wells.

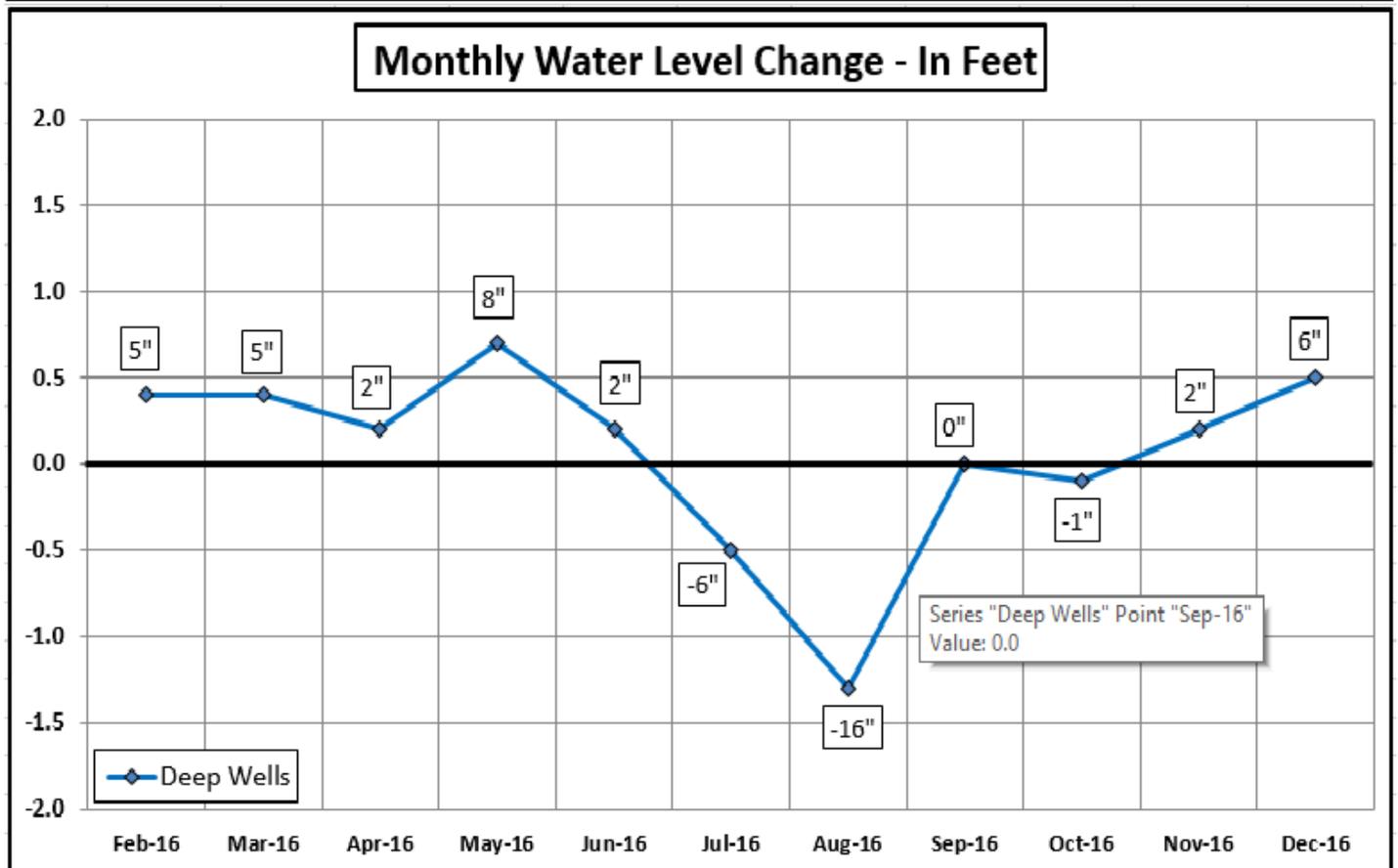
**G.1. Standard:** The District's Annual Report will include a description of the number of wells checked and the monitoring results of the measured water levels for each year.

## Summary of Actions

For the year 2016, the District used 14 water wells to monitor the water levels within the county. The purpose was to monitor the water table throughout the county in an attempt to quantify the established Desired Future Conditions of the aquifer. **Tables 13 and 14** show the numbers for drawdown in the monitor wells. The District has also attempted to learn more about aquifer drawdown, well interference, and well recovery through consulting work completed by INTERA, Inc. Geoscience and Engineering Solutions. Copies of the reports can be found at the following link: <http://pcgcd.org/aquifer-research-and-reports/>. The District will continue these studies into 2017 to assist with tracking the Desired Future Conditions set by GMA 11.

# Tables 13 and 14 - Monitor Wells and Water Level Monitoring Results

PCGCD Well ID	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
3548226	40.5	40.2	39.9	39.7	39.3	39.0	40.2	43.1	42.1	42.1	42.1	41.4
3553658	66.1	65.4	65.1	64.4	64.2	63.8	63.8	64.0	63.8	63.8	63.6	63.4
3564115	24.4	23.9	23.4	22.8	22.0	22.4	23.0	25.6	25.0	24.8	25.4	25.0
3562402	70.5	70.3	70.0	69.9	70.0	70.2	70.7	71.6	71.5	71.6	71.8	71.5
3562337	56.5	55.0	54.7	54.9	53.9	53.7	55.4	55.5	55.7	56.2	55.7	55.5
3563623	38.7	38.2	37.8	37.2	36.6	36.7	36.9	37.3	37.2	37.9	38.0	38.1
Gulf Southern	28.4	27.1	26.4	25.8	25.6	25.7	26.4	28.8	29.3	30.3	31.0	30.9
3545721	58.1	58.4	57.1	58.5	55.9	55.5	55.4	55.8	55.3	55.4	55.3	55.1
3553525	84.5	84.4	84.0	83.5	83.0	82.1	81.5	81.0	80.7	80.3	79.8	79.1
3561405	85.5	86.0	86.3	86.0	85.2	84.3	84.6	87.9	89.8	89.1	86.8	84.5



## Goal G.2.

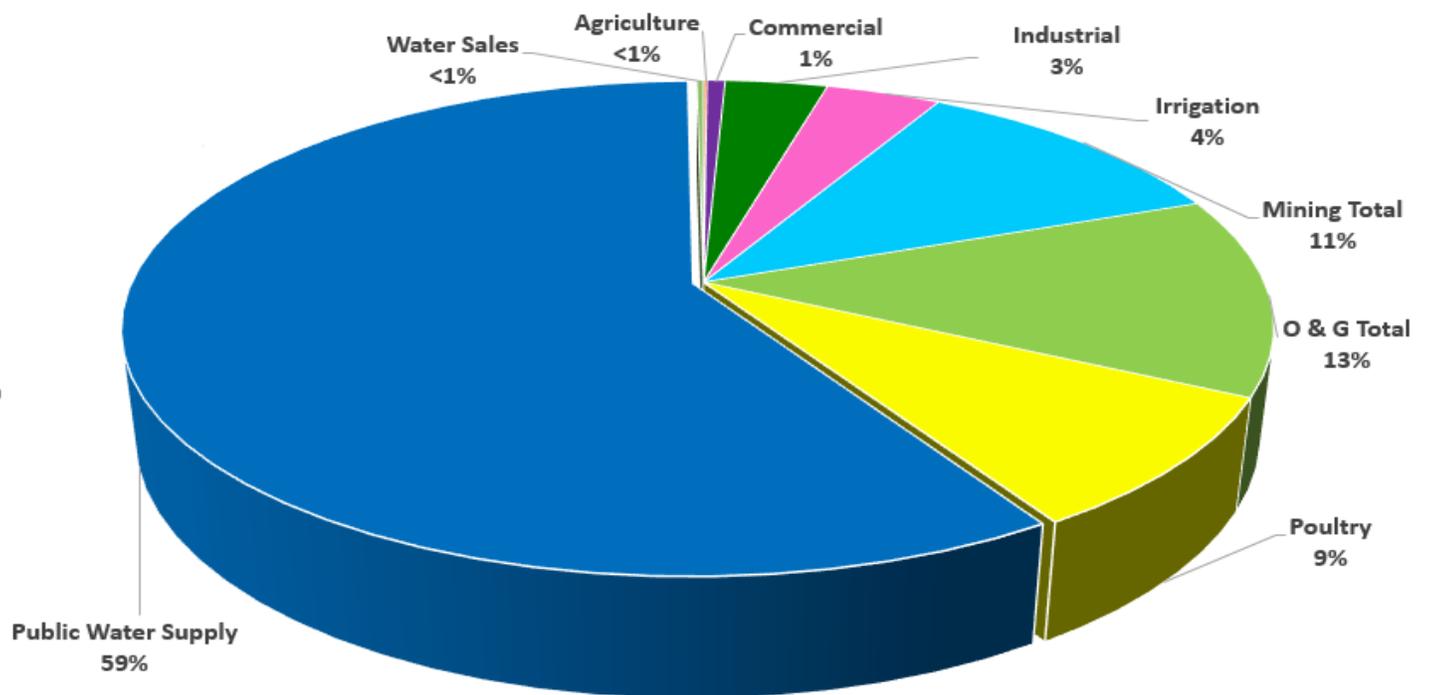
**G.2. Objective:** The District will consider a reasonable estimated amount of actual groundwater production under existing permits through tracking of production for all permitted water wells.

**G.2. Standard:** The District's Annual Report will include the amount of reported production for each permitted water well within the boundaries of the District each year.

## Summary of Actions

In 2016, the District accepted 75 operating permit applications. Of the 75 permits issued, 68 were operating permit renewals, and 7 were new operating permits. The addition created a total of 125 operating permits and 87 grandfathered use permits for the District. The District has permitted out a total of 2,486,602,590 gallons or 7,631 acre-feet of water for permits. The reported total production for all permitted water wells in 2016 was 706,910,562 gallons or 2,169 acre-feet. The total amount of groundwater permitted by well type is represented in **Exhibit 16**.

# Exhibit 16 - Permit Amounts Issued by Well Type



## Management Goals Determined Not Applicable to the District

The following goals have been determined by the District to not be applicable.

- ◆ Controlling and Preventing Subsidence
- ◆ Addressing Precipitation Enhancement
- ◆ Addressing Brush Control

# Appendix A - Rule Review

## PUBLIC HEARING – RULE CHANGES

**Panola County Groundwater Conservation District**  
419 W Sabine St., Carthage, Texas 75633  
Phone: 903.690.0143 Fax: 903.690.0135

**Public Hearing on District Rule Amendments**  
Tuesday, November 22, 2016 at 5:30 pm

County Clerks Office Use Only:
FILED FOR RECORD IN MY OFFICE
AT <u>2:25</u> O'CLOCK <u>P</u> M
NOV 16 2016
BOBBIE DAVIS COUNTY CLERK, PANOLA COUNTY, TEXAS
BY <u>J. Endrey</u> DEPUTY

## PUBLIC HEARING AGENDA – RULE CHANGES

1. Call to order.
2. Public Hearing for District Rule Amendments:
  - a. Changes to the District's rules that address the permitting of water wells involved in oil and gas production activities, including, requiring water wells which are not being used solely for rig supply to be permitted with an operating permit.
  - b. Not requiring water wells used for hydrologic fracturing drilled prior to August 30, 2016 to provide a hydrogeological report as required in District Rule 3.17, but requiring water wells drilled after August 30, 2016 to provide a hydrogeological report.
  - c. Change allowing all domestic water wells that are incapable of producing 25,000 gallons per day to be exempt from spacing requirements listed in District Rule 5.2.
  - d. Changes to a request for rehearing or findings and conclusions of a Board decision.
3. Adjourn

*These public hearings are available to all persons regardless of disability. If you require special assistance to attend or participate in the hearings, please contact the Panola County GCD at (903) 690-0143 at least 24 hours in advance of the meeting.*

At any time during the meeting and in compliance with the Texas Open Meetings Act, Chapter 551, Government Code, Vernon's Texas Codes, Annotated, the Panola County Groundwater Conservation District Board may meet in executive session on any of the above agenda items for consultation concerning attorney-client matters (§551.071); deliberation regarding real property (§551.072); deliberation regarding prospective gift (§551.073); personnel matters (§551.074); and deliberation regarding security devices (§551.076). Any subject discussed in executive session may be subject to action during an open meeting.

# Appendix A Continued - Rule Review

## Certification

I, the undersigned authority, do hereby certify that on September 16, 2016 at or before 5:00 p.m., our office posted and filed the above notice of meeting with the Panola County Clerk's Office, and also posted a copy near the front door of the Panola County GCD office in a place convenient and readily accessible to the general public all times and that it will remain so posted continuously for at least 20 days preceding the scheduled time of said meeting in accordance with Texas Government Code, Chapter 551.



Leah Adams, General Manager  
Panola County Groundwater Conservation District

WITNESS THE HAND AND SEAL OF THE UNDERSIGNED CLERK ON THIS THE  
16<sup>th</sup> DAY NOVEMBER, 2016 AT 2:25 O'CLOCK A.M. P.M.



BOBBIE DAVIS COUNTY CLERK  
PANOLA COUNTY, TEXAS

BY Jeresa Endley DEPUTY

# Appendix A Continued - Rule Review

\*\*\*CORRECTED\*\*\*

## PANOLA COUNTY GROUNDWATER CONSERVATION DISTRICT NOTICE OF PUBLIC HEARING ON DISTRICT RULE AMENDMENTS

Notice is hereby given that the Board of Directors of the Panola County Groundwater Conservation District ("District") will hold a public hearing on Tuesday, November 22, 2016 at 5:30 PM in the District office located at 419 West Sabine Street, Carthage, Texas, 75633, to discuss, consider, receive public comment, and potentially act on the adoption of proposed amendments to the District Rules.

The proposed amendments to the District Rules include changes that address the permitting of water wells involved in oil and gas production activities, including, requiring water wells which are not being used solely for rig supply to be permitted with an operating permit; not requiring water wells used for hydrologic fracturing drilled prior to August 30, 2016 to provide a hydrogeological report as required in District Rule 3.17, but requiring water wells drilled after August 30, 2016 to provide a hydrogeological report; allowing all domestic water wells that are incapable of producing 25,000 gallons per day to be exempt from spacing requirements listed in District Rule 5.2; and making changes to a request for rehearing or findings and conclusions of a Board decision.

All interested members of the public are invited to attend. Any person who wishes to present comments or other information at the hearing may do so in person, by counsel, or both. Comments may be presented verbally or in written form. Limits may be placed on the amount of time that each person is allowed to present verbal comments at the hearing. The hearing posted in this notice may be recessed from day to day or continued where appropriate. A copy of the proposed District Rules may be requested by email at [district@pcgcd.org](mailto:district@pcgcd.org), may be reviewed or copied at the District office, 419 West Sabine Street, Carthage, Texas, 75633, or are available on the District's website at [www.pcgcd.org](http://www.pcgcd.org). Written comments may be submitted to the District email address or to the District mailing address provided above.

FILED FOR RECORD  
IN MY OFFICE  
AT 5:20 O'CLOCK 5 M

NOV 02 2016

BOBBIE DAVIS  
COUNTY CLERK, PANOLA COUNTY, TEXAS  
BY J Endsley DEPUTY

# Appendix A Continued - Rule Review

## The Panola Watchman

The Panola Watchman  
109 W Panola  
Carthage, TX 75633

10/27/16

Phone: (903) 693-7888 Fax: Email: twall@panolawatchman.com

### AFFIDAVIT OF PUBLICATION

State of Texas)

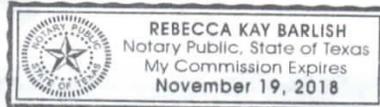
County of Panola)

This Affidavit of Publication for the Panola Watchman, a daily newspaper of general circulation, printed and published at Carthage, hereby certifies that the attached legal notice, ad # 535791, was published in said newspaper on October 30, 2016, and that copies of each paper in which said Public Notice was published were delivered by carriers to the subscribers of said paper, according to their accustomed mode of business in this office.

Tammy Wall  
for the Panola Watchman

The above Affidavit and Certificate of Publication was subscribed and sworn to before me by the above-named Tammy Wall, who is personally known to me to be the identical person in the above certificate on this 31<sup>st</sup> day of Oct, 16.

Rebecca Kay Barlish  
Notary Public in and for  
State of Texas)  
County of Panola)



My commission expires

### PANOLA COUNTY GROUND-WATER CONSERVATION DISTRICT NOTICE OF PUBLIC HEARING ON DISTRICT RULE AMENDMENTS

Notice is hereby given that the Board of Directors of the Panola County Groundwater Conservation District ("District") will hold a public hearing on Tuesday, November 22, 2016 at 5:30 PM in the District office located at 419 West Sabine Street, Carthage, Texas, 75633, to discuss, consider, receive public comment, and potentially act on the adoption of proposed amendments to the District Rules.

The proposed amendments to the District Rules include changes that address the permitting of water wells involved in oil and gas production activities, including, requiring water wells which are not being used solely for rig supply to be permitted with an operating permit; not requiring water wells used for hydrologic fracturing drilled prior to August 30, 2016 to provide a hydrogeological report as required in District Rule 3.17, but requiring water wells drilled after August 30, 2016 to provide a hydrogeological report; allowing all domestic water wells that are incapable of producing 25,000 gallons per minute to be exempt from spacing requirements listed in District Rule 5.2; and making changes to a request for rehearing or findings and conclusions of a Board decision.

All interested members of the public are invited to attend. Any person who wishes to present comments or other information at the hearing may do so in person, by counsel, or both. Comments may be presented verbally or in written form. Limits may be placed on the amount of time that each person is allowed to present verbal comments at the hearing. The hearing posted in this notice may be recessed from day to day or continued where appropriate. A copy of the proposed District Rules may be requested by email at district@pcgcd.org, may be reviewed or copied at the District office, 419 West Sabine Street, Carthage, Texas, 75633, or are available on the District's website at www.pcgcd.org. Written comments may be submitted to the District email address or to the District mailing address provided above.

ad id: 535791

# Appendix A Continued - Rule Review

## Minutes of Public Hearings on Rule Changes Panola County Groundwater Conservation District November 22, 2016

A public hearing was held by the Panola County Groundwater Conservation District Board of Directors at 5:35 p.m. in the District Conference Room on Tuesday, November 22, 2016, on Rule Changes. The following were in attendance:

Board Members Present:

Precinct #1: Mike Pennington  
Danny Reed  
Precinct #2: James Browning  
Larry Dorman  
Precinct #3: Al Clay  
Jim Payne  
Precinct #4: Larry McMillan  
Ray Davis  
At large: Bobby Langford

District Staff: Leah Adams, General Manager; Teresa Griffin, Office Manager; and Jess Landreneau, Field Technician

Others Present: Ronny McMillan, Roxana Herrera, Andrea Whiteside, Mike O'Quinn, Walter Tehan, Tyler Yarnell and Scott Yarnell.

Absent: None

1. The public hearing was called to order by Larry Dorman, Board President, at 5:35 p.m. on Tuesday, November 22, 2016.
2. Public Hearing for District Rule Amendments:
  - a. Mr. Dorman asked General Manager, Leah Adams, to give an overview of Rule Change. After giving an overview, the General Manager then stated PCGCD had received comments from several oil companies and had met with Chevron who requested the changes be tabled in an effort to allow for time to collaborate with PCGCD on Rule Changes. At 5:41 p.m., Mr. Dorman opened the floor for public comments. Roxana Herra with BP America, was in attendance, and indicated they feel the Rule Changes are in contradiction with state water code. Andrea Whiteside, with XTO, then stated XTO had the same concerns as BP and felt they needed more time to discuss, indicating they are willing to work with PCGCD to provide input for Rule Changes as well. Walter Tehan, with R. Lacy, was present at the meeting and stated they feel there needs to be more discussion between the oil companies and PCGCD concerning rule changes. Leah Adams then made the recommendation to the board, to table the changes in effort to provide more time for collaboration with the oil companies.

# Appendix A Continued - Rule Review

- b. This item was discussed in conjunction with item (a) above and concerned not requiring water wells used for hydrologic fracturing drilled prior to August 30, 2016 to provide a hydrogeological report as required in District Rule 3.17, but requiring water wells drilled after August 30, 2016 to provide a hydrogeological report

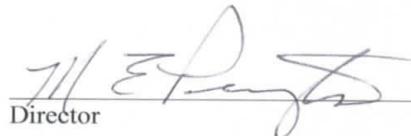
Danny Reed made a motion to table the Rule Changes concerning items (a) and (b), Mike Pennington seconded the motion and the motion carried unanimously.

- c. Change allowing all domestic water wells that are incapable of producing 25,000 gallons per day to be exempt from spacing requirements listed in District Rule 5.2. was discussed next. Dany Reed made a motion to approve the Rule Change, Larry McMillan seconded, and the motion carried unanimously.
- d. Changes to a request for rehearing or findings and conclusions of a Board decision was the next Rule Change discussed. James Browning made a motion to approve the Rule Change, Larry McMillan seconded the motion and the motion carried unanimously.

- 3. With no further business, President Larry Dorman thanked everyone for attending the meeting and the meeting was adjourned at 6:20 p.m.

Approved this 20th day of December, 2016.

  
Director

  
Director

# Appendix B - Region I Meeting Minutes 2016

209.

Region I May 18, 2016

MINUTES OF THE REGULAR MEETING  
of the  
REGIONAL WATER PLANNING GROUP "I"  
**Wednesday May 18, 2016 – 10:00 a.m.**  
Nacogdoches Recreation Center  
1112 North Street, Nacogdoches, Texas

1. Call to Order – Kelley Holcomb, Chair, called the meeting to order at 10:14 a.m.
2. Invocation & Pledge of Allegiance – Kelley Holcomb.
3. Roll Call and Determination of Quorum –The roll was called by Stacy Corley and a quorum was determined as follows:

**Voting Members Present (12 of 21)**

Kelley Holcomb  
David Alders  
David Brock  
Josh David  
Mark Dunn  
Scott Hall arrived 10:35a.m.  
Mike Harbordt  
William Heugel  
Gregory Morgan  
Monty Shank  
Worth Whitehead  
Dale Peddy

**Voting Members Absent (8)**

Jeff Branick  
Chris Davis  
Leah Adams  
John Martin  
Bill Kimbrough  
David Montagne  
J. Leon Young  
Darla Smith

**Proxies: (1)**

Joseph Holcomb to Kelley Holcomb

**Voting Member Category Vacancies: (1) Water Utilities**

**Non -Voting Members Present:**

Ben Stephenson, Dallas Water Utilities

**Governmental Reporting Agencies Present:**

Kathleen Jackson, Director Texas Water Development Board  
Kevin Kluge and Scott Galaway, Texas Water Development Board  
Terry Stelly, Texas Parks and Wildlife  
Manuel Martinez, Texas Dept. of Agriculture

# Appendix B Continued- Region I Meeting Minutes 2016

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Region I May 18, 2016

## **Other Guests Present:**

Stacy Corley, City of Nacogdoches  
Rex Hunt, Alan Plummer Associates, Inc.  
Spandana Tummuri, Freese & Nichols, Inc.  
Bill Hutchison, GMA 11 Consultant  
Mary Brown, Texas Impact  
Jerri Jones, State Rep Clardy's Office  
John Langston, RCGCD  
Canyon Hamilton, NTVGCD  
Louise Stoehr  
William L Shecks  
Sam Brannon, Texas Impact  
Jess Landreneau, Panola County GCD  
Kevin Ward, Lufkin SSLC  
Dennis Gregg, Lufkin SSLC  
Maggie Forbes  
Anne Tindell  
Marilyn Eaves  
Marilyn Richardson, ReNac  
Amy Goodwin, ReNac  
Kerry Lemon, AHBC Earth Care, ReNac  
Judy McDonald, AHBC  
Matt Moore, ReNac  
Cat Albers, ReNac  
Denise McDonald, AHBC Earth Care Ministry  
Marlene Jowell, Cherokee County  
Steve Bartlett, City of Nacogdoches Engineer

## **4. Open/Receive Public Comments relating to Round 5 Regional Water Planning**

Chairman Holcomb opened the floor to **Public Comments relating to Round 5 of the Regional Water Planning Cycle**. No one present desired to comment on Round 5 of the Regional Water Planning Cycle, Chairman Holcomb closed the floor to comments.

## **5. Consideration and approval of the minutes of the November 5, 2015 meeting.**

Mark Dunn moved to approve the minutes as presented. Motion seconded by Monty Shank and unanimously passed.

## **6. Report from City of Nacogdoches – Stacy Corley.**

Mrs. Corley reported Cycle 4 has almost closed out and noted Cycle 5 had received \$23,578.20 to begin the new cycle.

## **7. Reports of adjoining regions activity (only as needed)**

- a. Region C – Mike Harbordt/Connie Standridge – no report.
- b. Region D – Worth Whitehead/Vacant – no report.
- c. Region H – David Alders/Steve Tyler – David Alders stated he did not attend the meeting but the agenda addressed the new cycle and educational presentations as is Region I.

# Appendix B Continued - Region I Meeting Minutes

## 2016

Region I May 18, 2016

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### 8. Reports from Standing Committees (only as needed)

- a. Executive Committee – Kelley Holcomb – no report
- Finance Committee – Darla Smith – Mrs. Corley gave clarification on outstanding membership dues. The following Counties have outstanding membership dues: Angelina \$10,110; Orange \$1,994; Shelby \$629; and Trinity \$154 equaling \$12,887.
- b. Bylaws Committee – David Alders – no report
- c. Technical Committee – Mike Harbordt – reported quiet the last few months, thanked APAI for their hard work and the other members of the Technical Committee.
- d. Nominations Committee – Monty Shank – deferred to New Business item 14.

### 9. Reports from other state agencies:

Chairman Holcomb introduced Kathleen Jackson, Director of TWDB

Mrs. Jackson stated she was appointed to the TWDB by Governor Rick Perry March 18, 2014 and reappointed by Governor Greg Abbot December 15, 2015. She comes from a diverse background representing agricultural, environmental, industrial, and wholesales – supply interests, which includes developing and implementing water management strategies for Southeast Texas.

Mrs. Jackson received a bachelor's degree in chemical engineering from North Carolina State University. She has three children, sixth-generation Texans, who all reside and work in Texas.

Mrs. Jackson stated the number one question she answers as she traveled to the other Regions was, "Will Texas run out of water?" She stated "No, Texas will not run out of water because Regional Planning is the key to that." Regional Planning is a bottom up process and utilizes almost 450 volunteers in the sixteen regional water planning groups. These groups look at what is needed today and for the future – the outcome is the State Water Plan every five years. TWDB believes that local communities must be engaged because they know best the needs for their individual planning regions. Texas Water Development Board is a data repository for Texas; a bank for lending money for local improvements and a technical resource for Texas communities to help develop the most cost effective, efficient project scope of work prior to financing the project too. Mrs. Jackson also discussed the SWIFT Water Projects in consideration for award in the near future.

#### a. Texas Water Development Board staff – Lann Bookout

Kevin Kluge with TWDB gave report in Lann Bookout's absence.

Mr. Kluge updated the members regarding the RWPG Technical Meeting held May 2, 2016 in Austin. The meeting addressed the five (5) year plan process consisting of: population & water demand projections, water availability modeling, potential guidance for quantifying strategy impacts on environmental factors and agriculture, incorporating TCEQ environmental flow standards into water management strategy evaluations, run-of-the river availability evaluations for existing supply, guidance for estimating water management

# Appendix B Continued - Region I Meeting Minutes 2016

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Region I May 18, 2016

strategy water losses, brackish groundwater availability, methods and tools used to conduct surveys and collect various WUG information, potential uniform costing tool updates or revisions and socio-economic impact analysis feedback. Mr. Kluge mentioned Chapter 357 and 358 revisions to be taken to the TWDB this summer. He further stated the SWIFT Funding received 19 applications and will make awards in the fall.

b. **Texas Department of Parks & Wildlife – Terry Stelly**

Mr. Stelly advised the rains had caused too much fresh water in the gulf.

c. **Texas Department of Agriculture – Manual Martinez**

Mr. Martinez discussed the Municipal Blue Legacy Award program through Save Texas Water. The program promotes best practices in water stewardship by offering public green space grants that utilize low water landscaping. Mr. Martinez stated the City of Nacogdoches was the pilot city for this award. Information regarding the grant opportunity may be found at <http://www.savetexaswater.org/awards/municipal>

**10. Report from consultant team – Round 5 Planning Cycle**

Rex Hunt advised he was looking forward to the 5<sup>th</sup> Regional Water Planning Cycle. He feels that Region I Planning Group is of the upmost importance to the state because of its unique water resources; and stressed how valuable it is to have involved board members concerned with gathering more specific information from each county. He remarked Sabine County received SWIFT funding to improve their data base.

**11. Educational Presentation:**

a. **Kevin Kluge, TWBD Manager of Water Use – Population and Water Demand Projections Allocations**

Mr. Kluge discussed 2021 Regional Water Plans Population and Water Demand Projections.

Projections Development:

- Irrigation
- Livestock
- Manufacturing
- Mining
- Steam-Electric Power
- Population
- Municipal...*Problem: Utility services areas don't follow city boundaries!!*
- Solution: Utility Water Planning – Population – permanent resident population served within utility service area – Water Demand – volume to serve utility's retail customers (minus large industrial) Adjustments to some will be minimal and some more substantial.

# Appendix B Continued- Region I Meeting Minutes 2016

2:13

Region I May 18, 2016

## Tentative Projections Timeline:

- **July 2016** – List of new Municipal WUGs
- **Oct-Dec 2016** – Draft Pop, Municipal, Livestock & Mining Demand Projections
- **June 2017** – Draft IRR, Mfg & Power Demand Projections (subject to peer-review results)
- **July 2017** – Post historical GPCD
- **January 2018** – Deadline for adjustment requests. – Review by Coordination Agencies (TCEQ, TDA, TPWD and TWDB)
- **March 2018** – Projections to Board
- **March 2020** – Draft plans due

## b. **Bill Hutchinson** – GMA 11 Groundwater Availability Model Update

Mr. Hutchinson stated currently there are four Groundwater Conservation Districts:

- Neches & Trinity Valley GCD
- Panola County GCD
- Pineywoods GCD
- Rusk County GCD

### Unconfirmed GCD:

- Deep East Texas GCD

Districts within a GMA must adopt desired future conditions for relevant aquifers every five (5) years. GMA 11 has four (4) confirmed districts.

Desired Future Condition (DFC):

- Quantified conditions of groundwater
- Specified time or times in the future
- Broad Policy Goal
  - Drawdown
  - Spring flow
  - Storage volumes
- Updated at least every five years

Modeled Available Groundwater (MAG)

- The amount of pumping necessary to achieve the desired future condition
- TWDB calculated based on
  - Model simulations
  - Water budget calculations
  - District provided data and information
- Included in GCD Management Plans
- “Groundwater Availability” in Regional Water Plans
- One factor in permitting decisions

**Groundwater Availability = DFC + MAG**

# Appendix B Continued - Region I Meeting Minutes 2016

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Region I May 18, 2016

**12. Public Comments (limited to 3 minutes)**

No comments.

**13. Unfinished Business: None**

**14. New Business:**

- a. Consideration and Approval of the 2016 Executive Committee Appointments – **Monty Shank**

Nomination Committee Chair Monty Shank voiced the committee's recommendation for the 2016 Executive Committee appointments as follows:

Chair – Kelley Holcomb  
1<sup>st</sup> Vice Chair – David Brock  
2<sup>nd</sup> Vice Chair – Dr. Michael Harbordt  
Secretary – John Martin  
Assistant Secretary – David Montagne  
At-Large – Dr. Leon Young  
At-Large – David Alders

Monty Shank made the recommendations in form of a motion. Motion seconded by Mark Dunn and unanimously passed.

- b. Committee Appointments for Nominations, By-Laws, Technical and Finance Committees

Chair Kelley Holcomb appointed the Chairs for the following committees:

Nominations Committee – Chair Monty Shank  
By-Laws Committee – David Alders  
Finance Committee – Darla Smith  
Technical Committee – Scott Hall

**15. General Discussion**

Committee discussed nomination for the Water Conservation Advisory Council as C. E. Williams did not accept re-appointment. Kelley Holcomb stated he was interested in serving if fellow members agreed, everyone agreed for him to submit his letter of interest.

**16. Next Meeting Date**

Possibly meet in August to adopt FY 2017 Budget.

**17. Adjourn**

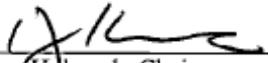
Adjourned meeting at 12:23 P.M.

# Appendix B Continued - Region I Meeting Minutes 2016

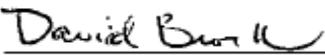
Region I May 18, 2016

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APPROVED THIS 9<sup>th</sup> day of November 2016.

  
\_\_\_\_\_  
Kelley Holcomb, Chair  
ETRWPG – Region I

ATTEST:

  
\_\_\_\_\_  
David Brock, Secretary

# Appendix B Continued - Region I Meeting Minutes 2016

Region I November 9, 2016

MINUTES OF THE REGULAR MEETING  
of the  
REGIONAL WATER PLANNING GROUP "I"  
Wednesday November 9, 2016 – 10:00 a.m.  
Nacogdoches Recreation Center  
1112 North Street, Nacogdoches, Texas

1. Call to Order – Kelley Holcomb, Chair, called the meeting to order at 10:07 a.m.
2. Invocation & Pledge of Allegiance – David Alders
3. Roll Call and Determination of Quorum –The roll was called by Stacy Corley and a quorum was determined as follows:

**Voting Members Present (13 of 21)**

Kelley Holcomb  
David Alders  
David Brock  
Josh David  
Chris Davis  
Mark Dunn  
Scott Hall  
Mike Harbordt  
John Martin  
Dale Peddy  
Monty Shank  
Darla Smith  
Worth Whitehead

**Voting Members Absent (8)**

Leah Adams  
Jeff Branick  
William Heugel  
Joseph Holcomb  
Bill Kimbrough  
David Montagne  
Gregory Morgan  
J. Leon Young

**Proxies: (2)**

William Heugel to Darla Smith  
J. Leon Young to David Alders

**Voting Member Category Vacancies: (1) Water Utilities**

# Appendix B Continued - Region I Meeting Minutes

## 2016

Region I November 9, 2016

### **Non -Voting Members Present:**

#### **Governmental Reporting Agencies Present:**

Lann Bookout, Texas Water Development Board  
Scott Galaway, Texas Water Development Board  
Terry Stelly, Texas Parks and Wildlife

#### **Other Guests Present:**

Stacy Corley, City of Nacogdoches  
Rex Hunt, Alan Plummer Associates, Inc.  
Spandana Tummuri, Freese & Nichols, Inc.  
Gary Ashmore, Lower Trinity GCD  
William L. Sheehan, Rusk County GCD  
Jess Landreneau, Panola Co GCD  
Mary S. Vann, Sabine River Authority  
Stephen Cortes, Averitt & Associates  
Canyon Hamilton  
Steve Bartlett, City of Nacogdoches Engineer

#### **4. Consideration and approval of the minutes of the May 18, 2016 meeting.**

David Alders moved to approve the minutes as presented. The motion was seconded by Mark Dunn and unanimously passed.

#### **5. Report from City of Nacogdoches – Stacy Corley**

Mrs. Corley report Cycle 4 has closed out and Cycle 5 is underway. Region I received Advance #1 (\$23,578.20) and APAI has been paid for two invoices.

- 6. Reports of adjoining regions activity (only as needed)**
  - a. Region C – Mike Harbordt/Connie Standridge - None
  - b. Region D – Worth Whitehead/Vacant - None
  - c. Region H – David Alders/Steve Tyler

David Alders advised Region H met on November 2<sup>nd</sup> in Conroe. Group discussed Harris County Flood District's Future Water Demands – next meeting March 1, 2017.

- 7. Reports from Standing Committees (only as needed)**
  - a. Executive Committee – Kelley Holcomb - None
  - b. Finance Committee – Darla Smith – Met today, will have item later in agenda.
  - c. Bylaws Committee – David Alders - None
  - d. Technical Committee – Scott Hall - None
  - e. Nominations Committee – Monty Shank – Met today, no action on carry over Water and Public vacancies.
- 8. Reports from other state agencies:**
  - a. Texas Water Development Board staff – Lann Bookout

# Appendix B Continued - Region I Meeting Minutes

## 2016

Region I November 9, 2016

Lann Bookout advised the Board scheduled financial workshops coming up in early 2017 – schedule may be found on TWDB Website. These workshops will touch on the SWIFT Water and Revolving Loan Fund opportunities. Scott Galaway noted on November 17<sup>th</sup> the Board should adopt the amended Rules. Also, in the afternoon session the Board will ask for comments from the region chairs regarding by-laws, how planning groups grow their membership, representation of interest groups and decision making among other topics. Lann stated the Board is preparing an RFA for 5<sup>th</sup> Cycle Amendment for additional funding for Tasks that the legislature could not fully fund during session. He advised public notice of intent to apply for funding is required in February 2017 as well as the application. Regarding the letter sent by Kevin Kluge – TWDB, comments on the draft demand projection methodologies should be submitted to Mr. Kluge by December 2016. Chairman Holcomb discussed with Scott Hall and Rex Hunt the need for the Technical Committee to hold conference call to discuss changes in determination of populations as in the boundary based method.

### b. Texas Department of Parks & Wildlife – Terry Stelly

Terry Stelly gave update on fishing stating that after nine weeks, with one week remaining for fall gill netting, spotted sea trout catch rates remain low, half the 30-year average. Salinities remain relatively high (10-15 ppt) which should have enhanced trout numbers. With a number of weak cold fronts, flounder seem to be moving from the marsh to the ship channel for their fall Gulf migration.

### c. Texas Department of Agriculture – Manual Martinez – Absent.

## 9. Report from consultant team – Update on the Round 5 Planning Cycle.

Rex Hunt, planning consultant updated the group on the project schedule, changes to water user groups, interbasin transfer permits and proposed methodology for projections. He highlighted the 2017 schedule including the RFA for 5<sup>th</sup> Cycle Amendments. Entities losing designation as Water User Groups because they were absorbed into another WUG or 2010 population was less than 500 or projected to provide less than 100 AFY of municipal supply. Entities with new names were another topic, for example, Southern Utilities Company became Southern Utilities or Crystal Systems Inc became Crystal Systems Texas. New municipal water user groups: in August 2016 TWDB released a list of potential WUGs which would provide over 100 AFY of municipal supply but are not owned by a political subdivision; and in September 2016, RWPG Chair submitted a letter to TWDB requesting the TWDB develop projections for potential WUGs. New municipal water user groups established: Federal & State Facilities: TDCJ Coffield Michael, TDCJ Beto, Gurney & Powledge Units and TDCJ Eastham Unit. Private Utilities: Algonquin Water Resources of Texas and Wildwood POA. Interbasin transfer (IBT) Permits – TWDB made requests to consultant teams for identification of 2016

# Appendix B Continued - Region I Meeting Minutes

## 2016

Region I November 9, 2016

WMSs that will require IBT permits, 17 strategies on the list for review and determination whether they are likely to need an IBT. Proposed methodology for developing draft irrigation, manufacturing, and steam-electric water demand projections: November 4, 2016 TWDB released methodology for: Irrigation: most recent 5-year use estimated held constant over the planning period; Manufacturing: 10-year employment growth projections through 2030 used as proxy for demand projections; Steam-electric: based on ERCOT capacity, demand, and reserves report. *December 16, 2016 is the deadline for questions and comments.*

### 10. Educational Presentation:

a. Stephen Cortes – Introduction of the Goldwater Project, the Texas Water Foundation’s proposed project goal is to:

- quantify the amount of water saved as a result of water conservation strategies with quantifiable information and data to allow water planners to more accurately predict future water needs;
- proof that conservation is a source of water that can replace expensive infrastructure projects; reliable and assessable results of conservation efforts for water authorities in the Region; and
- necessary data for an effective and accurate cost-benefit analysis when considering various conservation-oriented policies.

As the project proceeds to measure conservation efforts, many more benefits will be derived. The Texas Water Foundation wants to make conservation a tangible source of water, rather than a vague concept that does not help us plan for future water needs.

The current Regional Water Plan calls for the development of 1.5 million acre-feet of new water at a cost of \$12 billion. Some of the planned projects have an uncertain future as environmental, regulatory, and economic hurdles arise. If all of these projects are not put online in a timely manner, where will we turn for water? The most logical solution is to enhance conservation efforts. As the Project shows the economic viability of water conservation, water conservation will be seen as a *reliable* means to reduce water demand; make conservation a *tangible source* of water that can be planned for and counted on; and *reduce the cost* of new water.

**Break for lunch about 11:30 AM**

**Back in session 12:00 PM**

11. Public Comments (limited to 3 minutes) None

12. Unfinished Business:

# Appendix B Continued - Region I Meeting Minutes

## 2016

Region I November 9, 2016

- a. Discussion and Possible action regarding public comments received for Round 5 Water Planning activities – Rex Hunt

Rex Hunt advised the public comment submitted for the 5<sup>th</sup> Cycle Water Planning activities was from John A. McCall, Sr., OD stating: *“As a long time East Texas land owner, I am strongly opposed to politician’s control of my use of water on my land. I am especially opposed to any meters on my water wells. Most politicians are mainly interested in getting more tax money.”* The comment has been noted and requires no action.

### 13. New Business:

- a. Consideration and Approval of potential new municipal Water User Groups.

Mark Dunn made a motion to approve the potential new municipal Water User Groups. The motion was seconded by Chris Davis and unanimously passed.

- b. Consideration and Approval authorizing the City of Nacogdoches to provide public notice and submit a grant application to the TWDB for funding to complete Round 5 Planning activities; and to amend the current TWDB Contract for Round 5 Planning activities.

David Alders made a motion to approve authorizing the City of Nacogdoches to provide public notice and submit a grant application to the TWDB for funding to complete Round 5 Planning activities; and to amend the current TWDB contract for Round 5 Planning activities. The motion was seconded by Monty Shank and unanimously passed.

- c. Consideration and Approval of the FY 2017 Administrative Budget – Darla Smith

Darla Smith, Finance Committee Chair proposed a new funding option whereby the four River Authorities in Region I would provide funding for the 2017 Administration Budget by prorating usage per acre foot: ANRA – 3.6%; LNVA – 50.5%; SRA – 36%; and UNRA – 10%. Darla Smith asked for approval of the FY 2017 Administration Budget of \$15,900; and requested \$8,000 (One half of Budget) from River Authorities for the FY 2017 Administration Budget.

Monty Shank had questions about the four river authorities in Region I supplying funding for the Region I 2017 Administration Budget.

After further discussion, Monty Shank made a motion to approve the FY 2017 Budget of \$15,900; and Table the funding request of \$8,000 from the four river authorities until the next regular meeting. The motion was seconded by Michael Harbordt and unanimously passed.

### 14. General Discussion – None

# Appendix B Continued - Region I Meeting Minutes 2016

Region I November 9, 2016

**15. Next Meeting Date - February 8, 2017**

**16. Adjourn - 12:12 PM. Mark Dunn made a motion to adjourn. The motion was seconded by Monty Shank and unanimously passed.**

APPROVED THIS \_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_.

Kelley Holcomb, Chair  
ETRWPG – Region I

ATTEST:

\_\_\_\_\_  
David Brock, Secretary

DRAFT

# Appendix C - Region D Meeting Minutes 2016

**Minutes of the North East Texas Regional Water Planning Group  
March 16, 2016 – 1:00 P.M.  
Mount Pleasant Civic Center  
1800 N. Jefferson, Mount Pleasant, Texas**

The North East Texas Regional Water Planning Group (NETRWPG) – Region D met in an open meeting on Wednesday, March 16, 2016, at 1:00 P.M. The meeting was held at the Mount Pleasant Civic Center, 1800 N. Jefferson, in Mount Pleasant, Texas. Notice of the meeting was legally posted.

Chair Linda Price called the meeting to order at 1:00 and welcomed everyone. David Nabors gave the invocation. Introductions were made and a quorum was present. Twenty members of the planning group were present in person or represented by a designated alternate.

The following voting members were present:

David Nabors	Bill Kirby
Linda Price	Cheri Stuart
Robert Holt	Dennis Hilliard
Mike McCoy	Jerry Gaskill
Michael Brown	Danny Evans
George Frost	Larry Calvin
Darrell Grubbs	Mark Williams
Bob Staton	Johnny Bradley
Greg Carter	Jo Ann Duman

The following alternates were present:

Richard LeTourneau for Robert Speight  
Rick Ivey for Kevin Spence

The following non-voting members were present:

Ron Ellis, representing TWDB  
Sandy Cash, representing UTRWD  
Troy Sellers, representing Luminant

The following non-voting members were absent:

Curtis Campbell	Worth Whitehead
Marcia Hackett	David Montagne
Mike Rickman	Larry LeBeau
Darrell Dean	

The following voting members were absent:

Brice Glidewell	Doug Conner
Kevin Spence	Robert Speight
Jeremy Dumond	

# Appendix C Continued - Region D Meeting Minutes 2016

## NETRWPG Minutes for March 16, 2016

### Page Two

The Public Hearing was opened for comments. Verbal comments were received from:

David Simpson  
Lou Ann Everett  
Mike Buttram

Jay Misenheimer  
Ann Rushing  
Jimmy Hair

The Public Hearing was adjourned by consensus.

David Nabors made a motion to approve the minutes from the January 20, 2016 meeting. Dennis Hilliard seconded the motion. Motion carried, all voting aye.

Amanda Maloukis with GMA #11 stated that they had work yet to be done on the water availability model, postponing the presentation to a future meeting.

Ned Muse, the lone applicant for the voting member vacancy left by the resignation of Tim Nicholson, introduced himself. David Nabors made a motion for Mr. Muse to fill the vacancy. Mike Brown seconded the motion. Motion carried, unanimously.

Tony Smith with Carollo gave a presentation outlining the Fifth Round planning schedule as well as insight on funding and potential scope ideas for additional studies supporting the Fifth Round of regional water planning.

David Nabors mentioned that Region C will meet in April; to his knowledge no GMA #8 meeting had taken place. Mr. Nabors proposed that Mrs. Pat Wommack be seated at the planning group table since she is a liaison for SRBA. He suggested that Region D consider providing SRBA a spot on the Region D table as a non-voting member. Leah Adams with GMA #11 stated that they had met in January and are working on updating their model. Ron Ellis with TWDB informed of a new TWDB Board Member, Peter Lake. Mr. Lake has extensive financial experience and is from Tyler. Mr. Ellis also mentioned that no SWIFT applications had been received from Region D. He also informed that the State Water Plan will likely be adopted by this summer. TWDB is currently updating TAC Rules 357 & 358, as well as updating planning guidance principles. Mr. Ellis also mentioned March 2018 as a timeline for the TWDB to approve population projections, twenty-four months before the deadline of IPP.

Larry Calvin made a motion to approve the Financial Report by the Administrator, including approval for payment of the RPS/Espey Consultant invoices. Mark Williams seconded the motion. Motion carried, all voting aye.

By consensus, the next meeting of the regional water planning group was set for May 4, 2016.

The following people addressed the planning group in the public comment section:

Jim Davis

The meeting was adjourned by consensus.

# Appendix C Continued - Region D Meeting Minutes 2016

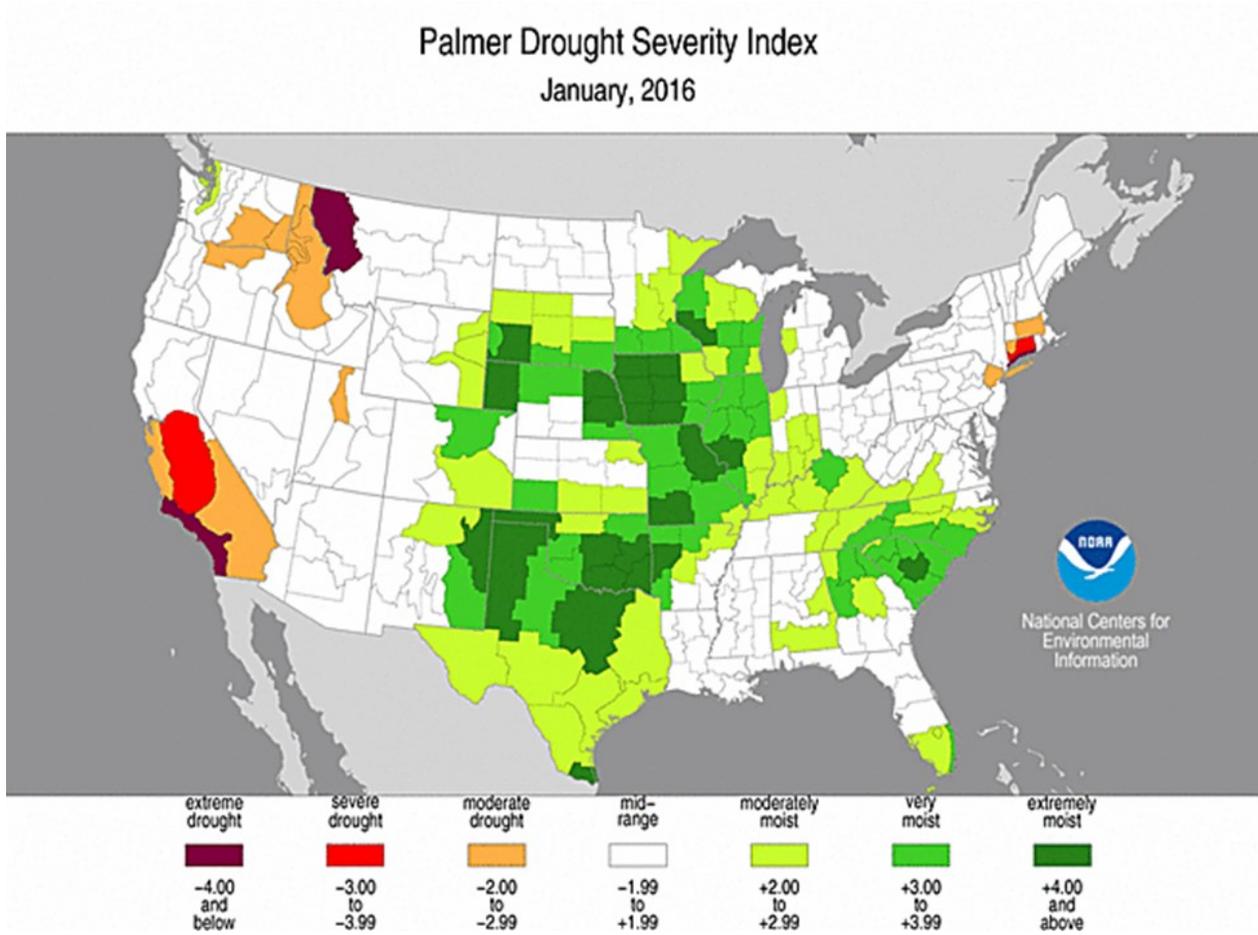
**NETRWPG Minutes for March 16, 2016**  
**Page Three**

  
Secretary

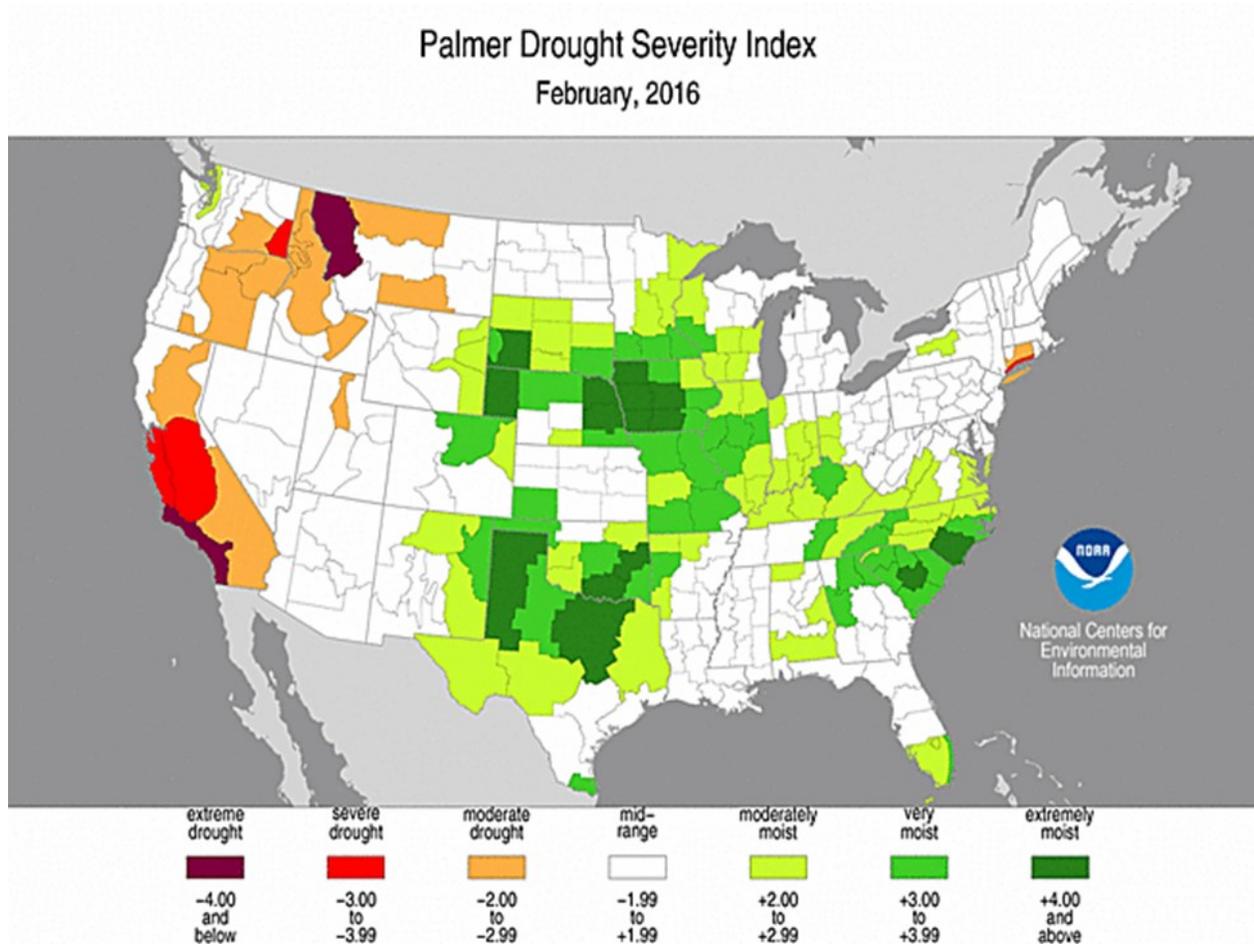
## **ADDITIONAL ATTENDEES:**

Walt Sears, Jr.	NETMWD
Osiris Brantley	NETMWD
Paul Prange	ATCOG
Ron Ellis	TWDB
R.A. Castro	TWDB
David Simpson	State Rep
Kirby Hollingsworth	SRBA
Tony Smith	Carollo Engineering
Jim Davis	Bi-County WSC
Stan Hayes	Hayes Engineering
Lou Ann Everett	Mayor of Canton
Ann Rushing	Mayor of Clarksville
James Belchen	City of Greenville
Charlene Harmon	City of Point
Amanda Maloukis	GMA #11
Leah Adams	GMA #11
Becky Bell	Texarkana Gazette
Lou Antonelli	Clarksville Times
Jay Misenheimer	
Shirley Shumake	
Mary Catherine Grant	
Sharron Nabors	
Jimmy Hair	
Robert McCarthy	
Lonny Cluck	
John Brooks	
Mike Buttram	
Bart Brock	
Barbara Calvin	
Ned Muse	

# Appendix D - Palmer Drought Severity Index

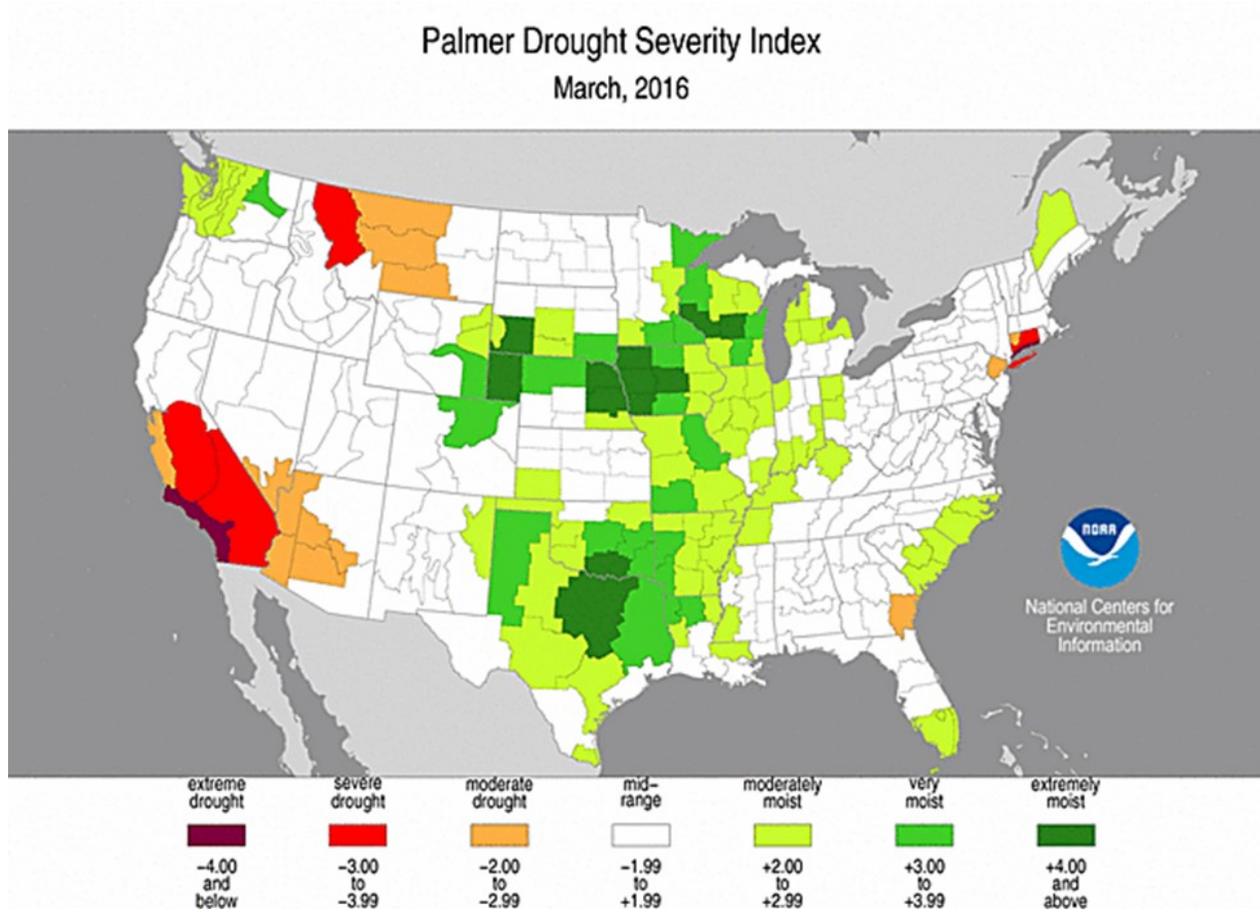


# Appendix D Continued - Palmer Drought Severity Index



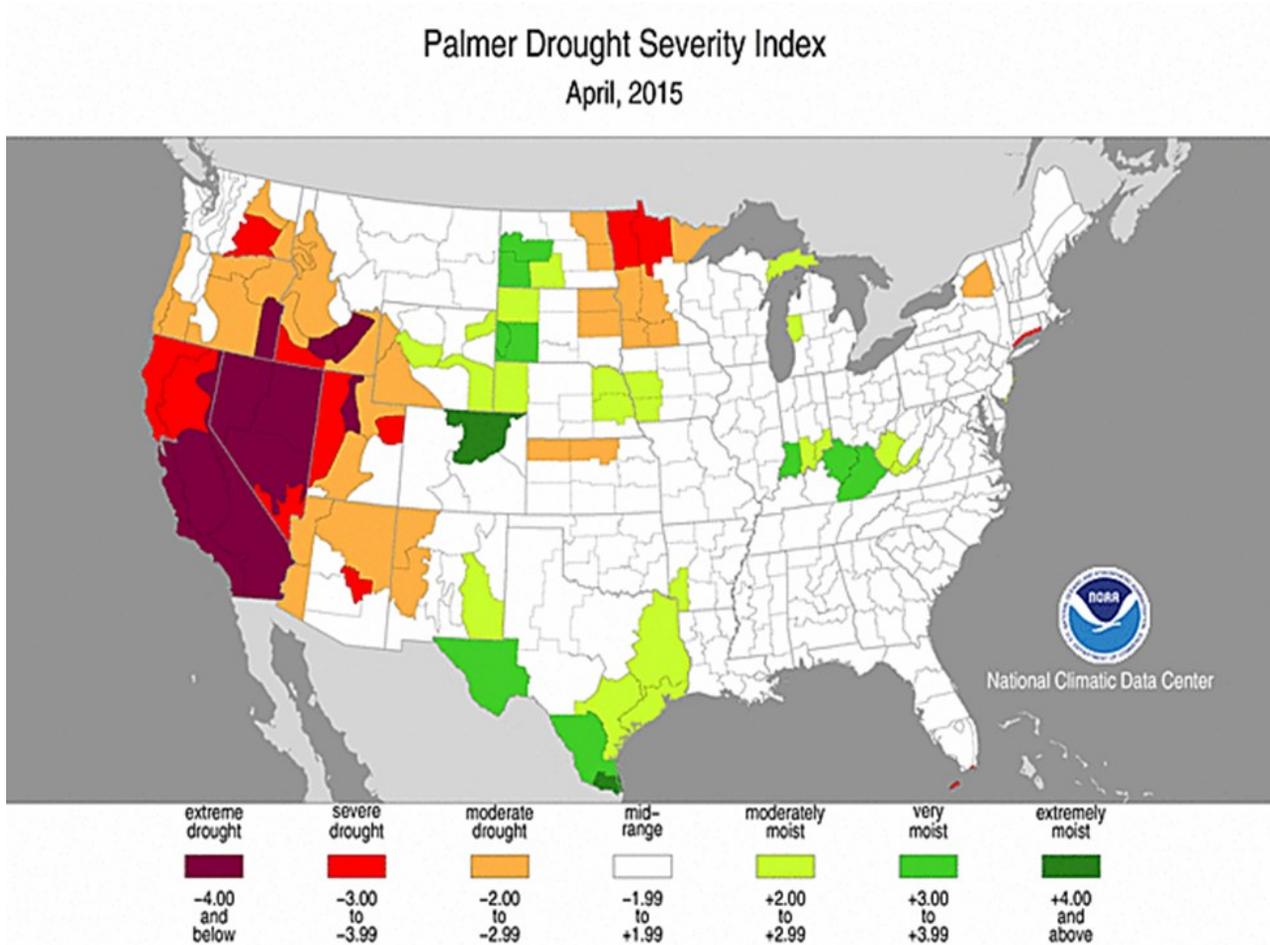
# Appendix D Continued - Palmer Drought Severity Index

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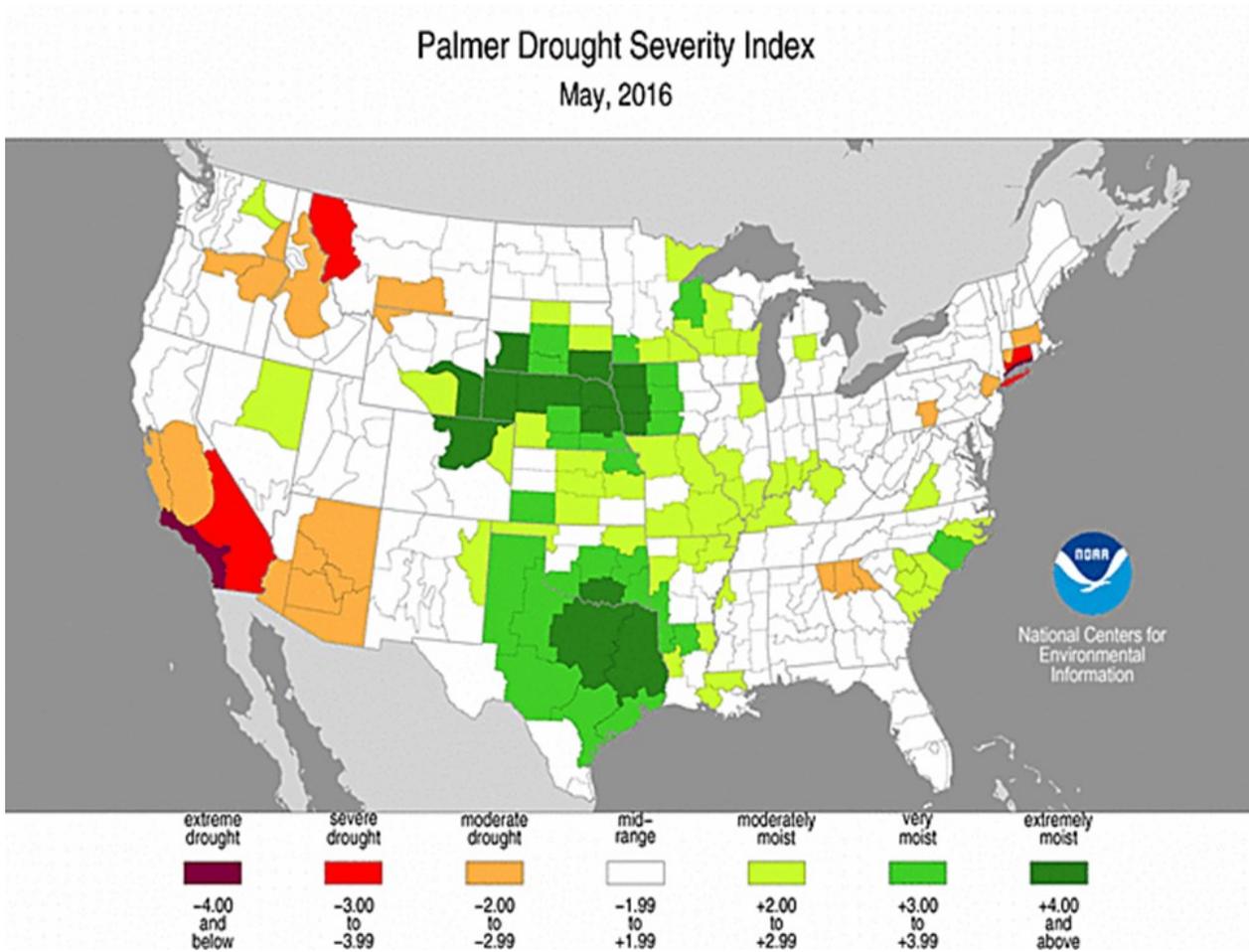


# Appendix D Continued - Palmer Drought Severity Index

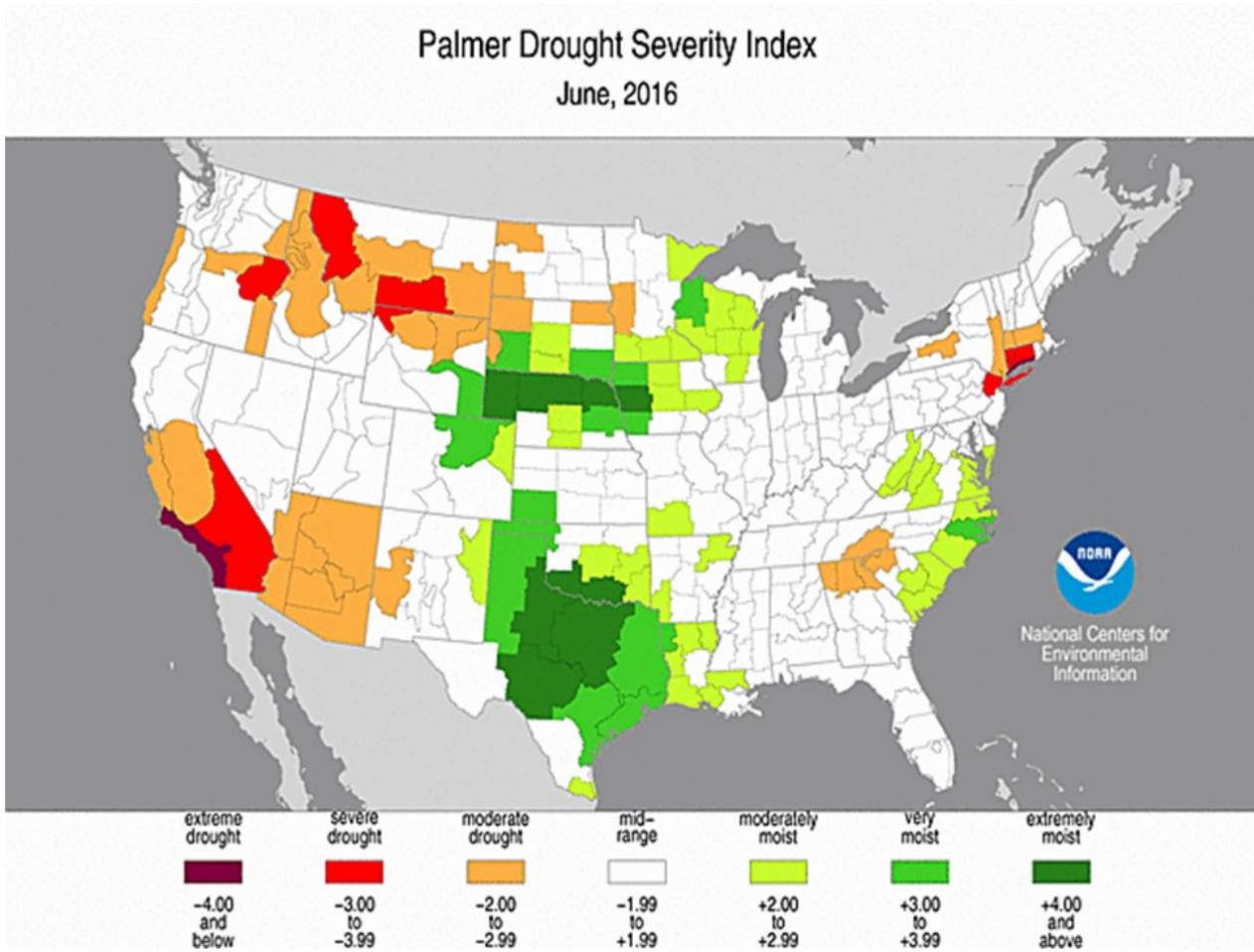
## Index



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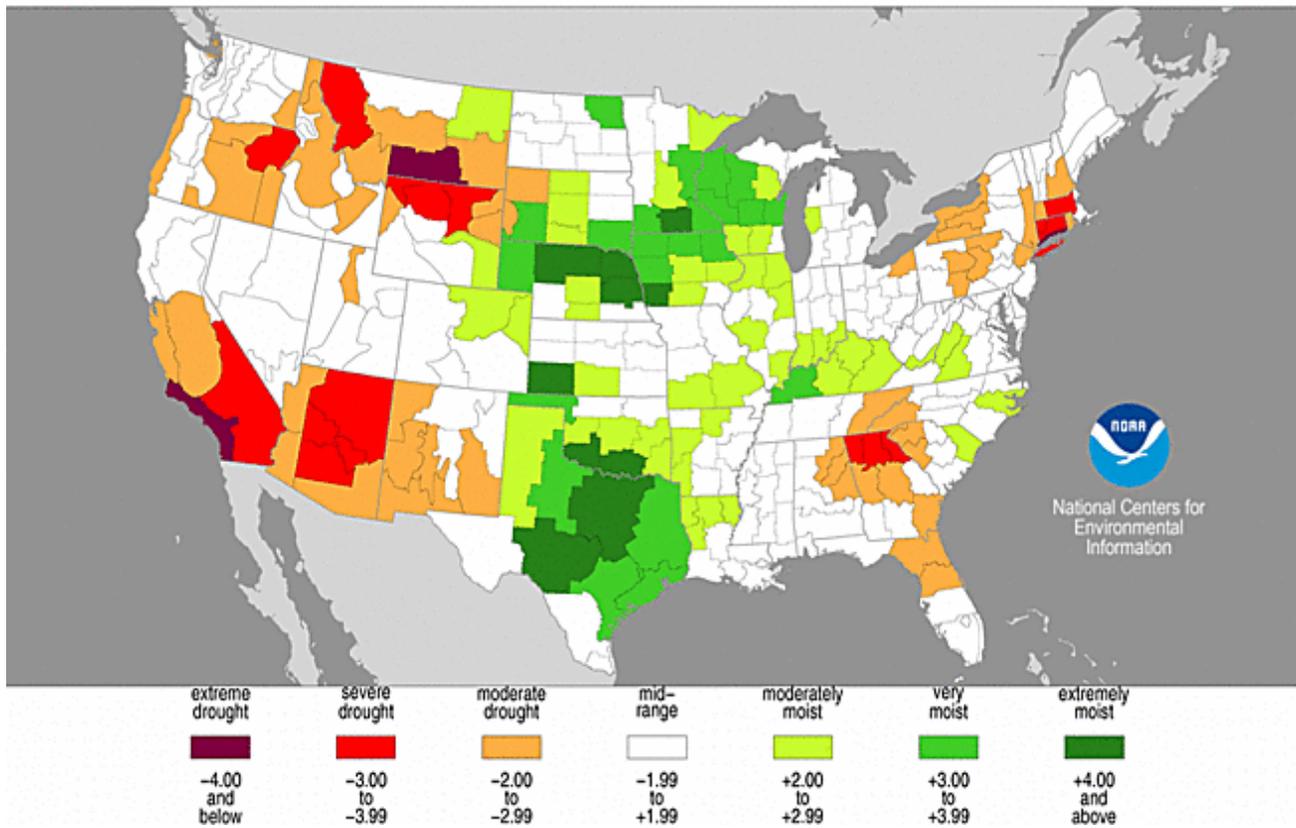


# Appendix D Continued - Palmer Drought Severity Index



# Appendix D Continued - Palmer Drought Severity Index Index

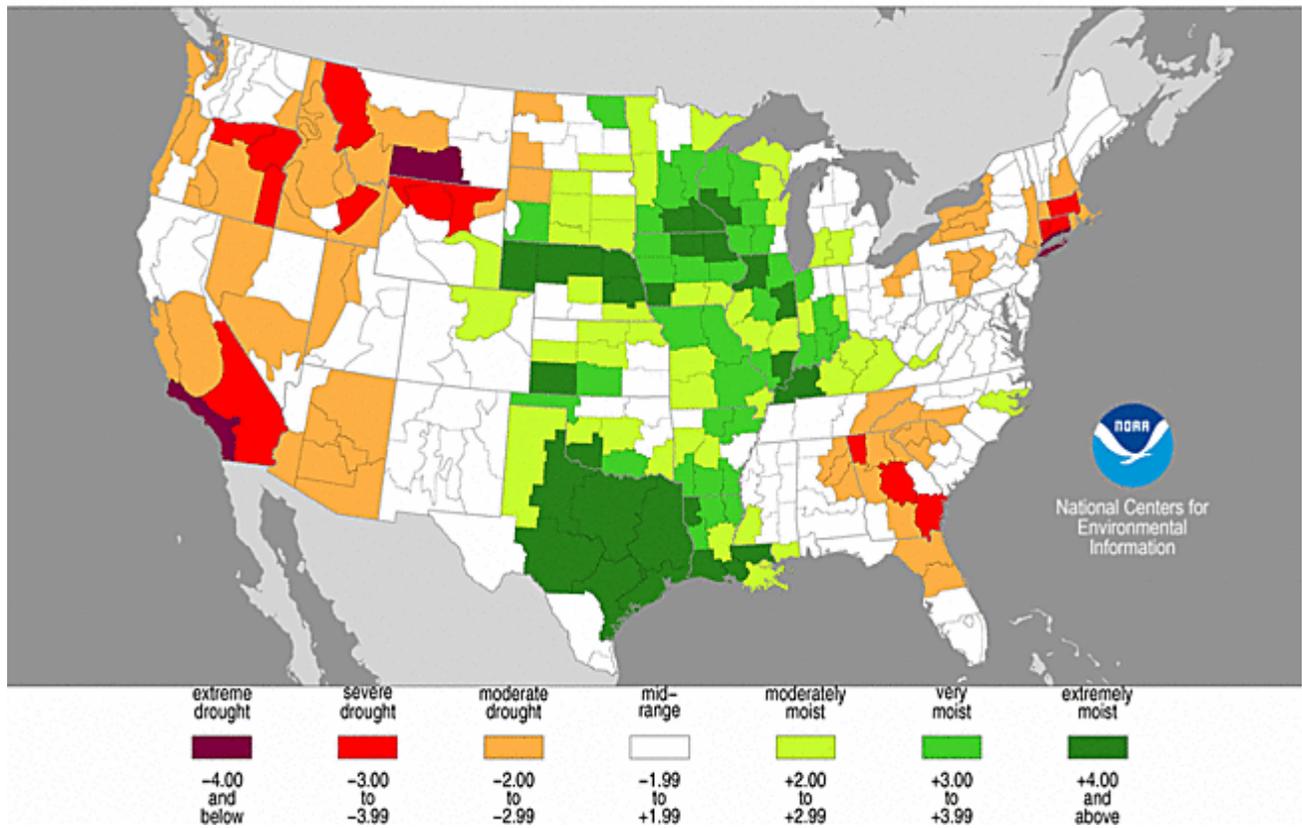
Palmer Drought Severity Index  
July, 2016



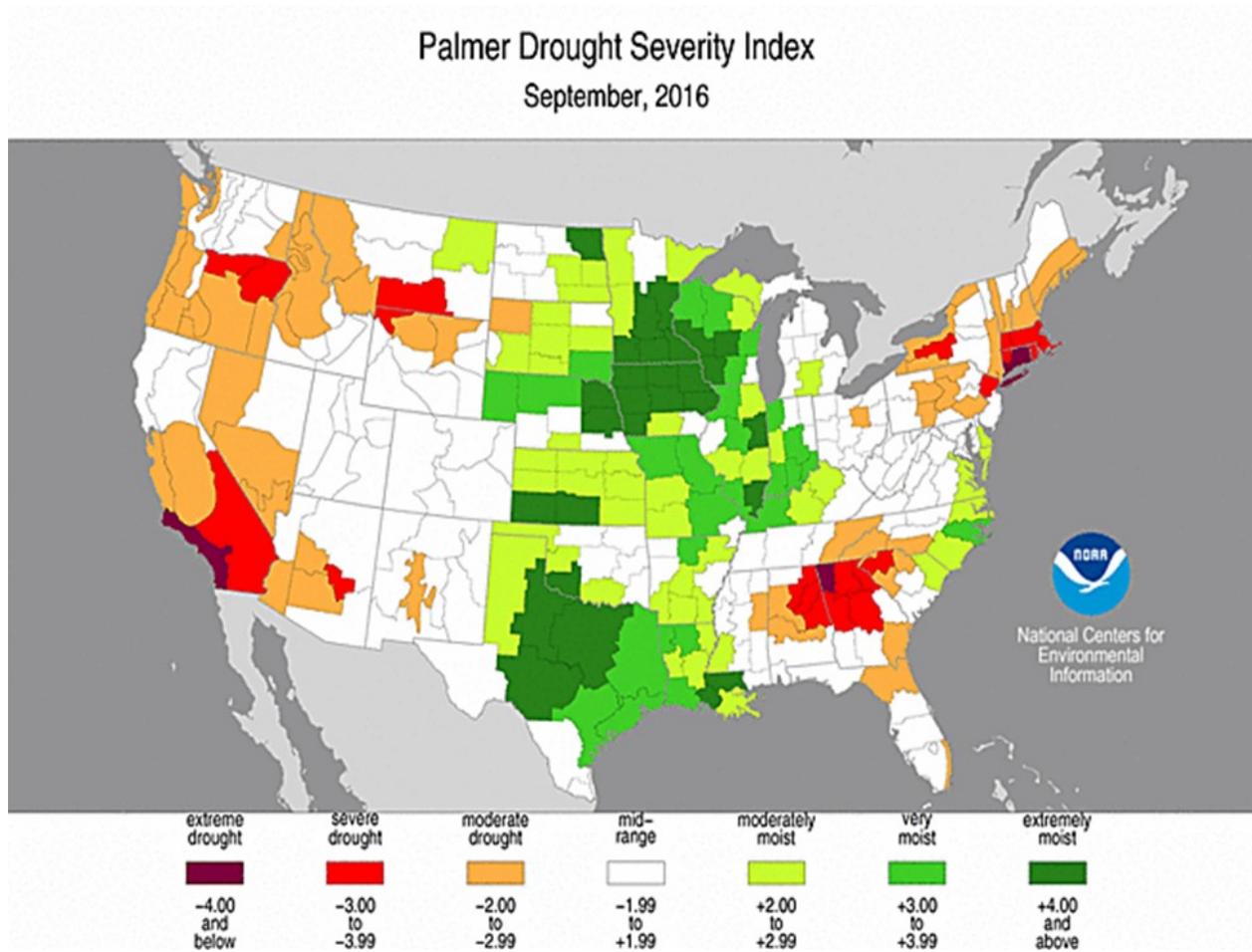
# Appendix D Continued - Palmer Drought Severity Index

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Palmer Drought Severity Index  
August, 2016



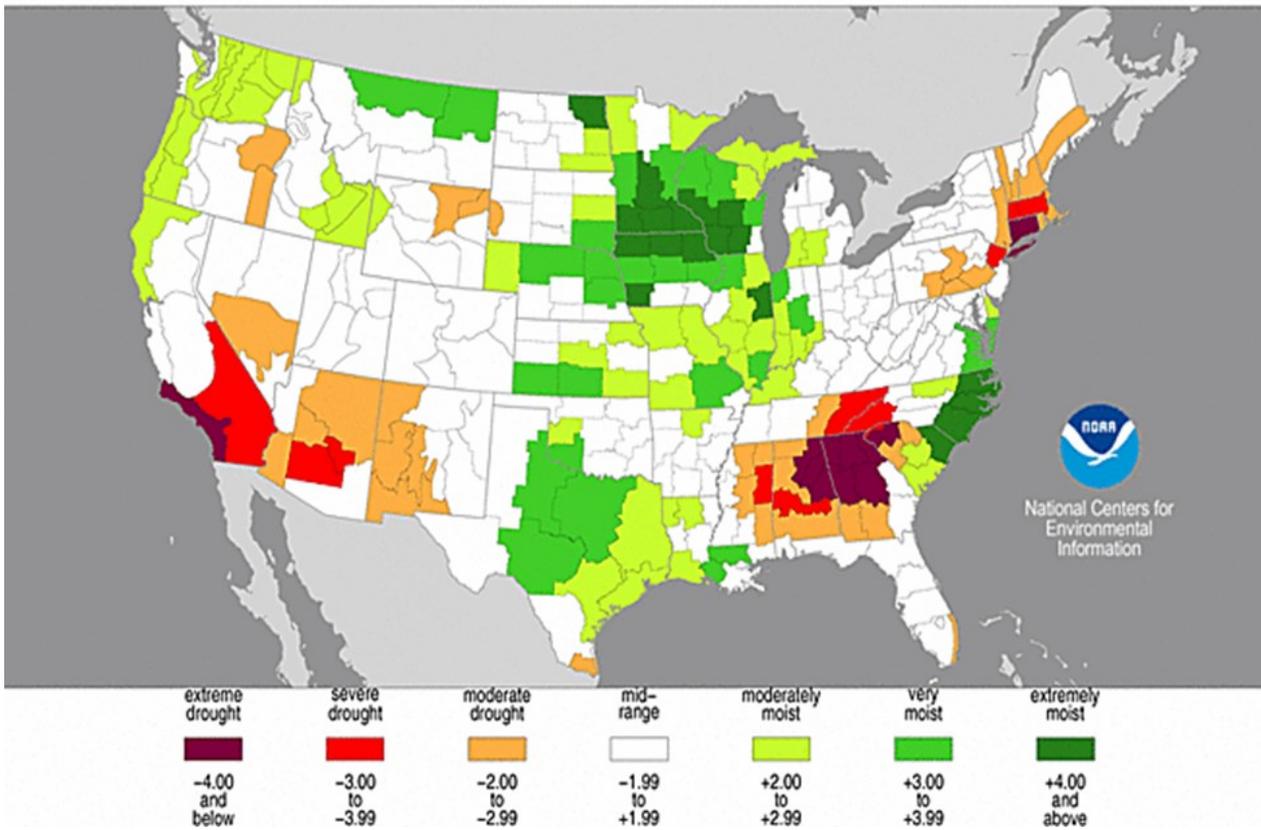
# Appendix D Continued - Palmer Drought Severity Index



# Appendix D Continued - Palmer Drought Severity Index

## Index

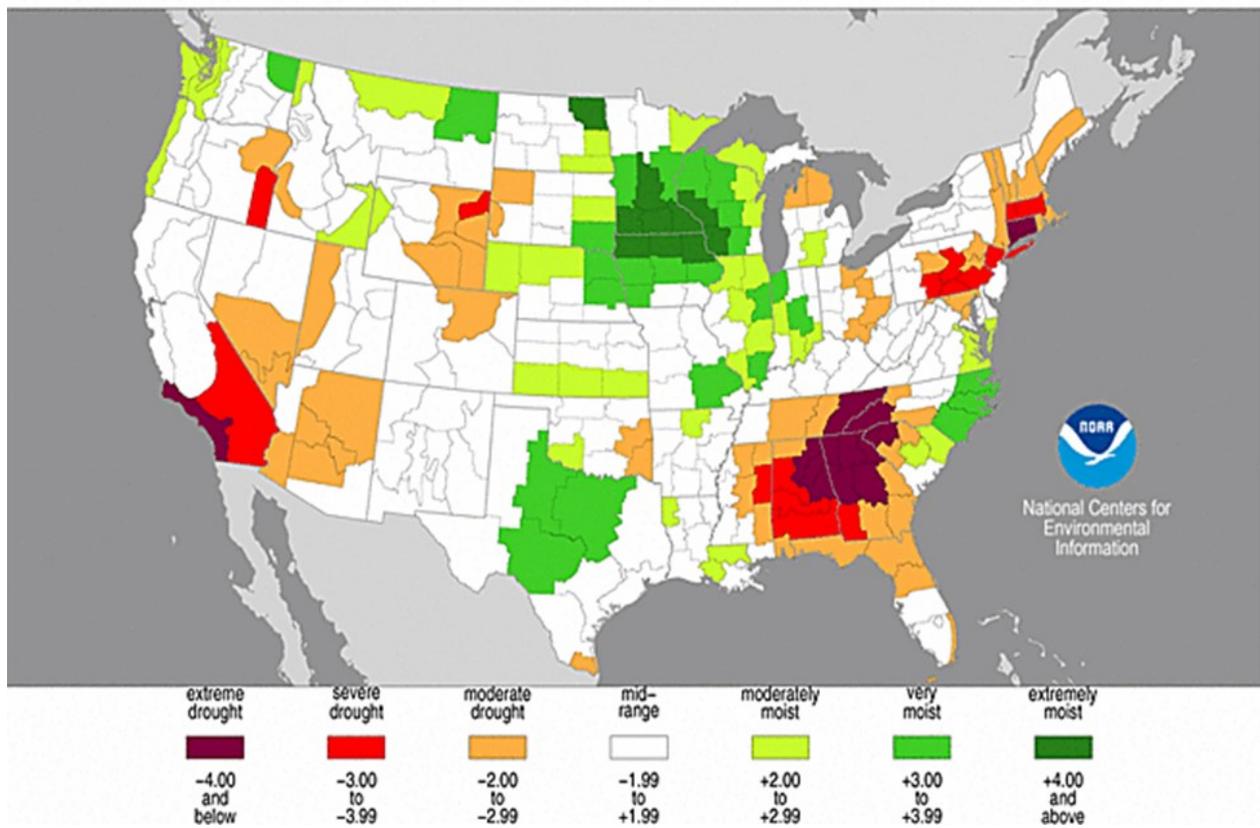
Palmer Drought Severity Index  
October, 2016



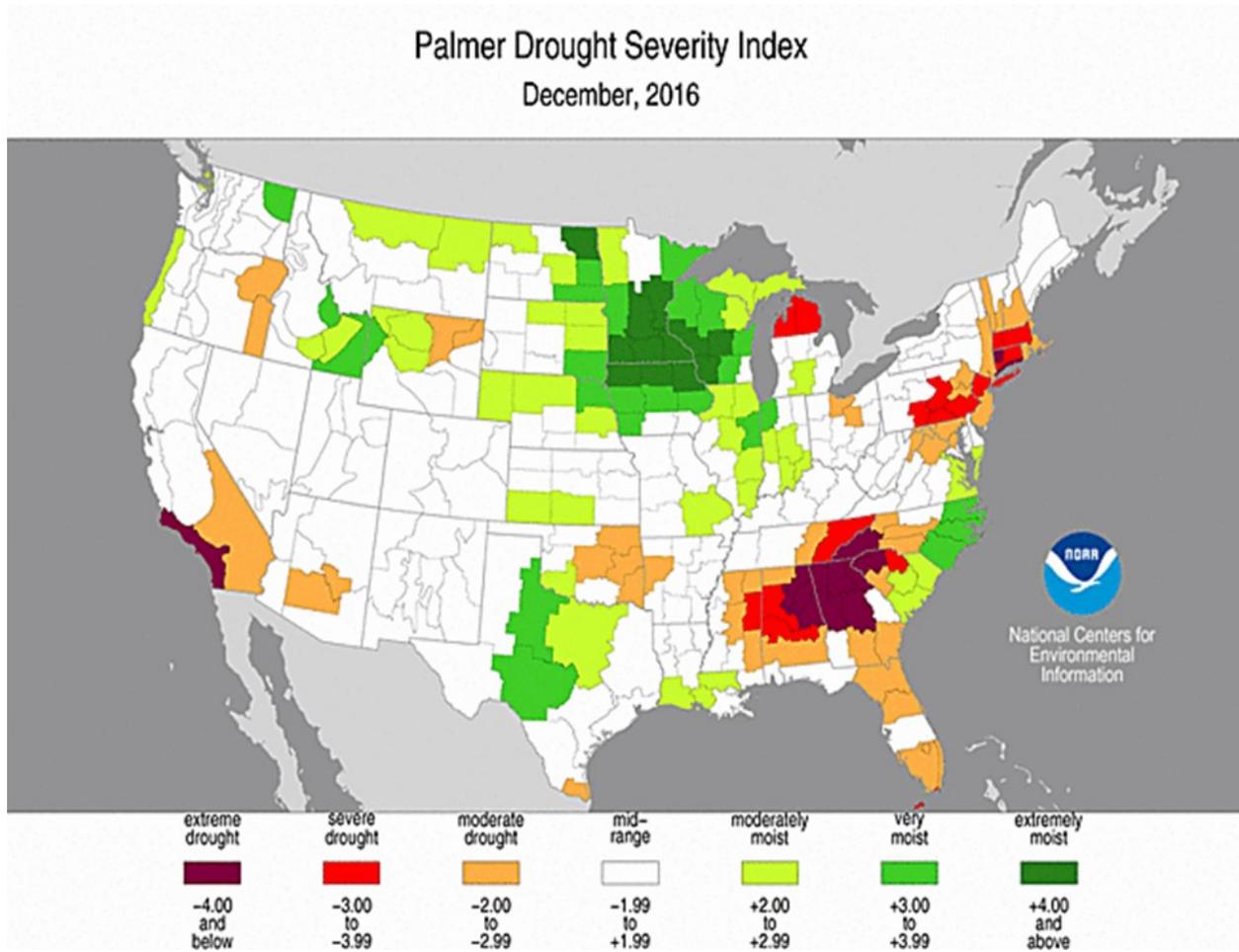
# Appendix D Continued - Palmer Drought Severity Index

## Index

Palmer Drought Severity Index  
November, 2016



# Appendix D Continued - Palmer Drought Severity Index Index



# Appendix E - Situation Reports

## “Situation Report”

The Situation Reports for 2016 were not available on the Texas DPS website.

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Courtesy ~ Service ~ Protection

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### State Drought Preparedness Council

- ▶ Drought Preparedness Council Overview (PDF)
- ▶ Drought Annex (PDF)

#### Situation Reports and Supporting Documents

Month (2017)	Situation Reports and Supporting Documents	Additional Documents
January		
February		
March		
April		
May		
June		
July		

#### Situation Report Archive

2014 ▼ Go

- 2014
- 2013
- 2012
- 2011
- 2010

#### Drought Publications

- ▶ Texas AgriLife Extension Service – Drought Task Force
- ▶ When Every Drop Counts: Protecting Public Health During Drought Conditions – A Guide for Public Health Professionals
- ▶ Take the National Drought Mitigation Center (NDMC) Survey (PDF)

#### Drought Summary Information & Indices

- ▶ Keetch-Byram Drought Index – Interactive Texas Map

# Appendix F - Drought Contingency Plan

## Panola County Groundwater Conservation District

### Drought Contingency Plan

Adopted May 24th, 2016

#### **I. Purpose and Policy of the Drought Contingency Plan**

The Panola County Groundwater Conservation District (“District”) adopts this Drought Contingency Plan (“Plan”) to further its efforts of drought monitoring and public advisement, as well as, conserving, preserving, and managing the groundwater resources within the District’s boundaries. The purpose of this Plan is to minimize the effects of groundwater depletion in the District during times of drought, and in extended and/or extreme drought conditions, to cause a reduction in water use in order to preserve water availability. The District believes that the voluntary reductions in usage that are associated with each drought stage in this Plan can be achieved, and will minimize the effects of drought and over-pumping on the District’s groundwater resources. This Plan has been prepared in advance, with consideration given to the conditions that will initiate and terminate each drought stage as described herein. Recommended water conservation strategies that are listed in this Plan are considered to be necessary in order to avoid damage to the aquifer. Any water uses that deviate from the recommended strategies will be considered non-essential, and continuation of such water uses during times of drought will be deemed a waste of water which will adversely affect public health, welfare, and safety for the residents of Panola County. Nothing in this Plan prevents the District from exercising its authority under Chapter 36 of the Texas Water Code, the District’s enabling legislation, the District’s Management Plan, or the District’s Rules.

#### **II. Designation of Drought Stages**

The District Board of Directors (“Board”) or the District General Manager shall determine when conditions warrant initiation or termination of each drought stage in this Plan, and shall take appropriate action to declare the appropriate stage. In the event the General Manager declares a drought stage in accordance with this Plan, the Board shall be informed of the action taken to declare a drought stage at the next District Board meeting. The Board may confirm or revise the action taken to declare a drought stage if considered to be necessary by the Board.

#### **III. Public Notification of Drought Stages**

Public notification of the initiation or termination of declared drought stages may be accomplished by using any one or more of the following methods:

- a. Notification on the District’s internet website(s);
- b. Publication in newspaper(s) of general circulation in the District;
- c. Written notification to public water supply entities in the District;

# Appendix F Continued - Drought Contingency Plan

- d. Written bulletins issued to schools in the District;
- e. Radio announcement(s);
- f. District mailing, fax, or email to owners/operators of permitted wells; and/or
- g. Signs posted at the District office or in various locations in the District.

## IV. Criteria for Initiation and Termination of Drought Stages

Initiation of a Drought Stage: The United States Drought Monitor for Texas (“USDMD”) shall be monitored and presented to the District Board at each monthly Board meeting. The USDMD is listed in the drought stages in this Plan as a verbal drought intensity rating (example: D2, Severe Drought). Drought stages shall be triggered when the USDMD drought intensity rating in the majority of the District is raised to “D0, Abnormally Dry”, and also at each level beyond “D0, Abnormally Dry”. The USDMD for Texas can be viewed at the following website:

<http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?TX>

Drought stages in the District will also be determined in part by local precipitation deficits as shown by the District rain gauge data, as compared to historical precipitation data for the District territory. Precipitation deficits of ten inches or more (below the historical average) will be considered to indicate at least moderate drought. Also to be considered in drought stage declarations are water level changes in the District monthly monitor wells. Average water level decline of more than six inches in any one month will indicate new or worse drought conditions. Any three or more consecutive months of average water level decline will also indicate new or worse drought conditions.

Termination of a Drought Stage: The drought stage in effect shall be reduced or terminated when the USDMD drought intensity rating in the majority of the District is lowered to a lesser drought level. Precipitation deficits of ten inches or less (below the historical average) will be considered as a factor in reducing the declared District drought stage. Also, the monthly monitor well water level changes will be considered in reducing the District drought stage. Any three or more consecutive months of average water level ascent, or any one month of average water level ascent exceeding six inches will indicate waning drought conditions.

## V. Public Water Suppliers

The District recognizes that public water suppliers within the District have Drought Contingency Plans that provide drought stages and drought stage reduction measures that are intended to apply within their service areas. All public water suppliers within the District that have Drought Contingency Plans have the discretion as to how the desired usage reduction will be accomplished within their service areas, unless the water supply is not acquired through the supplier.

## VI. Drought Stage Conservation Measures

# Appendix F Continued - Drought Contingency Plan

The goals and usage reduction measures assigned to each drought stage below are voluntary and are recommended for the purpose of reducing the impact of drought conditions on the groundwater resources within the District's boundaries.

## **Stage 1 – Drought Advisory Status**

**Drought Stage Trigger:** *USDM Intensity = D0, Abnormally Dry*

### **District Action:**

- Notify the public of developing drought conditions and encourage continued conservation.
- Continue to monitor local drought and groundwater conditions.

**Goal:** 10% reduction in water use

### **Recommended Actions to Reduce Water Usage:**

- a. Check for and repair all water leaks.
- b. Install aerators on faucets.
- c. While waiting for hot water to reach faucet, catch cold water in a container to be reused.
- d. Limit landscape irrigation to no more than two days per week. Agriculture and horticulture operations are exempted from this measure but are encouraged to reduce tree, plant, and crop watering by 10%.
- e. Do not leave faucets running when not in use.
- f. Turn off master water shutoff when out of town or on vacation.
- g. Check automatic sprinkler heads regularly to prevent clogging and adjust to eliminate overspray
- h. Avoid watering on windy days.
- i. Use mulch to conserve soil moisture.
- j. Limit vehicle washing except when conducted with a bucket or hand-held hose with an automatic shutoff device during and, if possible, use a commercial car wash that recycles water.
- k. Limit swimming pool filter backwashing to only when necessary.
- l. Utilize water reuse or recirculation where possible.
- m. Limit landscape irrigation to occur only between the hours of 9:00 p.m. and 6:00 a.m.

# Appendix F Continued - Drought Contingency Plan

## **Stage 2 – Drought Watch Status**

**Drought Stage Trigger:** *USDM Intensity = D1, Moderate Drought; also to be considered: precipitation deficit of 10 inches or more, monthly average water level decline of 6 inches or more, or at least 3 consecutive months of average water level decline*

### **District Action:**

- Continue to notify the public of developing drought conditions, using multiple avenues of communication.
- Encourage continued conservation.
- Continue to monitor local drought and groundwater conditions.

**Goal:** 20% reduction in water use

### **Recommended Actions to Reduce Water Usage:**

- a. Follow all actions under Stage 1 – Drought Advisory Status.
- b. Use water to wash down buildings or other structures only for the fire protection purposes or for public health and safety purposes.
- c. Limit landscape irrigation to no more than one day per week. Agriculture and horticulture operations are exempted from this measure but are urged to reduce tree, plant, and crop watering by 20%.
- d. Keep swimming pools, landscape or decorative ponds, and fountains covered where possible, re-circulate water, and refill only once per week.
- e. Water livestock in leak-proof troughs as much as practical.
- f. Limit the use of ornamental fountains or ponds for aesthetic or scenery purposes to only where absolutely necessary to support aquatic life or where equipped with a recirculating system.
- g. Use soaker hoses for foundation protection only on designated watering days.
- h. Water for dust control only where required by law.
- i. Wash down sidewalks, walkways, driveways, parking lots, tennis courts or other hard-surfaced areas only for public health and safety purposes.

## **Stage 3 – Drought Warning Status**

**Drought Stage Trigger:** *USDM Intensity = D2, Severe Drought; also to be considered: precipitation deficit of 10 inches or more, monthly average water level decline of 6 inches or more, or at least 3 consecutive months of average water level decline*

### **District Action:**

- Continue to notify the public of developing drought conditions, using multiple avenues of communication.
- Encourage continued conservation.

# Appendix F Continued - Drought Contingency Plan

- Coordinate with local officials and water suppliers to offer assistance, where feasible.
- Encourage new groundwater use applicants to minimize their proposed withdrawals until the drought abates.
- Consider reducing permitted volumes on any new or renewing operating permits.
- Continue to monitor local drought and groundwater conditions.

**Goal:** 30% reduction in water use

## **Recommended Actions to Reduce Water Usage:**

- a. Follow all actions under Stage 1 – Drought Advisory Status and Stage 2 – Drought Watch Status
- b. Limit all outdoor watering to the use of a hand-held hose with an automatic shutoff device or faucet-filled bucket or watering can.
- c. Do not refill swimming pools, landscape or decorative ponds and fountains.
- d. Limit all washing of vehicles, boats, or trailers to commercial carwashes that recycle water.

## **Stage 4 – Emergency Drought Status**

**Drought Stage Trigger:** *USDM Intensity = D3 or D4, Extreme Drought; also to be considered: precipitation deficit of 10 inches or more, monthly average water level decline of 6 inches or more, or at least 3 consecutive months of average water level decline*

## **District Action:**

- Continue to notify the public of developing drought conditions, using multiple avenues of communication.
- Encourage continued conservation.
- Coordinate with local officials and water suppliers to offer assistance, where feasible.
- Coordinate with the TCEQ on 180-day water lists.
- Encourage new groundwater use applicants to delay or minimize their proposed withdrawals until the drought abates.
- Consider reducing permitted volumes on any new or renewing operating permits.
- Prioritize new permit applications by urgency of need and by degree of necessity.
- Postpone or limit permit approvals as is reasonable based on local drought conditions and forecasts.
- Continue to monitor local drought and groundwater conditions.
- Increase enforcement efforts on violations of the District Rules, especially those that pertain to waste of groundwater and to illegal use of groundwater. Enforcement shall be conducted according to the District Civil Penalty Schedule.

**Goal:** 40% reduction in water use

# Appendix F Continued - Drought Contingency Plan

## **Recommended Actions to Reduce Water Usage:**

- a. Follow all actions under Stage 1 – Drought Advisory Status, Stage 2 – Drought Watch Status, and Stage 3 – Drought Warning Status.
- b. Limit all outdoor use of water and nonessential uses as much as possible.
- c. No landscape irrigation or outdoor watering. Agriculture and horticulture operations are exempted from this measure but are urged to reduce tree, plant, and crop watering by 40%.
- d. No washing of vehicles, boats, or trailers.

## **Stage 5 – Disaster Drought Status**

**Drought Stage Trigger:** *USDM Intensity = D4, Exceptional Drought; also to be considered: precipitation deficit of 10 inches or more, monthly average water level decline of 6 inches or more, or at least 3 consecutive months of average water level decline, state of emergency or disaster declarations by the State*

## **District Action:**

- Continue to monitor local drought and groundwater conditions.
- Work with the public and State agencies to

**Goal:** 50% reduction in water use

## **Recommended Actions to Reduce Water Usage:**

- a. Follow all actions under Stage 1 – Drought Advisory Status, Stage 2 – Drought Watch Status, Stage 3 – Drought Warning Status, and Stage 4 – Emergency Drought Status.
- b. Limit all outdoor use of water and nonessential uses as much as possible.
- c. No landscape irrigation or outdoor watering. Agriculture and horticulture operations are exempted from this measure but are urged to reduce tree, plant, and crop watering by 50%.
- d. Limit indoor use of water and nonessential uses as much as possible.

# Appendix F Continued - Drought Contingency Plan

## **VII. Enforcement Procedures**

Violations of this Plan may be enforced under Chapter 36 of the Texas Water Code and under the District's Rules, including Section 13 of the District Rules, which may result in civil penalties and/or revocation of permits.

## **VIII. Exemptions and Waivers**

- a. The District may, in writing, grant temporary variances for existing water uses otherwise prohibited under this Plan if it is determined that failure to grant such variances would cause a hardship or an emergency condition that adversely affects the health or sanitation of the public or the person requesting the variance, and if one or more of the following conditions are met:
  1. Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other condition for which the Plan is in effect.
  2. Alternative methods can be implemented which will achieve the same level of water use reduction.
- b. Persons requesting an exemption from the provisions of this Plan shall file a petition for variance with the District within five (5) days after the Plan or particular drought response stage has been invoked or after a condition justifying the variance first occurs. All petitions for variances shall be reviewed by the District and shall include the following:
  1. Name and address of the petitioner(s).
  2. Purpose of water use.
  3. Specific provision(s) of the Plan from which the petitioner is requesting relief.
  4. Detailed statement as to how the specific provision of the Plan adversely affects the petitioner, or what damage or harm will occur to the petitioner or others if the petitioner complies with this Plan.
  5. Description of the relief requested.
  6. Period of time for which the variance is sought.
  7. Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.
  8. Other pertinent information, as requested by the District.
- c. No variance shall be retroactive or otherwise justify any violation of this Plan or the District Rules that occurred prior to the issuance of the variance.

## **IX. Severability**

If any provisions contained in this Plan are for any reason held to be invalid, illegal, or unenforceable in any respect, the invalidity, illegality, or unenforceability will not affect

# Appendix F Continued - Drought Contingency Plan

any other rules or provisions of this Plan, and this Plan must be construed as if such invalid, illegal, or unenforceable rules or provisions had never been contained in this Plan.

## **X. Implementation**

This District will review the procedures in this Plan every five (5) years, or more frequently if necessary. Modifications may be required to accommodate system growth, changes in groundwater demand, available water supplies, and/or other circumstances.

# Appendix F Continued - Drought Contingency Plan

**Table of Drought Stages in Drought Contingency Plan**

<b>DROUGHT STAGE</b>	<b>DROUGHT STAGE TRIGGER</b>	<b>PERCENT OF VOLUNTARY REDUCTION IN WATER USE</b>
<b>Stage 1 – Drought Advisory</b>	<i>USDM Intensity = D0, Abnormally Dry</i>	<b>10%</b>
<b>Stage 2 – Drought Watch</b>	<i>USDM Intensity = D1, Moderate Drought; also to be considered: precipitation deficit of 10 inches or more, monthly average water level decline of 6 inches or more, or at least 3 consecutive months of average water level decline</i>	<b>20%</b>
<b>Stage 3 – Drought Warning</b>	<i>USDM Intensity = D2, Severe Drought; also to be considered: precipitation deficit of 10 inches or more, monthly average water level decline of 6 inches or more, or at least 3 consecutive months of average water level decline</i>	<b>30%</b>
<b>Stage 4 – Emergency Drought</b>	<i>USDM Intensity = D3, Extreme Drought; also to be considered: precipitation deficit of 10 inches or more, monthly average water level decline of 6 inches or more, or at least 3 consecutive months of average water level decline</i>	<b>40%</b>
<b>Stage 5 – Disaster Drought</b>	<i>USDM Intensity = D4, Exceptional Drought; also to be considered: precipitation deficit of 10 inches or more, monthly average water level decline of 6 inches or more, or at least 3 consecutive months of average water level decline, state of emergency or disaster declarations by the State</i>	<b>50%</b>

# Appendix F Continued - Drought Contingency Plan

## Panola County Groundwater Conservation District Board of Directors Regular Meeting Minutes May 24, 2016

A regular meeting of the Panola County Groundwater Conservation District Board of Directors was held on Tuesday, May 24, 2016 at 5:39 p.m. in the District Conference Room at 419 W. Sabine Street, Carthage, Texas 75633. The following were in attendance:

Board Members:

Precinct #1: Mike Pennington  
Danny Reed  
Precinct #2: James Browning  
Larry Dorman  
Precinct #3: Al Clay  
Jim Payne  
Precinct #4: Larry McMillan  
Ray Davis  
At large:

District Staff: Leah Adams, General Manager; Teresa Griffin, Office Manager; David Waldrop, Field Technician/Inspector; and Jess Landreneau, Field Technician

Others Present: None

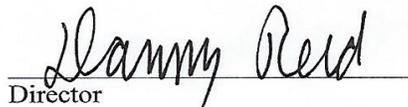
Absent: Bobby Langford, At Large

1. The regular board meeting was called to order by Larry Dorman at 5:39 p.m.
2. There were no public comments.
3. After reviewing the April 26, 2016 Regular Board Meeting minutes the approval of the minutes was tabled until the June meeting.
4. The Annual Report was presented for approval. James Browning moved and Ray Davis seconded the motion to approve the 2015 Annual Report. The motion carried unanimously of those present.
5. Resolution 2016-01 was presented and after discussion, Mike Pennington moved and Larry McMillan seconded the motion to approve Resolution 2016-01 regarding appointing the Panola County Tax Assessor and the District's General Manager to calculate and publish the District's 2016 effective and roll back tax rates. The motion carried unanimously of those present.
6. The General Manager discussed the steps in the DFC approval process, which includes a public hearing on June 28, 2016. Copies of the DFC information will be available at the Groundwater District office.

# Appendix F Continued - Drought Contingency Plan

7. The Drought Contingency Plan was reviewed and discussed. Larry McMillan moved and Mike Pennington seconded the motion to approve the Drought Contingency Plan as presented. The motion carried unanimously of those present.
8. After review of a budget amendment to fund an educational program, James Browning moved and Jim Payne seconded the motion to approve the budget amendment. The motion carried unanimously of those present.
9. District Field Technician Jess Landreneau provided updates on the regular monthly monitor wells, rain gauges, and frac pond monitoring. The monthly monitor deep well readings show a rise in water levels of approximately 0.71 feet in the last month. Compared to 2011, the deep well water levels are up 7.11 feet. The shallow monitor well water levels have risen 0.70 feet in the last month, and they are 5.67 feet higher than in 2011. The County's recorded rainfall average for April was 8.67 inches. The historical average for April is 4.39 inches, and the historical average for May is 4.67 inches. All of Panola County is currently in "no drought" conditions according to the U.S. Drought Monitor. Water levels in the Riderville and Gary frac pond areas have recovered to pre-frac pumping conditions.
10. After reviewing the District expenditures for the period of April 13, 2016 to May 17, 2016, James Browning moved and Bobby Langford seconded the motion to approve payment of expenses as presented. The motion passed unanimously of those present.
11. There was no need for Executive Session.
12. Since no Executive Session was held, no action was taken.
13. The next meeting date was set for June 28, 2016 at 5:30 p.m. at the District Office.
14. Jim Payne moved and Mike Pennington seconded the motion to adjourn at 6:40 p.m. The motion passed unanimously of those present.
15. Approved this 28<sup>th</sup> day of June, 2016.

  
Director

  
Director