

# AQUA<sup>SM</sup>

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October 5, 2023

# Agenda

- Introductions
- Purple Pipe Master Plan
- Drought Update
- Drought Response
- Customer Communications
- Business Growth



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# Purple Pipe Master Plan

# The Importance of Water Reuse

“In aggregate, population growth leads to Texas’ municipal water users potentially facing water shortages almost 15 times larger in 2070 (approximately 3.1 million acre-feet) than in 2020 (approximately 215,000 acre-feet) unless recommended strategies and projects are implemented.” – 2022 State Water Plan, Texas Water Development Board

KXAN KXAN Austin + Follow

**Water reuse in Hill County imperative to combat water scarcity, report says**

Story by Sam Stark • 22h



KTBC

**Greater Edwards Aquifer Alliance highlights more for water reuse: report**

Carissa Lehmkuhl

Wed, September 27, 2023 at 7:00 PM EDT · 3 min read

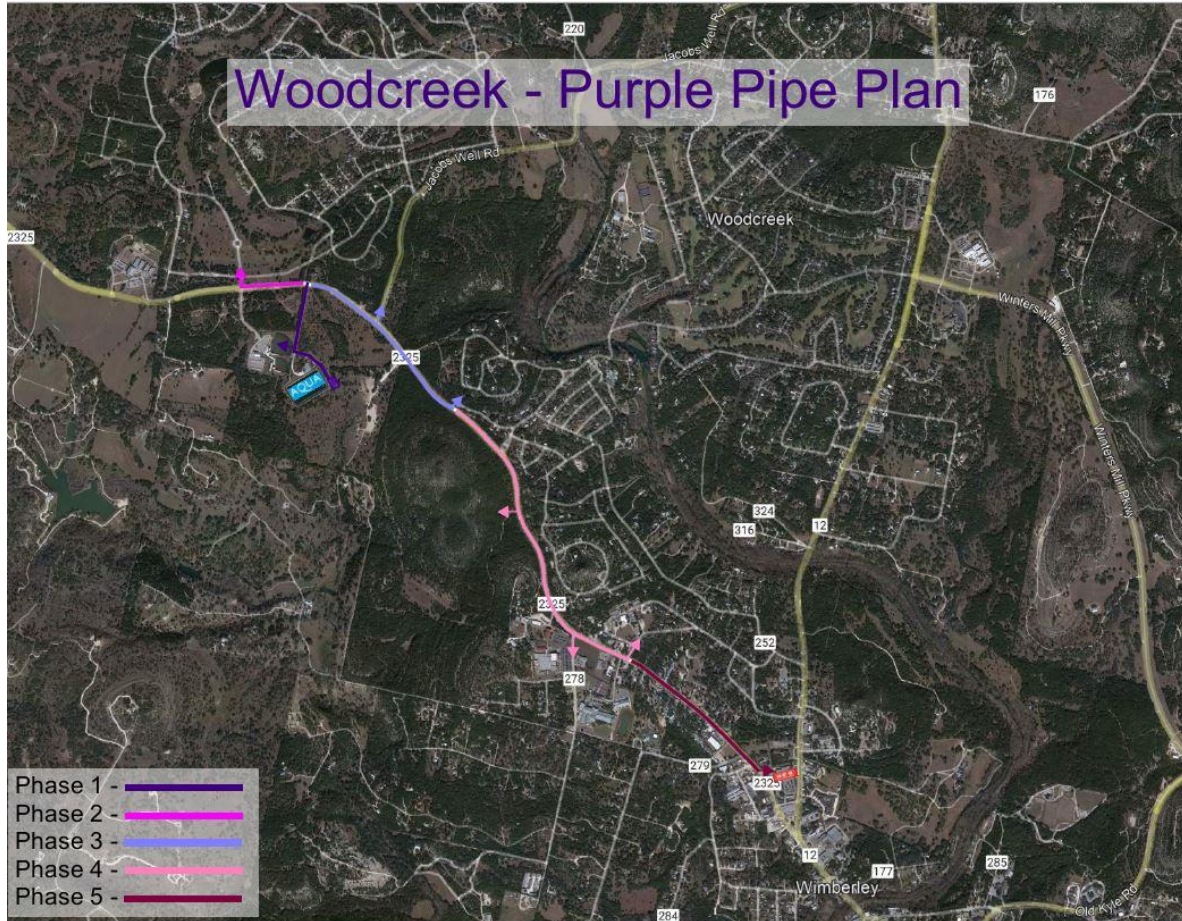
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# Overview of Master Plan



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# Anticipated Cost Estimate

- Phase 1 - \$315,000
- Phase 2 - \$180,000
- Phase 3 - \$525,000
- Phase 4 - \$855,000
- Phase 5 - \$480,000



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# Service to Customers

- 100,000 gpd at WWTP = 3.7-acre inches per day
- 111 acre-inches per month
- If apply 1.5” a week – 18.5 acres watered
- If used ½” per week in the summer per City of Wimberley’s water conservation recommendation – 55.5 acres watered



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# Drought Status



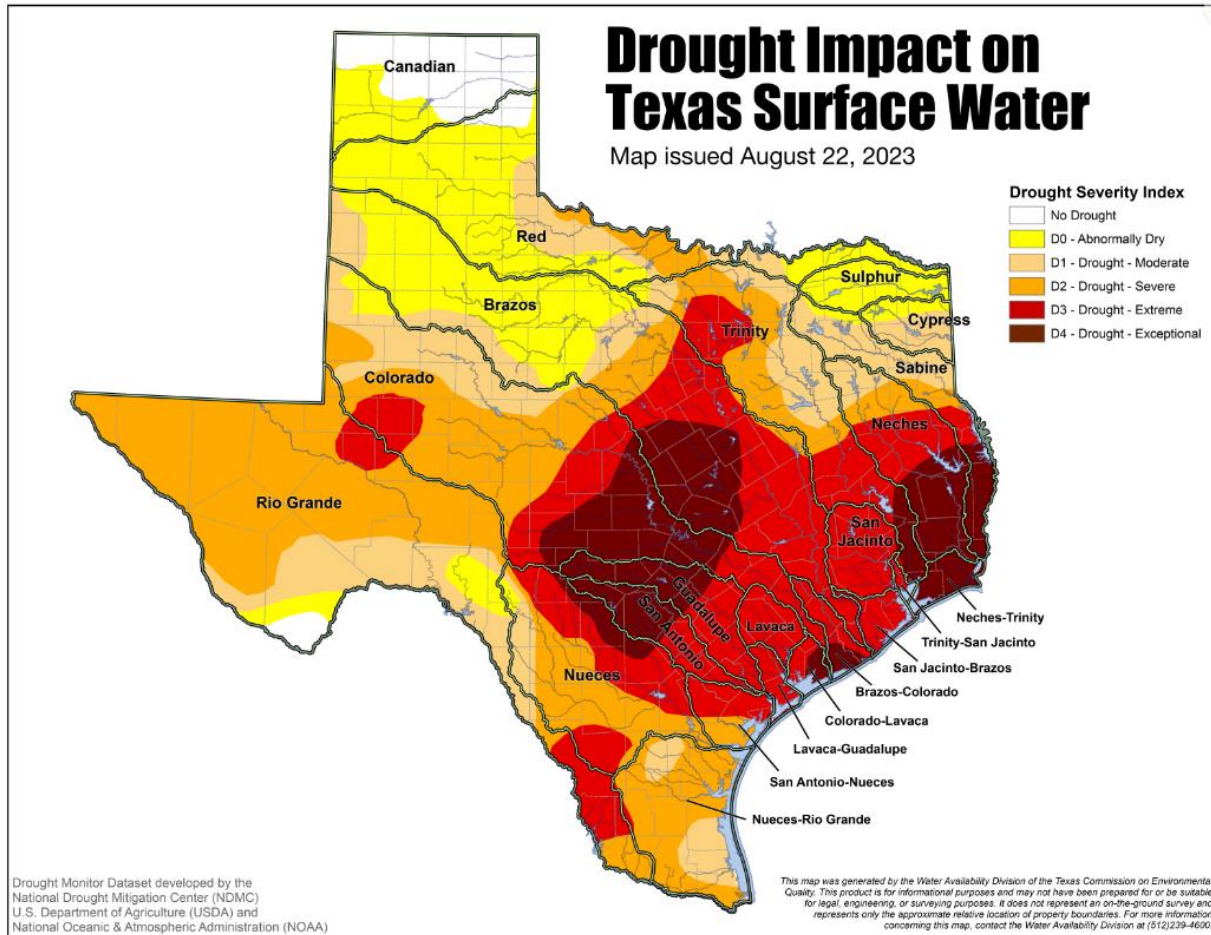
# Current Conditions

- Through September 26, Austin/San Antonio had 85 days over 100°F.
- 45 of those days were consecutive July 8-Aug 21.
- Highest recorded temperature today in 2023 is 110°F on July 17.



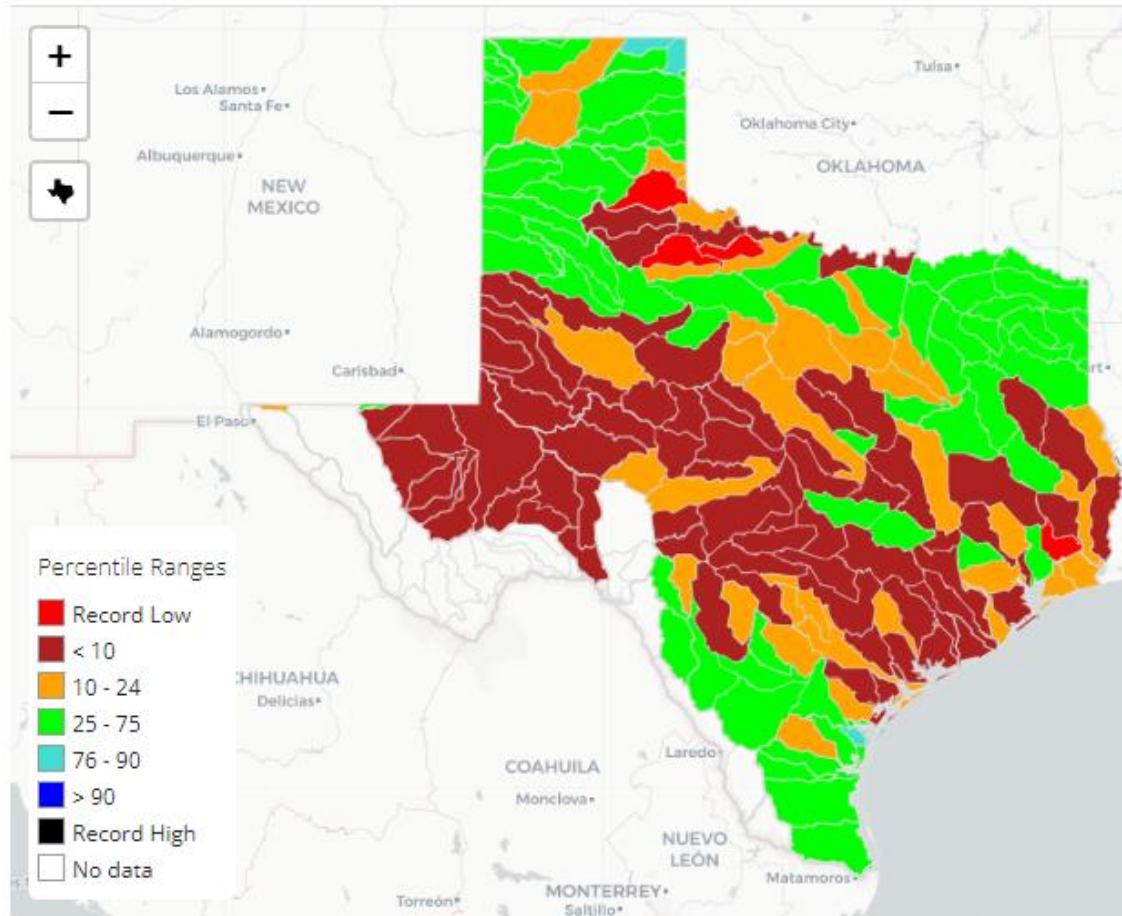
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# Current Conditions



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# USGS Monthly Streamflow Percentiles for August 2023



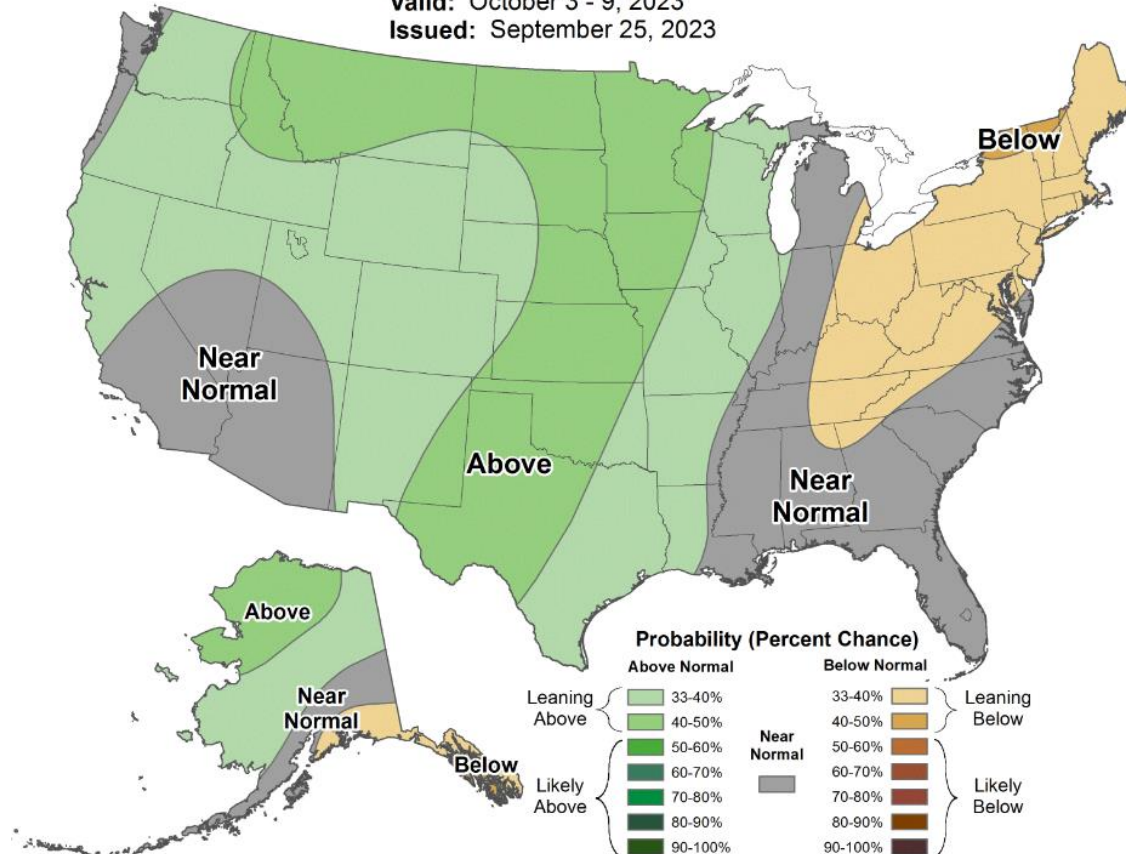
# Current Conditions



## 8-14 Day Precipitation Outlook



Valid: October 3 - 9, 2023  
Issued: September 25, 2023



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# Long Term Outlook

- El Niño is expected to persist.
  - El Niño is anticipated to continue through the Northern Hemisphere winter (with greater than 95% chance through January - March 2024).
  - During El Niño, there's generally more storminess across the southern region of the country. El Niño conditions typically lead to wetter, snowier conditions in Texas and cooler maximum temperatures during the winter.
  - Potential Issues
    - Increased precipitation is not sufficient and provides customers with a false impression
    - Freezing weather and flooding could be an issue at least in some locations over the winter.



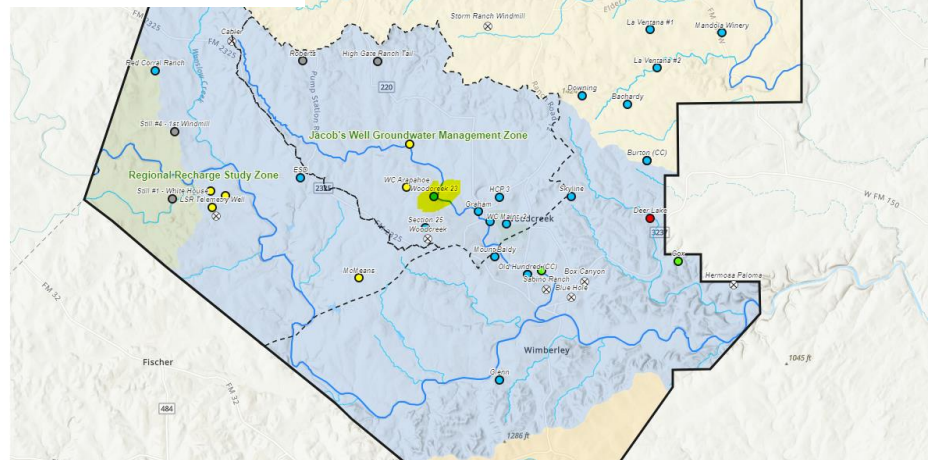
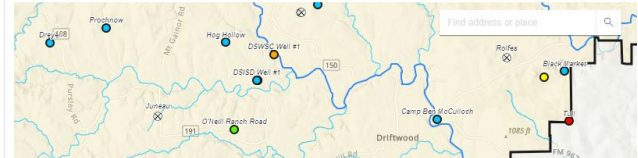
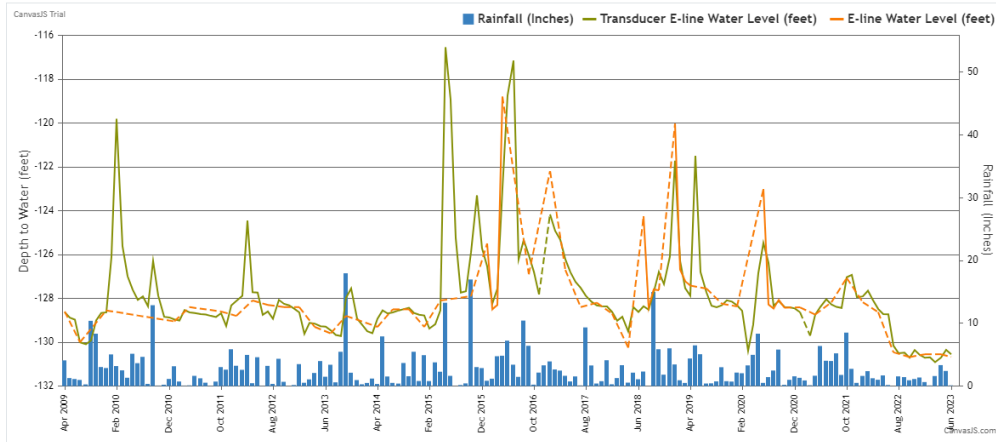
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# Groundwater Levels

## Woodcreek 23

30° 02' 21" NORTH  
98° 08' 37" WEST

Total Well Depth: 284  
Elevation: 1050.35



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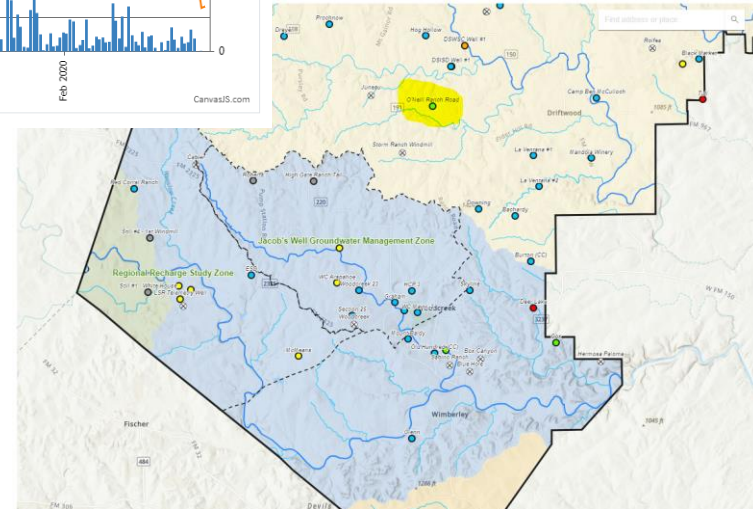
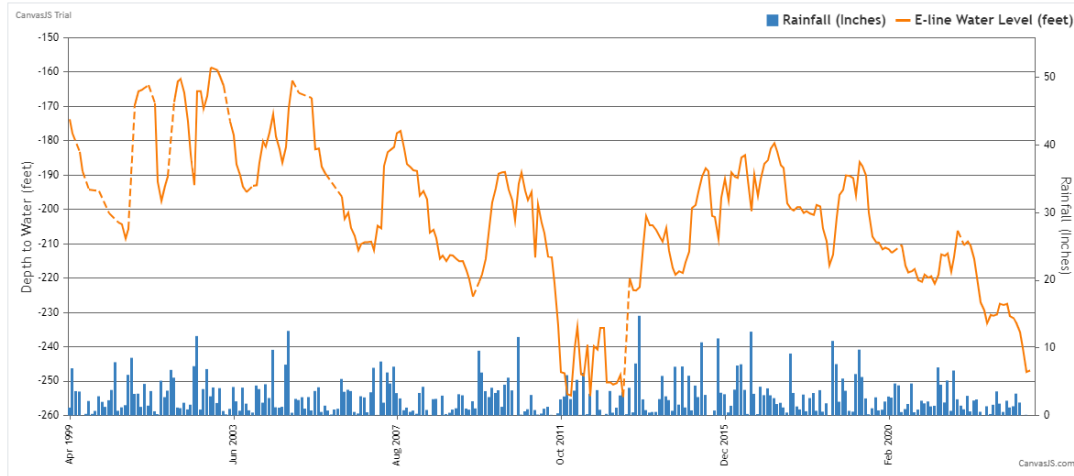


# Groundwater Levels

## O'Neill Ranch Road

30° 07' 33" NORTH  
98° 06' 12" WEST

Total Well Depth:420  
Elevation:1192.59

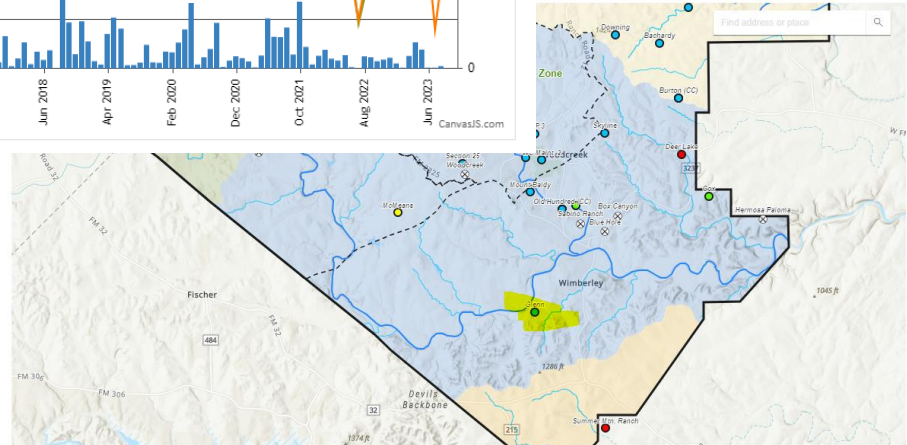
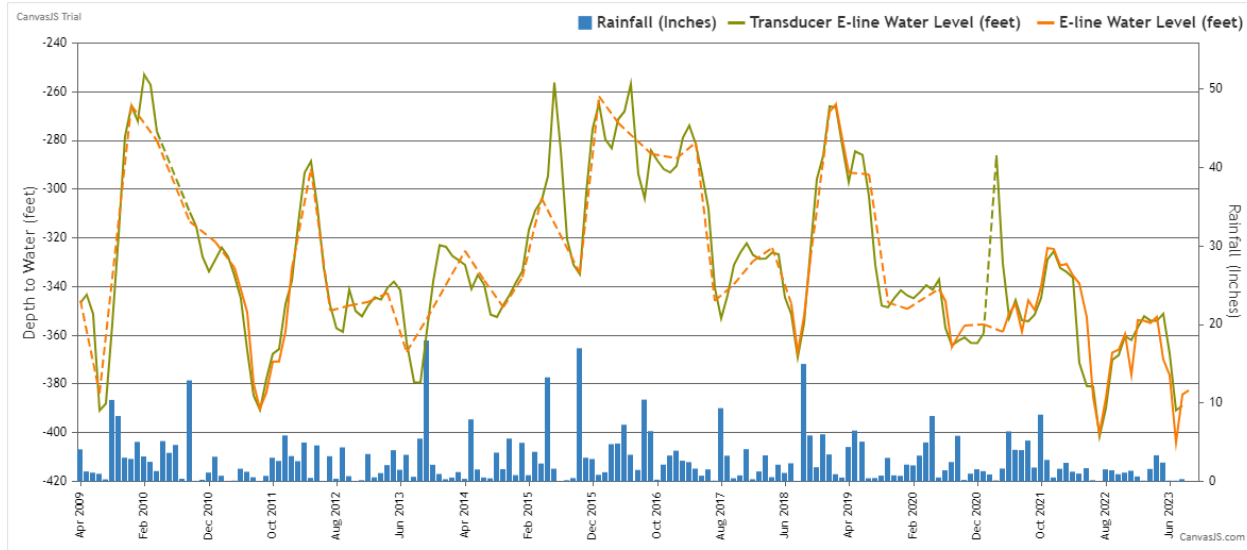


# Groundwater Levels

## Glenn

29° 58' 08" NORTH  
98° 06' 53" WEST

Total Well Depth: 680  
Elevation: 1080.00



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# Current Water Restrictions

PWS ID	Water Systems	Stage of Restriction	Ground Water District	Source Water
TX1050068	Cardinal Valley	Stage 4	Hays Trinity GCD	Groundwater, Trinity
TX1050029	Chaparral	Stage 3	Barton Springs Edwards Aquifer	Groundwater, Edwards and Trinity
TX1050082	Copper Hills	Stage 3	Barton Springs Edwards Aquifer	Groundwater, Edwards and Trinity
TX1050080	Granite Creek	Stage 4	EAA	Groundwater, Edwards
TX1050043	Leisurewoods	Stage 3	Barton Springs Edwards Aquifer	Groundwater, Edwards
TX1050077	Meadow Woods	Stage 4	EAA	Groundwater, Edwards
TX1050111	Mountain Crest	Stage 4	Hays Trinity GCD	Groundwater, Trinity
TX1050100	Oak Meadows	Stage 4	EAA	Groundwater, Edwards
TX1050134	Sierra West	Stage 3	Barton Springs Edwards Aquifer	Groundwater, Middle Trinity
TX1050058	Southwest Territory	Stage 3	Barton Springs Edwards Aquifer	Groundwater, Edwards and Trinity
TX1050037	Woodcreek I	Stage 4	Hays Trinity GCD	Groundwater, Trinity
TX1050039	Woodcreek II	Stage 4	Hays Trinity GCD	Groundwater, Trinity



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# Biggest Challenge



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# Drought Contingency Planning

- Current plan from 2020 and a full review and revision is planned before 2024.
  - Operational triggers (i.e. well run times, tank levels) for restrictions need updating.
  - Communication plans and templates require revision.
    - Need to establish an ongoing irrigation schedule and smart watering practices communication strategy.
  - Excessive use levels for at least stages 3 and 4 need specific criteria developed.
  - More specific criteria are needed for the reduction in restriction level.



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# Drought Response

# Overview of Drought Operations

- Recognize drought.
- Work with Compliance to establish excessive use numbers.
- Provide adequate notification to customers about water restrictions.
- Monitor water usage & pumping numbers.
- Work with customers to bring them into compliance.
- Install restrictor if they continue to ignore drought restrictions.



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# Flow Restrictors

- Flow restrictors are the main enforcement action Aqua can take
  - A restrictor, restricts the flow and pressure so that there is water into the home, but there is not enough pressure to operate a sprinkler system.
  - We install a restrictor after a customer has been identified as an excessive water user.
  - They are left on for at least one billing cycle.



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# Types of Leak Detection Used

- During a drought the ground shifts as soil loses water and shrinks, sometimes causing additional leaks in service lines and mains.
- Acoustical
  - Using listening devices on valves, hydrants, & water meters
- Satellite
  - Using satellite imaging to see possible moist areas
  - Need boots on the ground to locate/pinpoint actual leaks
- Typically, we see leaks in older parts of a water system, due to age of the pipes.



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# Leak Detection

Investigation:	Detection Point/s:	Likely leaking Asset:	Cover:
<b>2 Logans Run Woodcreek 2</b>			
Acoustic AI <input checked="" type="checkbox"/>	Main Valve <input type="checkbox"/>	Main <input type="checkbox"/>	Concrete <input type="checkbox"/>
Surfaced water <input type="checkbox"/>	Curb Stop <input type="checkbox"/>	Service <input type="checkbox"/>	Asphalt <input type="checkbox"/>
other <input checked="" type="checkbox"/>	Meter Stop <input type="checkbox"/>	Utility Side <input type="checkbox"/>	Brick <input type="checkbox"/>
	Hydrant <input checked="" type="checkbox"/>	Customer Side <input type="checkbox"/>	Gravel <input type="checkbox"/>
Estimation of Leak (GPM)	Ground Mic <input type="checkbox"/>	Fittings <input type="checkbox"/>	Soil <input checked="" type="checkbox"/>
4GPM	other <input type="checkbox"/>	Hydrant <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
	Visual <input type="checkbox"/>	Valve <input type="checkbox"/>	Meter pit <input type="checkbox"/>


  

Notes:	Correlation Session IDs: b84g bd9k	Sweep IDs: c8m2 dn82
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to Jacobs Well Community Garden. No Aux Valve visible leak appears to have worsened after operator wor



# Leak Detection

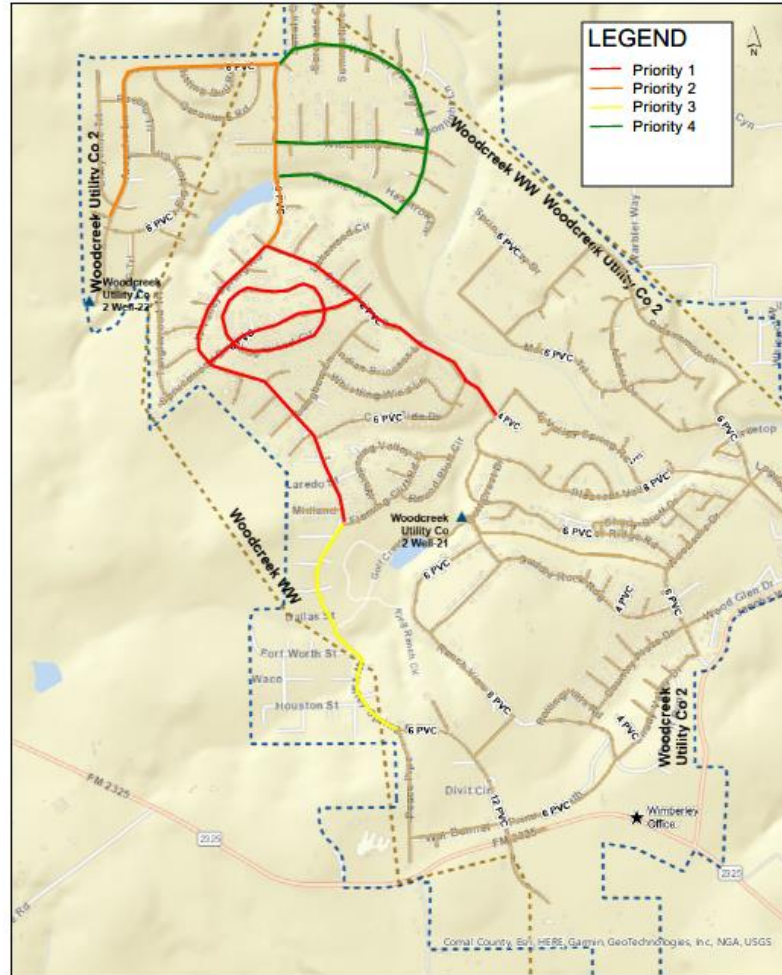
Investigation:	Detection Point/s:	Likely leaking Asset:	Cover:
<b>44 sprucewood across street</b>			
Acoustic AI <input checked="" type="checkbox"/>	Main Valve <input type="checkbox"/>	Main <input checked="" type="checkbox"/>	Concrete <input type="checkbox"/>
Surfaced water <input type="checkbox"/>	Curb Stop <input checked="" type="checkbox"/>	Service <input type="checkbox"/>	Asphalt <input type="checkbox"/>
other <input type="checkbox"/>	Meter Stop <input type="checkbox"/>	Utility Side <input type="checkbox"/>	Brick <input type="checkbox"/>
	Hydrant <input type="checkbox"/>	Customer Side <input type="checkbox"/>	Gravel <input type="checkbox"/>
Estimation of Leak (GPM)	Ground Mic <input checked="" type="checkbox"/>	Fittings <input type="checkbox"/>	Soil <input checked="" type="checkbox"/>
4GPM	other <input type="checkbox"/>	Hydrant <input type="checkbox"/>	Other <input type="checkbox"/>
	Visual <input type="checkbox"/>	Valve <input type="checkbox"/>	Meter pit <input type="checkbox"/>
  			
Notes:	Correlation Session IDs:	Sweep IDs	
	hn3z d3j5	sphv 2v2k	
<p><b>We would have bet money this leak was close to the meter box on Aqua side but all our technology took us down the street to a leak on the main where we marked it up. 88.9 feet from meter pit</b></p>			

# Leak Detection



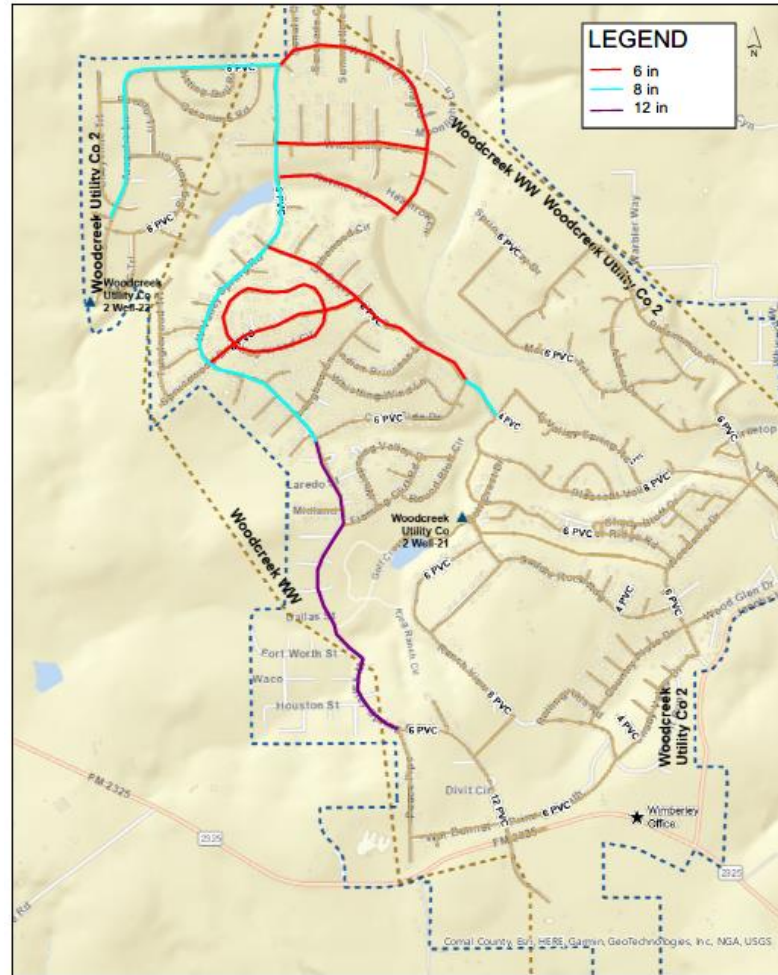
Not all leaks are where we think. We had to dig several feet in each direction to find the actual leak.

# Water Main Replacement Priorities





# Water Main Replacement Diameters





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# Customer Communications

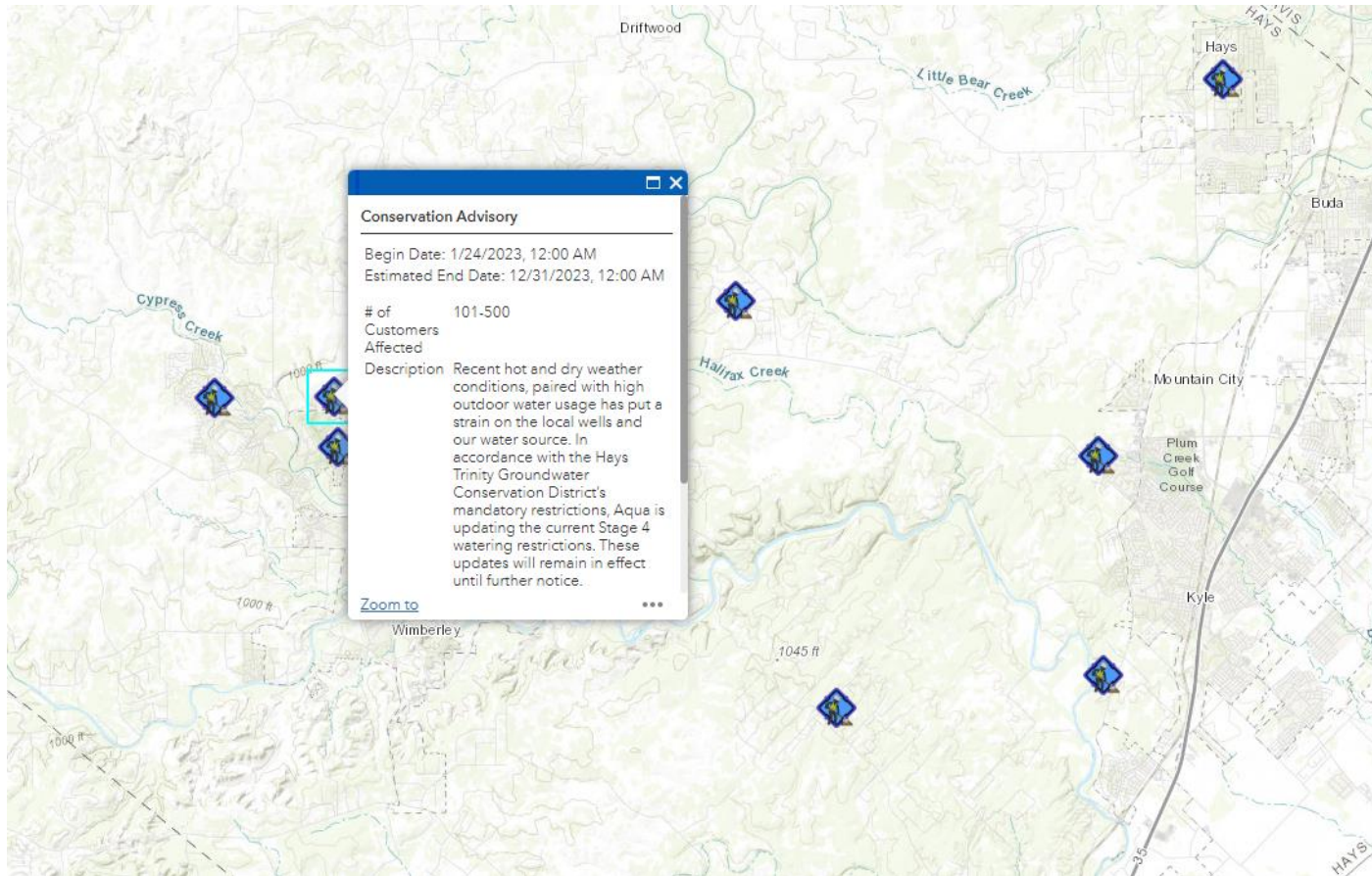
# Drought Communications

- Water restriction notices are mailed out each time we reach a new stage. For example, moving from Stage 2 to Stage 3.
  - In the case of Hays County, the area has been under restrictions consistently since 2022, so a reminder was sent out at the beginning of the year, and then again as we moved through restriction stages.
  - This year we included additional information about indoor and outdoor conservation and xeriscaping.
- Paid social media advertising in targeted areas.
- Conservation reminders were sent out using our WaterSmart Alert system that contacts customers via phone, text message and/or email.
- Drought signs are placed in affected communities with a QR code to the Disruption Map.
- All restrictions are kept current on the Disruption Map for customers to reference.



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# Disruption Map

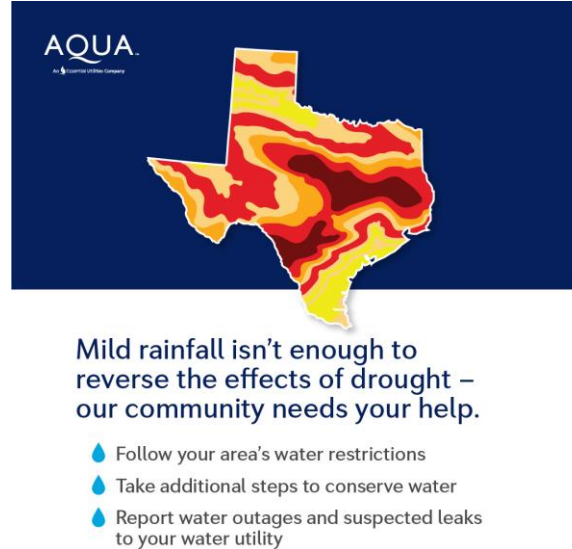


# Paid Social Media Campaigns



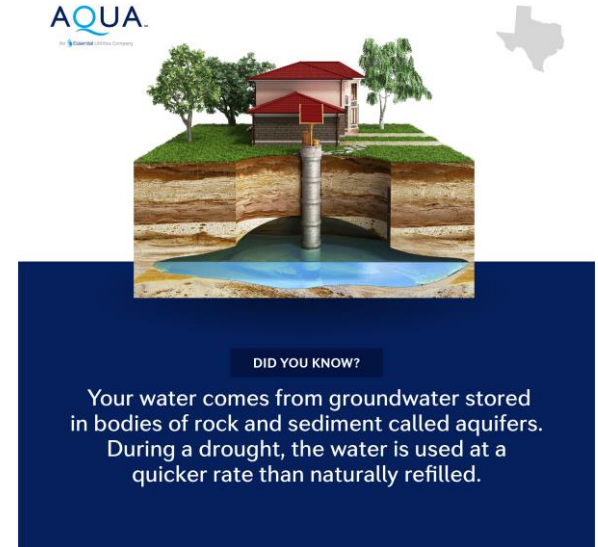
**Our source water is in danger.**

Overuse is draining our resources. We need your cooperation to conserve water and refill the aquifers below our feet.



**Mild rainfall isn't enough to reverse the effects of drought – our community needs your help.**

- Follow your area's water restrictions
- Take additional steps to conserve water
- Report water outages and suspected leaks to your water utility




**DID YOU KNOW?**

Your water comes from groundwater stored in bodies of rock and sediment called aquifers. During a drought, the water is used at a quicker rate than naturally refilled.


Drought messaging began running on social media at the beginning of August, targeting users in Hays County. Ads link to the Texas Water Conservation website.



# Texas Water Conservation Webpage



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Service Alerts | 

Customers Partner With Us All About Water About Aqua [Pay My Bill](#)

## Please Conserve Water

*Texas is Experiencing Severe Drought - Please Help By Conserving Water*

Your cooperation is critical to helping us ensure an adequate water supply as we face prolonged periods of extreme drought.

*Mandatory water restrictions are being implemented throughout the state as we work to maintain an adequate water supply. View current restrictions for your community [here](#).*

## Why is Conservation so Important

At Aqua Texas, we rely on both groundwater and surface water for our water sources, but our communities are using these resources faster than nature can replenish them. Prolonged drought, overconsumption and aging reservoirs are expediting the need to conserve water **now**.

## What You Can Do to Conserve Water

Everyone plays a role in water conservation. The most important thing you can do is follow your community's water use restrictions.

Here are other things you can do to help:

- Kitchen
  - Only run the dishwasher when it's full.
  - Plug the sink or use a wash basin if washing dishes by hand. Don't let the water run.
- Bathroom
  - Turn off the tap while shaving or brushing teeth.
  - Turn off the water while soaping up.
- Laundry Room
  - Wash only full loads of laundry or use the appropriate load size selection on the washing machine.
- Outdoor
  - Use a broom, not a hose, to clean driveways, patios and sidewalks.
  - Avoid watering your lawn or garden in the middle of the day.



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# Ongoing Communications

- Monthly updates sent to the City of Woodcreek and Woodcreek POA Board.
- In-person briefings and meetings are being scheduled to answer customer questions.
- Planning an Open House event for Wimberley-area customers.



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# Future Communications

- More education, earlier in the year around drought, water restrictions, and the importance of following them.
- Video shorts explaining topics like the Disruption Map, groundwater recharge, and how water gets to your home.
- Lunch and Learn events to explain landscaping or xeriscaping amid drought.



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# Business Growth

# Overview of Business Growth Strategy

- Currently limiting service to customers within Aqua TX CCN or adjacent to serve boundary.
  - All requests for service have been directed to the County/City for plat approval before service from Aqua TX.
- Strategizing for sensible growth in the area



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# Requests for Service

- To date, growth we've curtailed:
  - 350+ connection water/wastewater requests for service
  - 320-acre residential development
  - 18-acre residential development
  - Multifamily water/wastewater request for service
  - Lange Rd request for service
  - Comanche Trl. request for service
  - Cadenhead request for service
- Growth is inevitable but there's a way it can be done sensibly.



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# Sensible Growth

- Developers, in conjunction with the City, are interested in water reuse.
- Currently have requests for reuse water.



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# Summary

- We are doing everything we can do reduce our influence on Jacob's Well
  - Aqua has purchased additional land outside the Jacob's Well Management Zone
  - We have results from the pump test. We are putting together a report for the public and plan to have that out shortly.
- We are building a brand-new wastewater treatment plant to be able to treat wastewater for reuse. The reused water would mainly be used for lawn irrigation, so we can save potable water for drinking and home use.
- We are spending more than \$3M to replace underground infrastructure to limit water loss through leaks or broken water mains.
- We have also partnered to implement acoustical leak detection technology to be proactive about water loss.



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