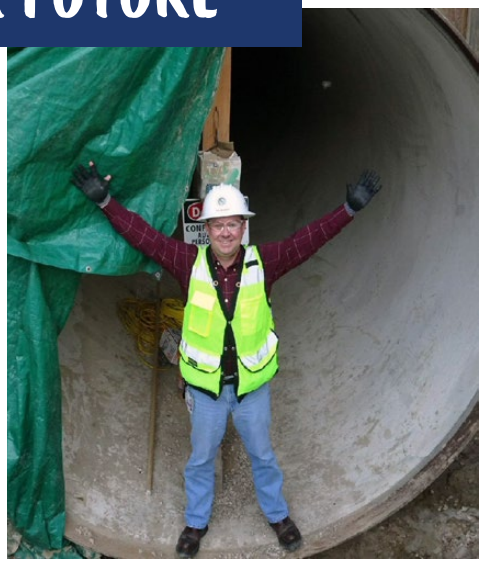
WATERWORKS

WEST HARRIS COUNTY REGIONAL WATER AUTHORITY

SECURING WATER FOR OUR FUTURE



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Diggin' Old Stuff Heritage Festival...in early November, the WHCRWA participated in Pct. 3's annual celebration of early Texas culture at the Kleb Woods Nature Center. The Authority's Mobile Teaching Lab was on scene to emphasize the importance of adequate water supplies on the frontier. "*Texas Smith*"(a.k.a. Steve Baird, left), the Save Water Texas Coalition's educator and archaeologist and his assistant, Eli Gonzalez, demonstrated how to make a "dig box" and shared the Coalition's classroom program, **Digging Up History**. The program was developed for 4th grade students and contains a "Dime Novel" (*Journey to the Land of the Mammoths*), and videos featuring visits to the Waco Mammoth Museum and the Gault archaeological dig on "Buttermilk Creek."

The WHCRWA invites you to visit the Authority's website (www.whcrwa.com) to view their new documentary video, ***"Partners in Progress."*** The presentation is approximately 17 minutes long and features interviews with representatives of regional water entities and the City of Houston, partnering to construct massive new infrastructure projects to bring more surface water into the Authority's system to keep pace with future demand. See "*The Rising Cost of Water*" article that begins on page 3 for more information about what's being done to secure our future water resources.

RISING COST OF WATER

WHERE DOES OUR DRINKING WATER COME FROM?

Residents in northwest Harris County have traditionally relied on groundwater pumped from individual wells, many of which might now be 30 or 40 years old. This water has been delivered to homes and businesses by hundreds of individual Municipal Utility Districts (MUDs). When the faucets were turned on…water came out.

WHY ARE WE CONVERTING TO SURFACE WATER?

As recently as twenty years ago, people were generally unaware that there was a growing problem with land subsidence in the area, or that aquifers supplying the region were beginning to decline. In the 1970's, when the Brownwood Subdivision south of Houston was overwhelmed by flooding and sank into the marsh, few outside that area even noticed...but it served as an indisputable wake up call.

In 1975, the Texas Legislature created the Harris-Galveston Subsidence District with the power to restrict groundwater withdrawals as a method to arrest subsidence. After the District required industries on the Houston Ship Channel to convert to surface water, subsidence in the Baytown-Pasadena area was dramatically improved, and has since largely been halted.

The combination of subsidence in northwest Harris County and evidence that aquifers were declining confirmed the need to convert to surface water for this area, as well. The Subsidence District extended its groundwater regulation to include north and west Harris County in 2000.

The first phase of the Subsidence District's groundwater reduction mandate was completed in 2010, which reduced reliance on groundwater in the area by 30 percent. The next deadline is 2025 and requires 60 percent conversion to alternate (or surface) water.

WHERE WILL OUR WATER COME FROM IN THE FUTURE?

Will we have enough water to meet the needs of our growing population and to sustain economic growth and development for future generations? We believe the answer is "Yes."

Each year, the Texas Water Development Board (TWDB) collects information on water usage and comprehensive population projections from water systems around the state. Every five years, this data is used to create **The State Water Plan** to provide a critical roadmap for our long-term planning.

Since its creation in 2001, the West Harris County Regional Water Authority (WHCRWA) has complied with Subsidence District groundwater reduction mandates, and is actively constructing a new water infra-structure to deliver water to hundreds of thousands of additional residents in the future.

An alliance of regional water providers has

Continued on page 4

RISING COST OF WATER

Continued from page 3

teamed up to initiate the **Luce Bayou Interbasin Transfer Project** that will bring untreated water from the Trinity River to Lake Houston and the City's Northeast Water Purification Plant. The partners include the City of Houston, the North, West and Central Harris County Regional Water Authorities, the North Fort Bend Water Authority, and the Coastal Water Authority.

Construction on the Capers Ridge Pump Station on the Trinity River's west bank is underway. When fully functional, it will be able to divert up to 500 million gallons of water a day from the river into huge side-by-side underground pipelines, then into a series of canals, and into Lake Houston.

With more untreated water coming into the Lake Houston reservoir, regional water authorities and the City of Houston are also partnering to expand the **Northeast Water Purification Plant** with each paying its fair share of the costs. This massive project will increase the treatment capacity by 320 million gallons a day. This plant expansion is considered to be the largest design-build project of its kind underway in the U.S. today.

The **Surface Water Supply Project** is a landmark endeavor that will deliver much-needed water treated at the Northeast Water Purification Plant through a major, 8 ft. diameter transmission line across almost 40 miles to west Harris and Fort Bend counties. The pipeline is a joint project between WHCRWA and the North Fort Bend Water Authority.

In addition to these projects, the WHCRWA will also need to fund its internal distribution lines, constructing 75 miles of new water distribution lines to convert additional MUDs to surface water.

Add up the price tags of the massive projects now underway and WHCRWA's share comes to about $1.5 BILLION over the next decade. Fortunately, we have access to the TWDB's State Water Implementation Fund for Texas (SWIFT) to help pay for these water supply projects.

There is no doubt that the cost of water will continue to rise; however, the Authority's Board of Directors is committed to keeping the cost of water as low as possible for as long as possible.

LUCE BAYOU INTERBASIN TRANSFER PROJECT:
EST. TOTAL COST ~ $350 M
WHCRWA COST ~ $70 M

NE WATER PURIFICATION PLANT EXPANSION:
EST. TOTAL COST ~ $1.775B
WHCRWA COST ~ 460 M

SURFACE WATER SUPPLY PROJECT:
EST. COST ~ $1.2B
WHCRWA COST ~ $660M

WHCRWA 2025 INTERNAL DISTRIBUTION LINES:
EST. COST ~ $361M

Effective January 1, 2019 the well pumpage fee is $2.95/1000 gallons and the surface water fee is $3.35/1000 gallons.

BUILDING FOR THE FUTURE IS A GOOD INVESTMENT!

By Kathleen Jackson, Board Member, Texas Water Development Board

Communities across Texas are taking the initiative to ensure they have the water they need, not only for today, but also for the future. Through committed and active leadership, they are teaming up with the Texas Water Development Board (TWDB) to move impactful water infrastructure projects forward. Across our state, there are diverse needs, and communities find themselves at different points in addressing their own unique challenges. Some entities are shovel ready and starting construction; others may need more time to work out the details. The important thing is that communities are taking action now!

Asset management pays off.

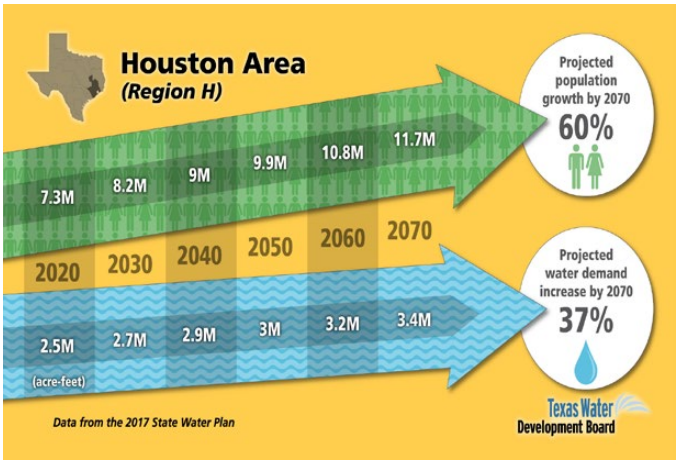
One of the most beneficial, long-term ways to ensure reliable and safe water delivery is through asset management. Asset management can help entities gain a thorough understanding of a system's sustainability, prioritize projects, budget for rehabilitation and repairs, and position a community to better meet customer demands. Operating proactively, rather than reactively, is saving communities money.

Build it with today's dollars.

Communities are taking into consideration the cost of construction today versus a higher cost in the future. Although it may seem like a large expense now, it will still be less expensive today than at a later date. The sooner a water project is started, whether that means initiating small steps or completing a comprehensive expansion, the sooner the benefits of enhanced efficiency and reliability will be realized.

Take advantage of low interest rates.

Tailored financial assistance programs that offer low interest loans through the TWDB can help communities yield generous savings over open market financing options. Since 2015, TWDB has committed more than $8 billion dollars in financing through the State Water Implementation Fund for Texas (SWIFT) for water supply projects across our state.



Invest in our future.

Texas' population is expected to increase 73 percent between 2020 and 2070, and although not all parts of the state will see the same amount of growth, each of the 16 regional water planning areas anticipates a population increase of at least 10

Continued on page 6

BUILDING FOR THE FUTURE...

Continued from page 5

percent. Nine planning areas are expected to grow by more than 50 percent.

A reliable and sustainable water supply is the key to sustaining our existing quality of life and for families to have the water they need for generations to come. An investment in water infrastructure helps keep our communities strong and is an investment in our future.

Contribute to the success of Texas.

For Texas to be successful, all communities need to be successful. Proactive planning and investing at the local level doesn't just benefit one community; it benefits all of Texas and the future generations that will call Texas home.

The future of Texas water depends on our actions today. Over 1,000 people are moving to Texas every day and none of them are bringing any water with them! Every community—rural, urban, large, and small—should take pride in and contribute to our shared goal of developing reliable and sustainable water supplies for all Texans. I applaud the leadership at the West Harris County Regional Water Authority, the City of Houston and all the partners engaged in the Luce Bayou project who have the vision to build for the future and are taking action now!

***Kathleen Jackson** has served as a Board member for the Texas Water Development Board since March 2014. She is a registered professional engineer with a diverse background representing agricultural, environmental, industrial, and wholesale-supply interests. A native of Beaumont, Jackson has three children, sixth-generation Texans, who all reside and work in Texas, and three grandchildren.*

To learn more about TWDB, visit www.twdb.texas.gov.

The Texas Water Development Board's mission is to provide leadership, information, education, and support for planning, financial assistance, and outreach for the conservation and responsible development of water for Texas.

Nobody wakes up and says, "I'm going to waste some water today!"

Yet thousands of a gallons of this finite natural resource are wasted every day through dripping faucets, "running" toilets, unnecessary lawn irrigation, and even just plain carelessness. Let's face it...we've taken our water supplies for granted.

The West Harris County Regional Water Authority is committed to preserving our groundwater resources to enable our aquifers to recharge through the phased conversion to surface water. This challenge will require everyone's commitment to use water wisely, so let's put water-wasting habits to bed!

There are hundreds of things we can do at home to use water more efficiently. Start with an attainable goal. If every family member cut their water consumption by just 5 gallons a day, the savings for a famliy of four would add up to be about 600 gallons in just one month! That's enough water to fill an average size bathtub 12 times!

The water we conserve today can serve us tomorrow!

For a lot of families, the kitchen is the favorite place to gather…especially during the holidays when tempting aromas beckon and there are lots of tasty tidbits to sample. When the scrumptious meals are over; however, bulky "feast" leftovers get scraped into the disposal, flow on into the drain where they begin to accumulate in the pipes, and cause some serious chaos.

Some foods and cooking condiments are potentially more troublesome than others. Discarded substances like cooking oil, bacon grease, mayonnaise, egg shells, and pasta can gather and stagnate in underground plumbing lines and get even nastier when joined by gravy and mashed potatoes. Then, long after the meal is forgotten, the sewer system gets sufficiently blocked to cause a backup inside the house (UGH). Then its the plumber who has to perform costly remedies and repairs.

It is up to the homeowner to make sure that their pipes don't become clogged up with **F.O.G.** – fats, oil and grease. According to the Texas Commission on Environmental Quality (TCEQ), most sewer backups occur between the house and the main sewer lines, where it is the resident's responsibility to correct a problem if this should occur. Globs of grease in the main lines can cause an unpleasant chain of events and mayhem -- like sanitary sewer overflows that can pollute nearby lakes and streams, creating potential health threats for people and wildlife.

Remember, any substance poured onto the ground or into a storm sewer can end up in groundwater. Take the time to dispose of F.O.G. substances properly -- pour cooking oils, lard, and grease into closeable containers for disposal. Or consider mixing them with kitty litter in a zipped-top bag until the oil is absorbed and ready for disposal.

Here are some additional tips from the TCEQ for proper disposal of leftovers and grease!

- Place grease and used cooking oils in covered collection containers. Let them solidify on the counter or in the refrigerator before placing them in the garbage.
- Scrape food scraps into trash cans or garbage bags; minimize the use of the disposal. Non-meat and dairy food items may be placed in a compost pile.
- Remove oil or grease from dishes, pans and griddles by using a rubber spatula or paper towel to absorb it instead of rinsing it down the sink.
- Do NOT pour cooking oil and grease down the drain...ever.
- Overall, be careful what you scrape into the disposal. Once the walls of the pipes begin to clog up, all kinds of discarded scraps can make a bad problem a whole lot worse.
- Don't run hot water over dishes, pans, fryers or griddles to wash oil and grease down the drain.

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REMEMBER DECEMBER 8, 2017? WILL YOU BE READY FOR THE NEXT COLD SNAP OR SNOW?

Over the past decade, the Houston area has experienced some wild weather pendulum swings... ranging from extreme drought to record rainfalls, from sweltering heat waves to sudden snow storms. Most Texans agree with the old saying (sometimes attributed to Mark Twain), *"If you don't like the weather, wait a minute and it'll change."* Being caught unprepared during a prolonged winter freeze, however, can be worse than just an inconvenience. During extended cold snaps, with more than 36 hours of temperatures below 32 degrees, water pipes that pass through outside walls without adequate insulation may begin to freeze, which causes one of the nastiest of household calamities -- broken pipes that allow water to escape and cause major damage.

Drips can spring up in places homeowners didn't even know there were pipes -- like over the hot water heater or along an outside bathrooom wall.

Here are five common-sense things you can do to minimize the risk of pipe damage.

1. Insulate your house. Pay special attention to outside walls where pipes are likely to be located -- near kitchens, bathrooms and laundry rooms -- and add insulation where possible.

2. When temperatures drop below freezing, leave cabinet doors under kitchen and bathroom sinks open for the heat to circulate and help keep the pipes warm.
3. Plan to be away during the winter months? Ask a neighbor or family member to check your house if temperatures take a nose dive. Even if you have taken care of winterizing basics, the spot checks will help make sure nothing goes wrong.
4. Keep pipes from freezing. Wrap outside faucets and all exposed pipes in insulation made for water pipes, or in layers of newspaper, tied around the pipes and covered with duck tape to keep out moisture. Also wrap any interior pipes you can access that are near outside walls (under sinks).
5. Turn off water to the irrigation system at the main valve. It isn't necessary to drain all water out of irrigation components in a climate like Houston because the ground would rarely freeze that deep. Protect above-ground equipment, however. Make sure the main shut off valve for the system and the backflow preventer are "freeze proof".

When extremely cold temperatures linger and there is imminent danger of pipes freezing, let a few inside faucets drip a little, which may waste some water, but can help prevent damage. A little preparation goes a long way to reduce the risk of water pipe damage!

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