Growing Central Texas preparing for water needs

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For three years, no one has been able to swim in the clear, cool waters of Jacob's Well, a popular artesian spring in Hays County with the second-largest submerged cave in Texas. Suburban cities in Hays, Williamson, Bastrop and Travis counties are trying to find ways to make sure everyone has the water they need. Many of those suburbs rely on at least one of three...

For three years, no one has been able to swim in the clear, cool waters of Jacob's Well, a popular artesian spring in Hays County with the second-largest submerged cave in Texas. That's because the drought and overpumping of the Trinity Aquifer have reduced its flow to a trickle, said David Baker, founder of the nonprofit Watershed Association that is dedicated to water preservation.

"It's sad to see something so beautiful impacted to the point where it's not as vibrant as it was," he said.

Central Texas is among the fastest-growing places in the country. Along with the growing population, water-intensive businesses in Central Texas such as artificial intelligence, data centers and semiconductor manufacturing plants also are booming. Suburban cities in Hays, Williamson, Bastrop and Travis counties are trying to find ways to make sure everyone has the water they need.

Many of those suburbs rely on at least one of three aquifers in Central Texas — the Trinity, Carrizo-Wilcox and the Edwards — along with Lake Travis and other area lakes for their water. At least one city official said their town will run out of water for new development in a few years if no new sources are developed. Other officials say they have their cities' water needs met until 2040 or 2050.

But some water experts, such as groundwater conservation managers and geologists, say they have doubts about promising residents water very far into the future.

One water district in Hays County has "no expectation" that the Trinity Aquifer can sustain the growth the county is experiencing in the long term, said Charlie Flatten, its general manager.

"Projections show that by 2036, Hays Trinity Groundwater Conservation District allocations will have reached the limit of the total available groundwater as modeled by the Texas Water Development Board," Flatten said. "Diversification of our supplies will require a long-term effort

by local and state leadership to secure and deliver water."

The western Williamson County town of Liberty Hill, which relies on water from Lake Travis and the Trinity Aquifer, could run out of water for new development in a few years if it doesn't make plans to acquire more sources, said Zach Stein, a water resource project manager at HDR Engineering, during a City Council meeting in February. "The city needs to develop more than five times the current water supply volume by 2050," Stein said.

Stein said Liberty Hill's population of about 12,000 is predicted to grow by 12% annually for the next 10 years.

City Manager Paul Brandenburg said the city has enough water to meet its current needs. "We are not going to run out of water; we just won't have additional water for new customers if we do nothing," he said.

The city's long-term plans for future water sources include turning treated wastewater into potable water and partnering with other agencies for additional groundwater resources, Brandenburg said.

Conservation districts

Groundwater conservation districts, such as the Hays Trinity district, are allowed to regulate the water pumped from the ground, except for domestic and livestock wells that produce less than 25,000 gallons per day.

Groundwater conservation districts are created by the Legislature or the Texas Commission on Environmental Quality through a local petition process. The districts, which cover 70% of the state, can include cities and more than one county. Hays, Travis and Bastrop counties all have groundwater conservation districts. Williamson County does not.

Rural landowners in western Williamson County have formed the Aquifer Conservation Alliance because they are concerned about their wells in the Trinity Aquifer going dry. They are advocating for the creation of a groundwater conservation district in the county.

Running out of water also is a concern for some rural residents in Bastrop County, where some private well pumps into the Carrizo-Wilcox Aquifer have had to be lowered because of overpumping outside the county, said Jim Totten, general manager of the Lost Pines Groundwater Conservation District.

Under the state's rule of capture, people who don't live in groundwater conservation districts are allowed to pump as much water as they want from their property, even at the risk of causing neighbors' wells to go dry. Private property owners also are allowed, under Texas law, to build dams or reservoirs on their land with up to 200 acre-feet of storage for livestock, fish and wildlife purposes without getting a permit from the TCEQ.

"Texas' ever-growing thirst and the complex laws, regulations, and legal precedents that govern groundwater pumping in Texas all but ensure that for many places groundwater pumping debits will increase over time (at least until such time as some other source of water can meet the needs of the state)," Justin Thompson, an assistant research professor at the University of Texas

Bureau of Economic Geology, said in an email.

Searching for options

Cities in Central Texas already emphasize water conservation with restrictions on irrigation systems for lawns because outdoor watering makes up more than half of the water demand during the state's long, hot summers.

The state has a five-year water plan spanning 16 regional areas to address the needs of all users based on conditions similar to the drought of record in the 1950s. All of Travis and Bastrop counties as well as parts of Williamson and Hays counties are included in a 14-county area known as Region K. A new draft report for Region K is expected to be available in March.

In his State of the State address in February, Gov. Greg Abbott said Texas needs to rebuild its water supply structure to harness more sources of water and to modernize delivery. State Sen. Charles Perry, R-Lubbock, is proposing the Legislature approve more money to address water shortages and to jump-start water development.

To maintain its economic growth, the state needs to invest $154 billion over the next 50 years in new water supplies and repairs to aging infrastructure, according to a study by the Texas 2036 think tank. The nonprofit is asking state lawmakers to add $5 billion this year to the Texas Water Fund and to approve a $1 billion per year revenue dedication toward the fund, said Jeremy Mazur, the nonprofit's director of infrastructure and natural resources policy.

Voters authorized the state to create the Texas Water Fund in 2023 with $1 billion to pay for projects involving water conservation, new water supplies, water loss mitigation and infrastructure projects.

The Lower Colorado River Authority is taking conservation measures with Lake Travis because of the drought. The agency is expected to move to stage 2 of its drought response in March, limiting customers to outdoor lawn watering once per week, spokeswoman Clara Tuma said.

The LCRA water operations committee met in November to hear a staff briefing about active water supply projects and ongoing planning to support conservation and new future water supply projects.

One option to provide more water to the high-growth area between the Highland Lakes and Bastrop County includes creating reservoirs in Bastrop, Fayette and Colorado counties with intakes on the Colorado River. Pipelines from the reservoirs could carry water to Travis County. Other options include piping groundwater from East Texas or desalinating seawater from the Gulf.

The LCRA also is building a new reservoir, the Arbuckle Reservoir, downstream of the Highland Lakes in Wharton County. The reservoir is meant to help reduce but not eliminate the amount of water released from the Highland Lakes to serve downstream demands of industrial and agricultural customers, according to the LCRA.

Shannon Hamilton, executive director of the Central Texas Water Coalition, said the money the state could set aside for water infrastructure might take as long as 10 years to show results.

"Until we get new water online, we need to figure out how to make it from now until then," she said. The coalition wants a water plan to be more protective of Lake Travis, she said.

Some cities not worried

Some officials are optimistic about water supplies in their areas. The Brazos River Authority, which supplies the city of Taylor in eastern Williamson County with water from Granger Lake, has drilled a 3,000-foot well into the Trinity Aquifer, said Brad Brunett, a manager with the river authority. It plans to blend water from the aquifer and from the lake to increase the city's supply starting late this year, he said.

"We've got enough raw water to take care of our customers through 2050," said Brunett. He said the river authority also plans to expand treatment plant capacity and is testing to see if storing excess lake water in the Trinity Aquifer for future use during hotter weather will work.

Also, the Taylor Economic Development Corp. is paying for a study to evaluate alternatives to provide 2 million to 4 million gallons of water per day to the eastern side of the city, said Ben White, the corporation's director.

Samsung, a South Korean company building a $17 billion semiconductor plant in southwestern Taylor, eventually plans to receive water from the Carrizo-Wilcox Aquifer through a 25-mile pipeline from Milam County. Samsung spokeswoman Michele Glaze declined to comment on how much water the plant will need when it begins operating. The company has a target of using 30% recycled water as well as using water conservation and restoration strategies, Glaze said.

Bastrop's water supply comes from the Simsboro Aquifer, which is part of the Carrizo-Wilcox Aquifer, and the alluvial area around the Colorado River. By the middle of March, the city will begin receiving water from four new wells drilled into the aquifer, said Curtis Hancock, the city's utility director. "The production is so good that it's setting the city up (with enough water) for 25-plus years," Hancock said.

The city of Smithville in Bastrop County is in good shape with its water supply, said Edward Balusek, the city's public works director. The city gets its water from the Carrizo-Wilco Aquifer and has no plans to expand its water supply. "Capacity is adequate to sustain current and future growth," he said.

The city of Elgin also draws water from the Carrizo-Wilcox Aquifer. "Current water usage math tells us that the city and/or its service area can more than triple in size from where it is today before we would be in danger of not having enough water," City Manager Thomas Mattis said.

The Georgetown Water Utility gets its water from Lake Georgetown, Lake Stillhouse, Lake Belton and Lake Travis, along with wells drilled into the Edwards Aquifer.

The Georgetown City Council has made a reservation agreement with the EPCOR water utility company to buy up to 32.5 million gallons per day of water from the Carrizo-Wilcox Aquifer from 2030 to 2050, with the ability to purchase 30 million gallons per day more with additional permitting. The water will be piped west from Robertson County to Williamson County.

The Lost Pines Groundwater Conservation District, which includes all of Bastrop County,

regulates water pumped from the Carrizo-Wilcox Aquifer. The water level in some of the wells is slowly going down, Totten said.

"At this point the biggest challenge we deal with in Lost Pines is the impact of production from other counties," he said. Wells near Bastrop County's borders can deplete part of the county's water supply, he said.

How cities and towns are coping

Other cities are relying on the Carrizo-Wilcox Aquifer as well as Lake Travis and the Edwards Aquifer. The city of Austin gets its water from Lake Travis, Lake Austin and the waters of the Edwards Aquifer that flow into the Colorado River.

Pflugerville relies on water from the Colorado River and the Edwards Aquifer. It is taking steps to double its water rights contract with the LCRA to secure additional water from the Colorado River, city spokesman Felipe Romero said. "The city's water supplies have been secured to support growth until at least 2040," he said.

Round Rock gets its water not only from Lake Travis but from the Edwards Aquifer, Lake Georgetown and Stillhouse Hollow Lake. It is part of the three-city Brushy Creek Regional Utility Authority project to bring more water from Lake Travis by summer 2027. The project includes a deep-water intake in the lake, a raw water tunnel and a pump station. City officials said that because the intake is so deep, the project is not affected by the drought. By 2050, the demand for water in Round Rock will almost exceed the supply, said Michael Thane, the city's executive director of public works.

Cedar Park receives all its water from Lake Travis. It also is part of the Brushy Creek Regional Utility Authority project to bring more water from the lake. The city has enough water to support it when all its land is developed, which is estimated to be around 2045, city spokeswoman Fran Irwin said.

Leander receives all its water from Lake Travis and is part of the Brushy Creek Regional Utility Authority project. The city plans to increase its water supply through its LCRA contract from 24,000 acre-feet per year to 31,000 acre-feet per year, city spokesman Ty Meighan said.

Bee Cave receives its water from Lake Austin through the West Travis County Public Utility Agency. "We currently have enough water (from the LCRA and Lake Austin) to serve the projected growth through 2034 with our water treatment plant expansion," said Jennifer Riechers, the utility's general manager.

Lakeway also depends on Lake Travis for water. The Lakeway Municipal Utility District, which provides 60% to 70% of the water for the city, is not in danger of running out of water any time soon, said Earl Foster, the district's general manager. He said the district was able to get water when the lake was as low as 617 feet during the 2011 drought. He said the district is working with the LCRA on future water supplies.

Lago Vista gets its water from Lake Travis. The lake levels would have to drop "well below the historical drought of record before it negatively impacts our system," interim City Manager Taylor

Whichard said. The historic drought of record was in 1951 when Lake Travis was at 614 feet.

Jonestown also receives all its water from Lake Travis. The lake level would have to drop to 610 feet to affect the city's water supply, said John Tichi, general manager of the Jonestown Water Supply Corp. The agency is negotiating with the LCRA to increase its annual acre-foot allotment up to 2,000 acre-feet per year, which could sustain the city until 2080, depending on growth, Tichi said.