

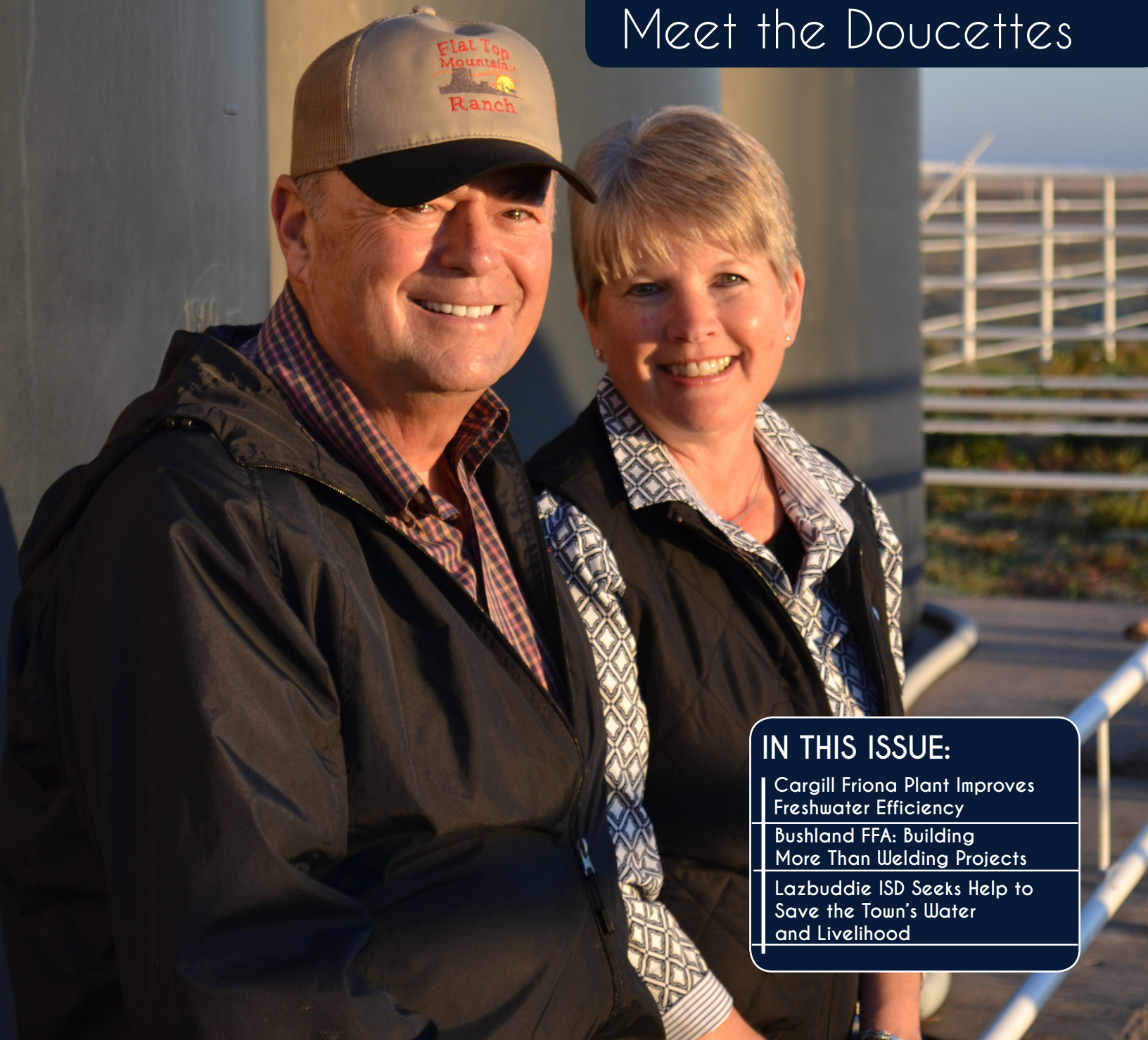
# CONSERVATION

A PUBLICATION OF THE HIGH PLAINS WATER DISTRICT  
FALL 2014 • ISSUE 1

# CONNECT



## Catching Rain Since 1998: Meet the Doucettes

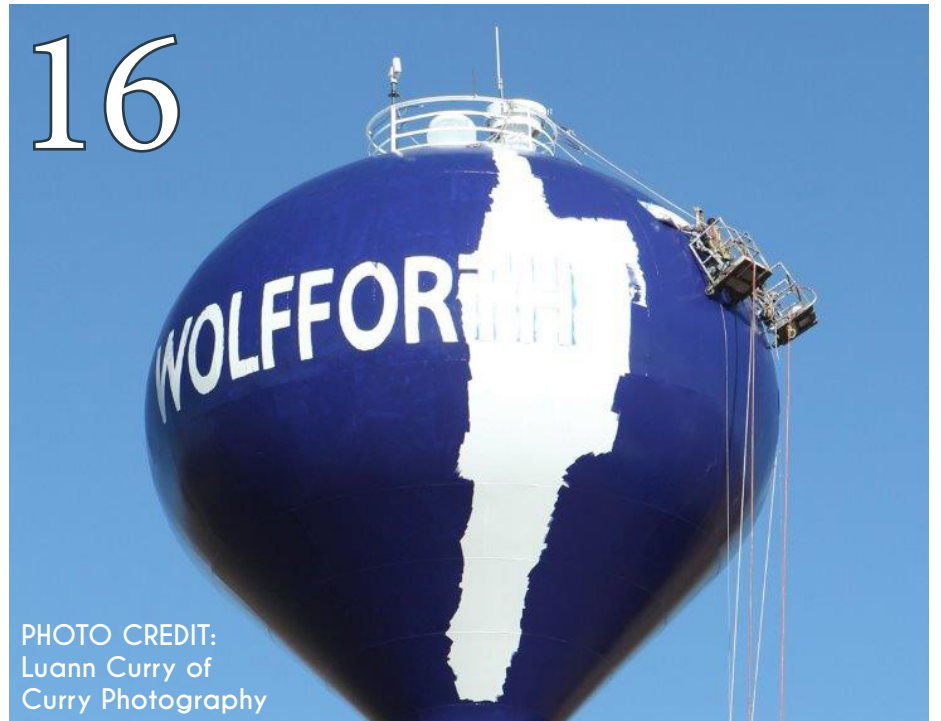


### IN THIS ISSUE:

Cargill Friona Plant Improves  
Freshwater Efficiency

Bushland FFA: Building  
More Than Welding Projects

Lazbuddie ISD Seeks Help to  
Save the Town's Water  
and Livelihood



# CONTENTS

Fall 2014 • Issue 1

4 Letter from the President

## ADVANCING

---

5 Cargill Friona Plant Improves  
Freshwater Efficiency

6 Bermuda, Buffalo or Fescue?

## RECYCLING

---

7 One City's Wastewater is Another  
Man's Irrigation Source

## INNOVATING

---

9 Sustaining with the Rain

12 Neal Hinders: Speaking the Native  
Plant Language

## CONVERGING

---

14 Bushland FFA: Building More Than  
Welding Projects

15 Muleshoe State Bank Recognized  
for Being Water Wise

16 City of Wolfforth: Streamlining Water  
Efficiency into One Proactive Pipe

19 Lazbuddie ISD Seeks Help to Save the  
Town's Water and Livelihood

## EDUCATING

---

21 TAWC Demonstrates Water-Smart  
Agriculture

22 Are you as WaterWise™ as a 5th Grader?

24 Welcome Senator Charles Perry  
Welcome Representative Dustin Burrows

25 2015 Legislative Session Preview

26 HPWD Year in Review

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## Letter from the President

As leaders in groundwater districts, it is incumbent on us to fulfill responsibilities of protecting private property rights and managing groundwater as competent professionals. Being public servants means that we must be well-versed in the laws and statutes of local governmental organizations, as well as current state laws. It also means that we, both board members and staff, should exhibit professionalism in our districts.

This year has been very busy for the board of directors and staff. We reorganized and strengthened District operations and built a balanced budget. One main focal point of this year has been revising HPWD Rule 5. During the rule revision process, county advisory committees were very engaged in discussions and decision making. The success of the rule-writing process was directly attributed to the dedicated efforts of our county advisory committees and many other community leaders. Our goal was to proactively address conflicting issues within the previous rules by hosting numerous meetings and speaking events to seek a balanced resolution. We wanted to ensure that each industry's voice was heard before passage of the rules. In August 2014, the proposed rules were adopted. Rule 5 will go into effect starting January 2015. The remaining components of the policy were effective immediately upon adoption. For a full version of the adopted rules, please refer to our website, [www.hpwd.org](http://www.hpwd.org).

West Texans have always pulled together to find solutions when issues arise. We're proud to see our cities and rural constituents all working together to make the best use of water in our aquifers. Looking ahead to the coming year, our renewed focus is on water conservation and education. The more we know about groundwater conservation, the better we will be for years to come. Please don't hesitate to contact our office at 806-762-0181 with questions or comments about the work we are doing.

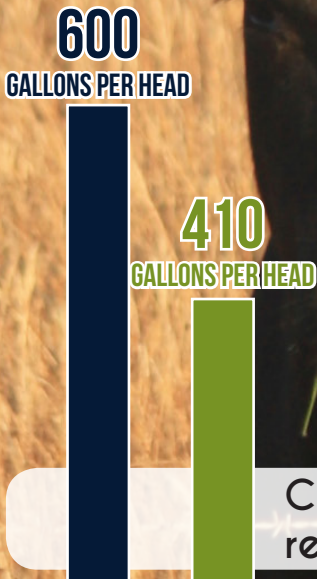
We always appreciate feedback.



Lynn Tate  
HPWD Board President



## Friona Plant Improves Freshwater Efficiency



Cargill's commitment to water conservation at Friona has reduced water consumption by 190 gallons per head.

Crops for human and animal consumption require pure water and clean soil in order to thrive. Cargill is committed to nourishing the world's growing population while protecting the planet and environment. One example is demonstrated through the multi-faceted water conservation practices at Cargill's beef processing plant in Friona, Texas.

"Our water efficiency efforts really started when we realized how valuable water is as a resource, especially in Friona," says Cargill Environmental Superintendent Nicholas McFarland. "We continue to strive to be as efficient as possible, so we can be here for many years to come."

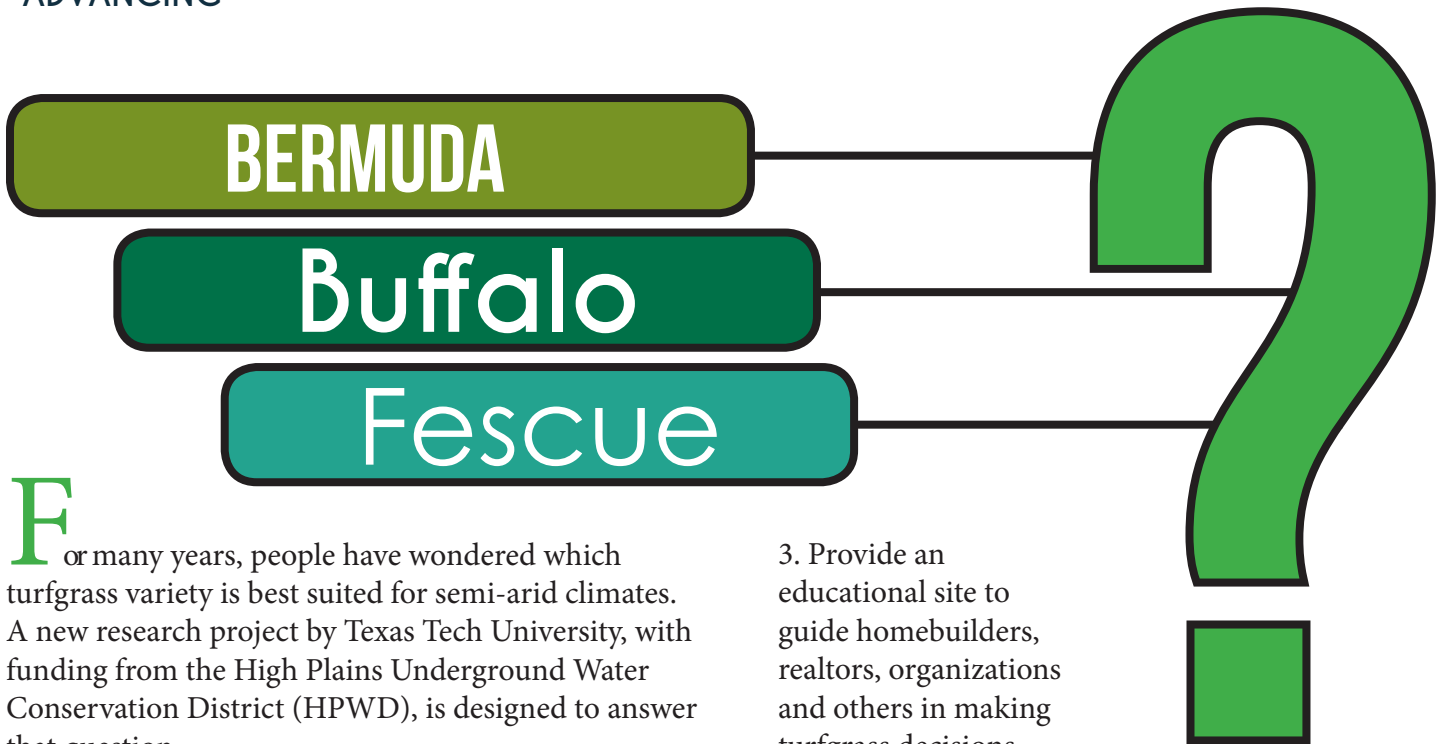
Every five years, Cargill sets goals for energy efficiency, greenhouse gas intensity, renewable energy and freshwater efficiency. The corporate environmental goals and actions trickle into each Cargill facility and location around the world. For example, Cargill set a goal in 2010 to improve their Friona beef processing plant's total freshwater efficiency five percent by 2015. By 2013, Cargill was well on its way to meeting that goal, having already achieved a four percent improvement.

Since 2007, the plant has reduced its total water use by more than 130 million gallons per year.

The plant's average water usage per day was 1.614 million gallons in 2007. Six years later, they achieved average water use of 1.246 million gallons per day. These numbers were quantified by water meters throughout the plant. Furthermore, during the same time, the plant's water use efficiency (amount of water used per pound of product produced) improved by more than 25 percent.

Most of the water used in the Friona plant is dedicated to cleaning the facilities and processing the beef. About 4,800 head of cattle are processed each day. Previously, the facility used about 600 gallons of water per animal per day throughout the meat processing stages. Now, water usage has been reduced to about 410 gallons per animal per day, which is a 32 percent water use decline.

"Our energy team will keep exploring new ways to be efficient. That could mean adopting new technologies or it could be a continuation of monitoring the water we use throughout the plant," McFarland says. ■



**F**or many years, people have wondered which turfgrass variety is best suited for semi-arid climates. A new research project by Texas Tech University, with funding from the High Plains Underground Water Conservation District (HPWD), is designed to answer that question.

“Water quantity and quality are becoming increasingly important issues in the region. There has been a great deal of research focusing on agricultural water conservation - but not as much pertaining to urban water conservation. We believe that improved water conservation efforts in the urban landscape will provide greater water resources to all,” said Dr. Joey Young of the Texas Tech University Plant and Soil Science Department (PSS). Young and Dr. Glen Ritchie are co-principal investigators for the project.

At their April 2014 regular meeting, HPWD board members approved \$6,000 in grant funding for the research project, which includes purchase of sod and management equipment.

“The High Plains Water District not only has a vested interest in agricultural water conservation - but urban water conservation as well. This is important research for our area. HPWD is excited to assist with the research,” said Precinct One District Director James Powell of Lubbock.

Young mentions three primary objectives for the upcoming research:

1. Determine the precise amount of supplemental irrigation needed to sustain acceptable turfgrass quality in semi-arid climates.
2. Evaluate performance/survival of various turfgrass species under minimal irrigation.

3. Provide an educational site to guide homebuilders, realtors, organizations and others in making turfgrass decisions.

The research plots, located at the 130-acre PSS Quaker Avenue Research Farm in Lubbock, will include both warm-season and cool-season turfgrasses.

Common bermudagrass, hybrid bermudagrass, Japanese lawngrass, Manilagrass, Buffalograss, Seashore paspalum, and Lady Bird Johnson native mix (Buffalo, Curly Mesquite and Blue Grama) are the warm-season species to be tested. Tall fescue and Kentucky bluegrass are the cool-season species.

Young explained a portion of the research test plots will receive water through subsurface drip irrigation buried to a depth of five inches. Other research plots will receive overhead sprinkler irrigation.

“The research will simulate homeowner turf management practices. This includes mowing heights of 1.25 and 3 inches as well as general fertilizer applications,” Young noted.

Although the first data from the project may be a year away, Young added field demonstration days are scheduled. The first Texas Tech Quaker Research Farm turfgrass field day took place on July 21, 2014 and drew more than 100 participants.

“I was very pleased and excited to have the turnout that we did at the field day. We hope to see it grow and be an even better event. There was lots of positive feedback, and good suggestions that we will implement in the future,” Young said. ■



## ONE CITY'S WASTEWATER IS ANOTHER MAN'S IRRIGATION SOURCE

We've all heard that one man's trash is another man's treasure. Jim Parkhill of Crosby County is using one city's wastewater as a treasured resource: irrigation water for his crops.



Approximately 35,000 gallons of the City of Crosbyton’s untreated effluent water travels two miles through a pipeline each day. Its destination is a circular Imhoff tank, which filters out the solid waste from the liquid. From there, the solid waste flows downhill to drying beds and the remaining liquid is pumped to two lagoons. Parkhill receives the city’s wastewater year-round. The city maintains the pump and he pays for the electricity.

Since the early 1960s, Parkhill’s family has used Crosbyton’s wastewater for irrigating about 500 acres of cotton, sunflowers and sudan. Located on the edge of the Caprock, he has always had to manage the farm’s water wisely.

“When my dad, G.J., was farming the land years ago, we had a limited supply of groundwater,” Parkhill reflects. “As the opportunity to use wastewater came about, we knew it made sense for our operation.”

The only water Parkhill’s farm gets is from wastewater or rainfall. Until last growing season, Parkhill furrow irrigated because of the remaining solids present in the water, but this year he started applying the wastewater through a center pivot. The nozzles for the pivot have a 3/32 inch screen to allow any remaining large material to flow through the nozzle heads with ease.

Because effluent irrigation application must be precise, Parkhill has a runoff catchment system to prevent any kind of freshwater contamination. He has trenches lining each section of the two fields that catch any runoff from the rows. Once the water is in the trench, it flows back to a dirt tank near the lagoons, where it can be pumped back into the system.

**“AS THE OPPORTUNITY TO USE WASTEWATER CAME ABOUT, WE KNEW IT MADE SENSE FOR OUR OPERATION.”**

*Jim Parkhill*

“Dad always said ‘You have to be even more responsible when you’re irrigating with wastewater,’” Parkhill says. “I can’t ever have it leave my property and risk it running down the canyon.”

He mentions that water resource management is also important for successful irrigation application. During the winter months, he lets the lagoons fill back up to prepare for the next growing season.

“The most challenging part of wastewater irrigation is the planning process,” Parkhill explains. “For instance, I have to plan exactly how much water I irrigate out of the lagoons to make sure my runoff trenches don’t get too full in case it does rain.”

HPWD commends Jim Parkhill for using an alternative source of water for irrigation purposes. This helps conserve his limited groundwater resources for other use. ■

The only water Parkhill’s crops get is from wastewater or rainfall.





# Sustaining with the Rain



What is groundwater worth? To many, it is a priceless resource. Jim and Denise Doucette of Lockney understand the value of groundwater, which compelled them to install a large-scale rainwater harvesting system for their ranch.

**“JUST BE WITHOUT WATER FOR A DAY OR TWO AND YOU SOON REALIZE YOU REALLY NEED TO PROTECT ALL THE WATER THAT YOU DO HAVE. IT’S IMPORTANT TO USE IT WISELY AND NOT WASTE IT.”**

*Denise Doucette*

**B**eginning in 1998, the Doucettes’ rainwater collection system was initially installed to prevent runoff from their 100 foot by 125 foot barn from flooding their cattle pens. However, they soon learned that water collected in the eight 3,000 gallon tanks could be used for their five horses and supplement their well water.

“Anything we can do to reduce our usage of the aquifer is a benefit,” says Jim Doucette, Owner and Operator of JDP Ranch.

With the first quarter of 2014 being extremely dry, some may argue that there wasn’t enough rainfall to make collection feasible. The Doucettes disagree.

Their farm received 0.40 of an inch of rain in April 2014. From that, they collected 1,000 to 1,200 gallons in three of their eight tanks, totaling about 3,000 gallons of harvested rainwater.

By collecting so much water with so little rain, Jim thinks rainwater harvesting could help supplement future water supply for rural towns.

“I hope it (rainwater collection) will provide small towns out here with a way to survive,” Jim adds.

“The quality of life in a small town is one of the underreported things in our society.”

Denise believes an understanding of the value of water by all portions of society is important to encourage sustainable water practices throughout the community, including rainwater harvesting.

“Just be without water for a day or two and you soon realize you really need to protect all the water that you do have. It’s important to use it wisely and not waste it,” Denise explains.

Given the success of their current system, they may consider installing more rainwater harvesting tanks in the future. They say it would not be that difficult to equip their current system to supplement groundwater used in their home. All that’s needed is a pump and a water treatment (purification) system.

“As the drought continues, many people will start to think about water conservation techniques, such as rainwater harvesting. It’s important to plan ahead - since the price of water (and other resources) increases whenever there is a demand,” Jim reflects. ■



Collected rainwater fills the tank for livestock.



Each tank holds 3,000 gallons of rainwater.



The barn roof collection area is 12,500 square feet.



Euphorbia myrsinites  
(Donkey Tail)



Dianthus (Spooky variety)

**NEAL HINDERS:** *Speaking the  
Native Plant Language*



Canyon's Edge Plants Owner, Neal Hinders has worked with native plants since 1989.

**N**ative plant seeds from South Carolina are not native plant seeds to Canyon, Texas. Neal Hinders and his wife Nancy wanted to find native plant varieties that would flourish in the Texas Panhandle.

Walking through Canyon one spring day, they noticed an Engelmann Daisy that was living with little-to-no care in a parking lot. That was the kind of native plant they needed, and that's how Canyon's Edge Plants began the native plant business.

Canyon's Edge Plants began as a hobby for Hinders in 1989. He was a stay-at-home father who had only a few hours in the evening to devote to trial and error gardening experiments in his backyard. Once he realized the potential niche for the native plant market, he acquired a license from the Texas Department of Agriculture and opened up shop.

"I do sell a variety of native and xeric plants, but I like to see the results of a plant doing well before I sell it to somebody," Hinders says.

Both knowledgeable and simply curious customers flock to the native plant nursery. Now that the location has moved to downtown Canyon, there are even more customer possibilities.

"My main customers are local master gardeners who know their plants, but we hope to attract a variety of other customers now that we have moved to a more convenient location in downtown."

As potential customers drive through the Square, they might see demonstration gardens inside and outside of the plant nursery walls. In addition to visual demonstrations, Hinders gives several presentations regarding xeriscape and native plants at various events. His website ([canyonsedgeplants.com](http://canyonsedgeplants.com)) has a wide range of information about planting and managing native plant species. He plans to produce a series of instructional videos for the website in the near future.

Hinders believes awareness of native landscaping benefits will increase as industries and other community leaders work to promote the idea of water wise plants.

"We all need to get on board and figure out how to make saving water work. When people can see an attractive and cost-effective yard, they'll start believing in the benefits of native and xeric landscaping." ■

# BUSHLAND FFA: Building More Than Welding Projects

During the past four years, members of the Bushland, Texas FFA chapter have welded more than 90 well caps for the High Plains Water District.



Bushland FFA seniors, Kenton Miller and Hannah Gaddy.

Locating and getting open wells properly covered or filled has been an important function of the District since its creation in 1951.

Properly covering open wells requires a sturdy well cap. Each well cap is sized according to the well it will fit, and welding each piece of metal together takes time and teamwork.

In fact, Kenton Miller has plenty of first-hand experience constructing well caps. The Bushland High School senior says he's welded between 15 and 20 well caps total.

The students construct the well caps by welding a steel plate to a piece of well casing smaller in diameter than the existing open well. The finished cap is lowered into the well so that the steel plate covers the open well.

"We learn the importance of keeping the pipe level and tacking the metal," Miller says. "It takes two of us to get the well cap exact."

Scott Farley has served as the Bushland ISD Ag Science teacher for nine years. He understands the importance of building well caps for the High Plains Water District.

"The well caps are critical to protecting our water sources and preventing groundwater contamination. I'm glad my classes can help with that process."

While building well caps benefits the Water District, being involved in FFA has truly benefited Bushland High School senior Hannah Gaddy.

"Before FFA, I had no idea I was interested in studying agricultural business," Gaddy notes. "My whole life has been changed by the FFA."

Miller and Gaddy understand the importance of water conservation. Miller knows water is essential to living abundantly in this region.

"When you think about how many uses we have for water in a day, the amount begins to add up quickly," Miller says. "It's critical to save water and to help prevent groundwater contamination with well caps."

The lessons of character building and the skill of welding are attributes Bushland High School has provided to these two students. Both Miller and Gaddy have been highly involved in FFA throughout their high school tenure, which has catapulted them into their next phase of life: college. ■



# MULESHOE STATE BANK RECOGNIZED FOR BEING WATER WISE

**M**uleshoe State Bank of Muleshoe, Texas, has used water efficiently since 1972, which is when the bank first installed a xeriscape throughout the grounds. Chairman and CEO Bob Finney believes the choice was a good one to make for water savings and relatively easy maintenance.

“Xeric landscaping is relatively easy to maintain. In West Texas, the biggest problem you have is the dust blowing over the years,” says Finney. “We use almost no water.”

The bank was renovated last year, which also included updating the xeriscape plants. Finney adds that professional landscapers are the key to knowing which plants work and which ones don’t for the dry, arid climate of this region. A few current plants include red yucca, agave varieties and deer grass.

Since Muleshoe State Bank adopted xeriscaping 42 years ago, they have received many positive comments.

“The community has really appreciated what we’ve done with the remodel and updating ... we’ve had an amazing amount of comments, particularly about the landscape,” says Finney.

In fact, Finney says the key is to keep the landscape appealing to customers.

“People do appreciate nice landscaping.” ■

**XERIC**-----  
-----**SINCE 1972**

# The City of Wolfforth: Streamlining Water Efficiency into One Proactive Pipe



PHOTO CREDIT: Luann Curry  
of Curry Photography

If there was one word to describe the City of Wolfforth’s public works department, it would be progressive. The city, about 11 miles southwest of Lubbock, is currently undergoing a \$6.5 million overhaul of its water storage tanks and water treatment facilities. The adopted changes are the combined effects of required water quality improvement resulting from state regulations, as well as the desire to be as efficient as possible with a finite resource.

## THE PROJECT

Started two years ago, the project is estimated to take another year to fully complete. The primary catalyst for infrastructure improvement was fluoride levels in the water supply, which were higher than the Texas Commission on Environmental Quality (TCEQ) public drinking water standards. To bring the fluoride levels back into compliance, Wolfforth embarked on a pilot project using an Electrodialysis Reversal (EDR) process. Typically, reverse osmosis (RO) is the technology utilized in cases like this, but Wolfforth city officials were not satisfied with the water recovery loss associated with an RO system.

“The water recovery loss on an RO system is close to 30-40 percent,” says City Manager Darrell Newsom. “We found our water recovery loss in the EDR plant to be only five to six percent, which is why we chose to build a plant that wasted less.”

The project is a three-step process. Two of the three phases are nearing completion. The first phase was tying all of the city wells into the same line. This blends the water and dilutes fluoride levels. The next phase involved cleaning the interior of the elevated and groundwater storage tanks. A new 1.5 million gallon ground storage tank was built to allow better control of water storage, as well as alleviating stress caused by constant pumping of wells. The final phase is construction of the EDR plant. Most of the city’s raw water will be treated through the EDR plant and then pumped to the city’s 4,000 customers. The final product will be purer and cleaner than before with a blend of 75 percent treated water and 25 percent raw water direct from storage.

“This EDR plant is basically capable of desalination,” Newsom says. “We’d have to go back to TCEQ and permit it for a different use, but we wouldn’t have to change the hardware.”



Newsom hopes the City of Wolfforth's pilot project helps other communities in the same situation.

"EDR is a fairly proven technology and because we have been early adopters of this kind of plant, we would be willing to share our experience with others so that they would not have to reinvent the wheel," Newsom adds.

## WATER MONITORING TECHNOLOGY

Doug Hutcheson, director of public works for the City of Wolfforth, keeps track of daily water use trends. Mobile technology provides instant access to the city's water use data. During our Oct. 16 interview, Hutcheson quickly retrieved the daily water use for Wolfforth from his phone. At that time, the number was about 575,000 gallons per day, or 144 gallons per person per day. The average daily water use ranges from 800,000 to 850,000 gallons per day during the hotter and drier months. He explained there had been a significant drop in outdoor watering due to rainfall.

There are 16 city wells in use. In order to keep up with the status of each well, Hutcheson says all of the employees can input or check well data information from their mobile devices. Each well also has its own website, where city officials can monitor the amount being pumped and identify which well is pumping. Every well has its own log, permit and status. If a well is working improperly, a camera is lowered down the well casing to identify the problem. The well exploration videos are uploaded to YouTube and the final product is put onto the well's website, so everyone working with the well knows the maintenance history of the well.

"We are able to diversify our wells," Hutcheson says. "In other words, we know exactly which wells are pumping and which ones are resting. We diversify our pumping to alleviate any stress on one particular well in our system."

## EFFORTS BEYOND THE EDR PLANT

In addition to the water quality infrastructure efforts taking place, Wolfforth has been involved in other water efficiency initiatives. In August 2014, they hosted the first-ever Water Expo, which attracted more than 200 people to learn about several water-related

## WOLFFORTH WATER USAGE CHANGES DEPENDING ON THE TIME OF YEAR:

**500,000 GALLONS/DAY**

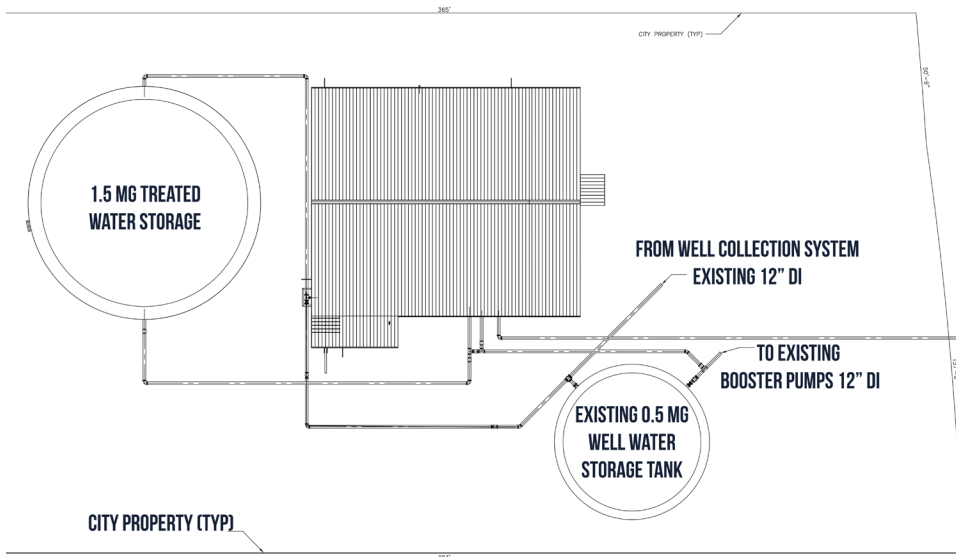
average  
winter use

**575,000 GALLONS/DAY**

total usage on  
October 16, 2014  
(Interview date)

**800,000 GALLONS/DAY**

average used during  
hotter and drier  
months of the year



Schematic of the EDR plant.  
(Courtesy of City of Wolforth)

**“WE DIDN’T ADD ANY MORE WATER. WE JUST IMPROVED THE QUALITY OF THE WATER WE ALREADY HAVE.”**

*City Manager  
Darrell Newsom*

topics. The program incorporated workshops on landscaping, water sources, municipal programs, a legislative preview and several trade show booths.

City Councilman Dave Cooper directed the planning and implementation of the Water Expo. “We wanted to reach all people, not just our people, but the entire region,” Cooper states.

However, water conservation projects don’t stop at the city level. The Frenship High School DECA Marketing group has selected water conservation as their campaign focus for the 2014-2015 school year. DECA students who participate must develop measurable marketing results throughout their campaign efforts. Frenship students discovered how to measure the effectiveness of their campaign.

“The way to get conservation in the home is through the kids,” Newsom says. “Our high school students figured out that they can encourage change by speaking to the elementary students who then go home and tell their parents.”

Just like its students, the Frenship Independent School District also has water savings on its mind. A recently approved bond package includes \$85 million for artificial turf projects at most of the school’s athletic fields.

## LOOKING INTO THE FUTURE

“We’re always looking for something new,” Newsom shares. There is also potential for change in landscaping ordinances, looking into the use of greywater and working to spread the important message of dealing with a finite resource, Newsom explains.

Newsom, Hutcheson and Cooper all agree it’s important for communities to be proactive with their water planning. “It’s much easier to plan 10 - 15 years in advance rather than wait for the problem to happen and then react,” Cooper says. Wolforth’s efforts will prolong the life of its water supply and improve overall quality.

Newsom says there’s something we should all keep in mind: “What you have to realize is that we’re only improving the quality and the storage capacity. We didn’t get any more water. We didn’t add any more water. We just improved the quality of the water we already have.” ■

# Lazbuddie ISD seeks help to save the town's water and livelihood

What do you do when the well you rely on is pumping air and sand instead of water? You take action. At least that's the approach Lazbuddie ISD Superintendent Joanna Martinez decided to take. Martinez, a 1995 LISD graduate, returned to her hometown five years ago. Water has been a topic of discussion for the community of Lazbuddie ever since she returned.

## THE PROBLEM

Efforts to alleviate the water issues started prior to the 2011 drought. The school's well maintenance personnel put smaller pumps in the two working wells and also bailed them in hopes of prolonging the wells' water supply. Unfortunately, these modifications were only a temporary fix to a much larger problem.

"As the years wore on and the drought continued, it became very, very apparent that we had a major water crisis pending," Martinez illustrates.

Martinez immediately started making phone calls, contacting the High Plains Water District first. HPWD referred her to the Texas Rural Water Association. From there, she was directed to several other entities at a regional and state level. The Texas Commission on Environmental Quality (TCEQ) shed some light on the situation by referring LISD to the Panhandle Regional Planning Commission (PRPC) based in Amarillo.

Last year, representatives from TCEQ, Parmer County, LISD, PRPC and the town's infrastructure engineer determined a plan of action. In this plan, everything would be approved and handled through the Parmer County government. The county would apply for a \$350,000 grant through PRPC, which would then be allocated to LISD.

## WHAT IS THE WATER SITUATION?

Lazbuddie ISD supplies water for the school and homes in the surrounding area. There are two existing

wells supplying water. One well is used for irrigation while the other is used for residential and municipal water needs.

"We've got 193 kids and approximately 35 staff members that rely on our wells," Martinez said.

Starting two years ago, restrictions on watering grass, washing cars, and using water beyond absolute necessity became mandatory because of the seriousness of the situation. Last year about this time, the wells started pumping more air than water.

"We knew our irrigation well was down to about 15 feet of standing water," Martinez explains. "We pulled our good well that services the school and the houses, and it was down to 10 feet of standing water."

Learning this shocking reality expedited the grant application process, but how exactly would receiving the grant solve such a serious water situation? Although the plan was agreed upon, one thing was certain

above all else: "We lose our water, and we are done here," Martinez says.

"IF WE WERE TO RUN OUT OF WATER, NOT ONLY WOULD THE SCHOOL NOT BE ABLE TO OPERATE, I'D HAVE 16 FAMILIES WITHOUT HOMES."

JOANNA MARTINEZ  
LISD SUPERINTENDENT

## GRANT ATTRIBUTES AND TIMELINE

The grant application process began in Spring 2014. The three main components of the first phase would include replacing the pressure tank, servicing the two wells and replacing a chlorinator. The grant has already paid for the installation of the Variable Frequency Drives (VFD) on the two existing wells. A VFD mechanism is designed to eliminate stress on a well pump. The specialized control of a VFD allows for energy and pump maintenance savings in the long run because the pump only runs when necessary.

The school will install a new 30,000 gallon storage and pressure tank, as well as a new chlorinator, during the next phase of the project. Both pieces of equipment will be in a new storage facility. The trickiest piece of the grant is the drilling of a third well because many variables must be considered.



A before and after courtyard comparison.

“It’s been very nerve-wracking, because there are no guarantees any way we go. I’ve really questioned myself about ‘Did I do the right thing in going after this grant?’ because my motivation was two-fold. I want to try and do everything that we can with as little out-of-pocket money as possible. But the other was just getting on a radar screen with somebody.”

### OBSTACLES TO OVERCOME

Drilling a new well could be risky, but not drilling one could be even more costly for a town that needs to secure an additional water source immediately. In late summer, Lazbuddie solicited well drilling bids, but only received one. The bid exceeded the cost by twice as much as they had planned. They rejected the bid and will open bids once again in late fall.

“If the cost of the project exceeds the amount of the grant, someone will have to pick up the tab,” Martinez says. “So we drew up a memo of understanding between the school and the county, basically saying if there’s any overage, the school will pay for it.”

Martinez explains getting the right type of company for the job is complicated. Hiring a general contractor is preferred, because they are bonded and insured, meaning there’s more financial stability.

“The other thing is our grant doesn’t pay for projects right away. They have to wait until the project is absolutely finished before anyone gets their money.”

The road of obstacles for Lazbuddie might not be over yet, but the city residents and school district personnel are doing everything to make ends meet.

### CHANGING A MINDSET

Since 2011, LISD has changed the way they think about water use. If a person had looked between the

gym and the cafeteria two years ago, they would have seen a grassy area that created a perfect scenario for collecting two weather extremes: dust and water. Now, the courtyard is covered in concrete, sloped on all sides, and runs to a below-ground cistern. The cistern is about 15 feet deep and 100 feet long. When the cistern fills to a certain point, the water is pumped to the football practice field. They only irrigate a portion of their football field because of water limitations.

“When we water the football field, we just irrigate the center of the field,” Martinez reflects. “We don’t even water the sidelines or the end zones.”

In addition to irrigation adjustments, their students are encouraged to pay attention to leaking faucets or toilets throughout the school and report them to office staff. Replacing 36 toilets and 18 urinals can get expensive, but Martinez says replacement toilets are high-efficiency models.

### WHAT’S NEXT?

Even though Martinez isn’t sure how all of this will play out for Lazbuddie, she knows something has to happen soon.

“If we were to run out of water, not only would the school not be able to operate, I’d have 16 families without homes.”

If there is any advice she could give to other school districts that are dealing with similar issues, or districts wanting to prevent similar issues from occurring, she says one thing made a real difference in their process.

“From this juncture, my best piece of advice would be to reach out and ask for help. I think for communities our size, it’s not if you get to this point, it’s when. The sooner you can start developing a contingency plan, the better.” ■

# TAWC Demonstrates Water-Smart Agriculture

Operated since 2005, the Texas Alliance for Water Conservation (TAWC) mission is to conserve water for future generations by identifying those agricultural production practices and technologies that, when integrated across farms and landscapes, will reduce the depletion of groundwater while maintaining or improving agricultural production and economic opportunities.

TAWC cooperator and Producer Board member Eddie Teeter said it best when looking back over the project and the role of TAWC in helping him and others conserve their irrigation water.

“In eight years, we’ve had excessively wet years and we’ve had excessively dry years and we’ve had one or two normal years,” Teeter said. “So we’ve been able to put together data to help farmers know how much water it takes to produce a pound of crop.”

Major accomplishments of the project include:

- Creation of a Unique Data Set: Nine years of records on field operations, management decisions, weather, irrigation, crop yields, and purchased inputs have been collected.
- Economic Evaluations: Profitability, costs of production, and economic efficiency were evaluated through the preparation of enterprise and system budgets. Producers have benefitted from site-specific and whole-farm analyses.
- Best Management Practices: Implementing more-efficient irrigation methods, irrigation

scheduling based on evapotranspiration (ET) and diversification of crop species has resulted in more applied water reaching the root zone.

- Field-Based Testing of Emerging Technologies: TAWC has tested the effectiveness of new equipment for irrigation system management and for sensing soil moisture and crop stress and provided unbiased evaluations to aid purchasing decisions by producers.
- Irrigation Management Tools: The Irrigation Scheduling tool uses ET estimates to help producers with irrigation decisions. The Resource Allocation Analyzer evaluates crop alternatives for maximum profitability. Both the Resource Allocation Analyzer and the Irrigation Scheduling tool are available at [www.TAWCsolutions.org](http://www.TAWCsolutions.org).
- Outreach and Dissemination of Results: Field days and workshops varying in location and format were frequently held to share producers’ experiences with new technologies aimed at conserving water.
- Project Expansion: Additional grants were received to expand the involvement and impact of TAWC demonstrations and test sites beyond Hale and Floyd Counties.

Producer Glenn Schur of Plainview said, “The TAWC project has helped me...and I’ve learned to manage the water so I can irrigate as effectively as possible.” ■



Field equipment provides data for irrigation management.

PHOTO CREDIT:  
New York Times



## Are you as WaterWise™ as a 5th Grader?



**C**an you correctly answer the following questions?

1. What percentage of the Earth's water is freshwater?
  - A. 80%
  - B. Less than 1%
  - C. 20%
  - D. 50%
  
2. How many gallons of drinking water does the average person in the U.S. use each day?
  - A. 100
  - B. 50
  - C. 10
  - D. 700
  
3. Most of the water in the world is in rivers and lakes.
  - A. True
  - B. False

If you answered these correctly, then you might be as smart as a 5th grader that has participated in the WaterWise™ conservation curriculum.

HPWD has sponsored the WaterWise™ curriculum for District 5th graders the past 18 years. About 2,000 students participated in the program during the past year alone.

“Young people are eager to learn and share knowledge with others. Water conservation education makes an impact in water use habits of others in the home,” says HPWD Information/Education Supervisor Carmon McCain.

The kits provided to schools include curriculum and hands-on exercises for conducting a water audit at home. The use of pre and post-tests quantifies the knowledge students gain from the program.

“The kits were a hit!” says Springlake-Earth Elementary School teacher Melinda Riley. “They were excited about installing the devices.”

The home water audit gives parents and students an opportunity to evaluate current water use, and identify areas of improvement.

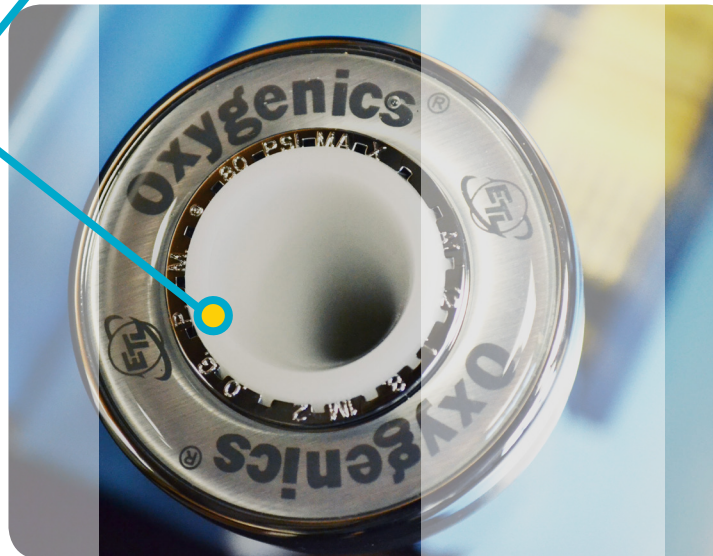
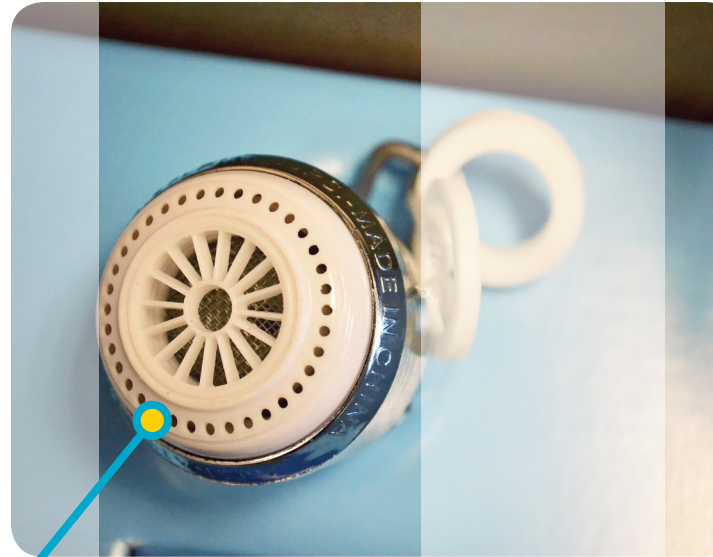
“We were thoroughly impressed with this program,” says Shallowater Middle School parent Amy Roberts.

Teachers interested in participating in the program are encouraged to contact McCain by email at [info@hpwd.com](mailto:info@hpwd.com). ■

ANSWERS: B, A, False

Some of the highlights from the 2013-2014 report are as follows:

- Student scores on a ten-question test improved from 68 percent (pre-test) to 86 percent (post-test).
- The showerhead retrofit by the 2,253 participants will save 8,207,187 gallons of water per year or 82,071,866 gallons of water during the expected ten-year life of the fixture.
- The kitchen faucet aerator retrofit by the 2,253 participants will save 4,692,521 gallons of water or 23,462,607 gallons of water during the expected five-year life of the fixture.
- The bathroom faucet aerator retrofit by the 2,253 participants will save 4,782,335 gallons of water or 23,911,673 gallons of water during the expected five-year life of the fixture.
- Approximately 91 percent of the participating teachers indicated they would conduct the program again if given the opportunity. Approximately 96 percent indicated they would recommend the program to their colleagues.



HPWD welcomes newly elected Senator Charles Perry (District 28) and Representative Dustin Burrows (District 83). Senator Perry, along with Senator Kel Seliger, represents a portion of the HPWD. Representative Burrows joins Representatives Four Price, John Smithee, Ken King, Drew Springer, and John Frullo whose districts coincide with the HPWD service area. HPWD appreciates the service of all these individuals, and their dedication to water conservation.

## Welcome Senator Charles Perry

Senator Charles Perry represents seven counties within HPWD, including Crosby, Floyd, Hale, Hockley, Lamb, Lubbock and Lynn. Senator Perry was first elected to the Texas House of Representatives in 2010 and served District 83 for two legislative sessions. This past September, he won a six-way special election for the Senate District 28 seat. Senate District 28 includes 21 groundwater districts.

A native West Texan, Senator Charles Perry grew up and attended high school in Sweetwater, Texas. Upon graduation, Perry earned his Bachelor of Business Administration degree in accounting and management information systems from Texas Tech University. Currently, Perry owns and operates a certified public accountant (CPA) firm in Lubbock, Texas. He and his wife Jacklyn, have been married for more than 30 years. They have a daughter, Jordan and a son, Matthew.

Perry says water is always one of the top three issues brought up by constituents. Perry believes that ensuring communities are investing in water infrastructure and conservation efforts is critical to the long-term sustainability of our state. Perry plans to continue fighting for our region’s rural water rights.

“I appreciate and support the conservation efforts of HPWD. Local groundwater conservation districts are the State’s preferred method of groundwater management,” Perry says. ■



PHOTO CREDIT:  
Lubbock Avalanche Journal



PHOTO CREDIT: Dustin Burrows for HD 83 Facebook page

## Welcome Representative Dustin Burrows

Dustin Burrows represents two counties within HPWD, including a portion of Lubbock and all of Lynn. Burrows was elected to the Texas House of Representatives in November 2014. House District 83 covers four groundwater conservation districts which are High Plains UWCD, Llano Estacado UWCD, Lone Wolf GCD and South Plains UWCD.

“I look forward to working with the local groundwater conservation districts to increase and prolong our groundwater supplies,” Burrows says.

After graduating from Lubbock Monterey High School, Burrows attended Rhodes College. Afterward, Burrows returned to Lubbock in 2001. He graduated from Texas Tech School of Law and the Rawls College of Business with a J.D. and M.B.A. in 2004. Since then he has worked at the firm of McCleskey, Harriger, Brazill & Graf with his father.

Dustin and his wife Elisabeth have two sons, Davis and Whitby. ■



# 2015 Legislative Session Preview

## CHANGES ON THE HORIZON

The 84th Texas Legislative Session begins January 13, 2015. Significant changes are anticipated as we have recently witnessed a noteworthy change in the governing body of Texas. A new executive branch of government will emerge, as Texas recently elected a new governor (Greg Abbott) and lieutenant governor (Dan Patrick). This session will be the first time since 2001 that Rick Perry is not governor. It also marks the first time since 2003 that David Dewhurst is not lieutenant governor. Other notable differences include:

### House of Representatives:

- 25 freshman representatives
- Nine committees will have new chairmen, including the House Natural Resources.

### Senate:

- Eight new senators
- Five committees will have new chairmen
- New lieutenant governor

State officials whose districts coincide with the HPWD service area include:

- Representative Four Price, District 87
- Representative John Smithee, District 86
- Representative Ken King, District 88
- Representative John Frullo, District 84
- Representative Dustin Burrows, District 83
- Representative Drew Springer, District 68
- Senator Charles Perry, District 28
- Senator Kel Seliger, District 31

HPWD has communicated with many of our representatives throughout the interim session. We appreciate their help representing water interests of those within the District. These representatives must address the needs of a rapidly growing Texas population which includes: water, transportation, infrastructure, education and immigration.

## UPCOMING WATER ISSUES

Drought conditions have severely plagued the state since 2011. Despite adequate rainfall in some portions of the state, repercussions of drought are still visible. Alternative water resources will be discussed in the upcoming session, since more water is required to meet our state's increased water demand.

One strategy being considered for meeting our state's water demand is Aquifer Storage and Recovery (ASR). ASR is a relatively proven practice being used in certain areas of the state. The House Committee on Natural Resources has an interim charge to "examine strategies to enhance the use of ASR projects, including a review of existing ASR facilities in Texas and elsewhere."

Another alternative water resource strategy for meeting our state's water demand is the exploration of brackish groundwater. Identifying how much brackish groundwater exists below the surface and encouraging the use of that resource as an alternative to freshwater will be an important part of developing future water resources for Texas.

Groundwater conservation districts are the state's preferred method of groundwater management. HPWD advocacy includes conservation, the protection of private property rights, and maintaining local management of water resources. HPWD does not believe there is a "one size fits all" policy when it comes to groundwater management in Texas. Innovative solutions to our state's water needs must be based on sound science. ■

# HPWD Year in Review

By General Manager Jason Coleman, P.E.



During the past year, HPWD has accomplished a number of goals. It is a privilege to serve those within the District. The HPWD Board of Directors and staff have worked together in an effort to provide superior service to our constituents. Several notable advancements have been made in our programs and conservation education, including the following:

## PERMITTING

- Fillable electronic forms simplify record keeping
- Electronic issuance of well permits saves the District substantial postage expense
- Email delivery is quicker than regular mail

## IRRIGATION ASSESSMENT PROGRAM

- Provides a number of services to irrigators, including:
  - Static water level measurements
  - Flow testing of wells and irrigation systems
  - Water quality monitoring
  - Calculations of total water usage

## RAINWATER HARVESTING

- Hosted four rainwater harvesting workshops in Levelland, Muleshoe, Canyon and Lubbock
- Attendees were given a decorative rain barrel, rain chains and other prizes
- We received several photos afterward from those who installed their barrels. The summer rains provided a number of opportunities for rainwater catchment.

## WEBSITE

- HPWD now offers the following online:
  - Well logs, water level and saturated thickness data maps
  - Tools for analyzing potential new well sites using the District's well spacing rules

- Well owners, pump installers and water well drillers are no longer traveling to a county office in order to retrieve well log information. This project has also eased some constraints on staff resources, since we no longer print and mail these documents when the information is requested.

## FIELD EQUIPMENT

- New ultrasonic flow meters
- Rugged tablet computers and high accuracy GPS receivers
- All of these devices provide a high level of accuracy and certainty when conducting field work

## ELECTRONIC NEWSLETTER

- Published twice a month and emailed
- A monthly print version is provided to those who request a hard copy

## PERFORMANCE EVALUATION

HPWD is committed to providing superior service to all of its constituents. We are providing an evaluation form to our permit applicants, as well as those who use other District programs. We use these results to improve our services and make certain we meet the expectation of those we serve. ■

Educating. Advancing.  
Conserving.

HP  
WD



High Plains  
Underground Water  
Conservation District

Visit our website for more  
information, [www.hpwd.org](http://www.hpwd.org).



High Plains  
Underground Water  
Conservation District