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TEXAS IN DROUGHT WATER SUPPLY

WHEN THE WATER RUNS DRY

In lieu of another 'rain bomb,' water planners say Central Texas should prepare for the worst.

By **Marty Toohey** MTOOHEY@STATESMAN.COM

Drought in Central Texas rarely ends with the arrival of the slow, soaking rains we've seen at times this year. Drought here is usually washed away by a "rain bomb," the kind often dropped when the tendrils of a coastal storm reaches into the Hill Country and sends water coursing into the region's massive reservoirs.

No one likes the idea of praying for a hurricane. But as the current drought nears the worst on record, a question usually uttered only in jest is increasingly on the lips of those monitoring the region's water supplies: How long before we need a hurricane?

The alternative is sobering. Some water officials say the region should be preparing as if the reservoirs could run dry in less than three years without drastic measures. Though such a situation is unlikely, more favorable scenarios show the lakes drying up as soon as 2018 without major changes — and historical evidence suggests the drought could conceivably last that long.

"We should plan for the worst and hope for a better scenario," Greg Meszaros, director of the Austin Water Utility, told the Austin City Council on Thursday.

It was the first time in a high-visibility setting that public officials seriously addressed the possibility of the lakes drying up.

Afterward the Lower Colorado River Authority, which manages the reservoirs and sells water to much of Central Texas, said it does not "anticipate any scenario under which LCRA would not be able to meet the essential needs of our customers for water." But a recent LCRA assessment states that the region is on the verge of "an emergency condition" and that more than 40 cities and water districts it supplies "are already in some form of drought restriction and are at risk of water supply shortages."

Opinions differ about what can and should be done. A full-throated regional discussion has yet to really begin. Most solutions are expensive. And there is disagreement about matters as simple as how much Central Texas can rely on conservation and how much more water the fast-growing region might need to secure.

"This will not be easy," said Mitch Fuller, a Cedar Park City Council member, president of the Brushy Creek Regional Utility Authority and chairman of the LCRA's Central Basin Council. "I think it's important to ask our citizens to use water responsibly. I think we need additional water supply. We need to streamline the government process for getting projects approved. And we all have to work together on this."

'An imminent threat'

Frank Harren is a commercial Realtor by trade, a math major by education and, lately, a particularly fussy member of the LCRA's Austin-area advisory council. For more than a year, he has been trying to call attention to the condition of lakes Buchanan and Travis, the region's main water supply and the possibility the drought could suck them dry. Until recently, he has been shouting into the wind.

"Austin is at risk because of its inadequate water supply," Harren said, looking out from the deck of the Oasis restaurant, which offers a view of the Sometimes Islands. The islands are usually hidden under the water of Lake Travis but now rise above, nearly spanning the lake's entire width.

"We should start calling them the Sometimes Peninsula," Harren said, before returning to the subject at hand. "Our economy, our reputation — my job, your job — they're all risk."

Even the recent rains have done little to help, Harren noted. In mid-September lakes Travis and Buchanan, the region's main reservoirs, were 31 percent full. They are now 33 percent full. That bought a little time; the LCRA had been projecting the lakes would drop below 30 percent in September or October, the lowest level on record. Now, the LCRA is forecasting the lakes will hit that point in November or December.

On Sept. 26, the authority sent a letter to state environmental regulators asking for an exemption to rules requiring the release of water to maintain Matagorda Bay's health. In the application, LCRA officials say the soon-to-be-reached "drought of record" mark is "an emergency condition" that "should be avoided if at all possible."

Water planning is a process usually measured in decades, not years. According to the letter, if the pace of Central Texas communities' efforts to stretch their water supplies does not accelerate, they will not keep pace with dwindling lake levels. Ultimately, the letter said, "the current drought presents an imminent threat to public health and safety."

'Megadroughts'

Someday, the drought will break, of course.

It could even break soon. In 2007, after a dry stretch that left Buchanan and Travis about half-full, a series of deluges filled them up, capped by a June "rain bomb" that dropped 19 inches on Marble Falls in less than a day. In a relatively short span, the region went from drought to a day of 32 water rescues, residents taking shelter in a middle school and the lakes rising to 120 percent of their capacity.

The region next settled into what became the most intense dry spell then on record. And that in turn was followed by a wet period that started in October 2009 with Tropical Storm Rick and almost completely refilled Buchanan and Travis.

Drought is cyclical. Even the hardest drought in living memory, the epic one that stretched from the late 1940s to the late 1950s and caused an estimated \$22 billion in today's dollars in economic losses across Texas, eventually broke.

That drought was so intense it was seared into the memories of the state's policymakers and water managers. It became the basis for drought-management planning across the state. The LCRA and other water planners essentially concluded Central Texas needed to prepare for a drought equal to what it experienced in the 1950s.

By some measures, today's drought, which most researchers say began in late 2010, is already worse. When it has rained, rain fell in the wrong spots to flow into the lakes. The region in the 60 months leading up to August has seen a record low amount of water flowing into the lakes. The ground has grown so parched and carpeted with grasses that it is now soaking up much of the rainfall that normally would flow into the lakes.

On Sept. 19 and 20, up to 7 inches fell in some places in the lakes' watershed, which added back about 1.2 percent of the lakes' capacity. It should have added more — in March 2007, a storm that dropped about 40 percent less rain added nearly four times as much water to Buchanan and Travis, according to the LCRA's letter to state regulators.

Historical evidence suggests things could get worse.

A team of researchers from the universities of Texas and Arkansas studied tree-ring samples in Texas looking for clues about drought patterns. In a 2011 article published in the Texas Water Journal, they wrote that at least one dry spell as bad as the drought of record hit the state every century. And since A.D. 800, the Southwest has weathered "at least four megadroughts 15- to 30-years long centered in central or northern Mexico."

"Current use by water planners of the 1950s drought as a worst-case scenario, therefore, is questionable," the team concludes. "When water managers consider past droughts, population growth, and climate change, it becomes highly probable that the future poses unprecedented challenges."

'What if?'

Then there's this: A lot more people rely on the lakes than in the 1950s.

Travis and Buchanan are part of a chain of six Central Texas lakes built in the 1930s and 1940s by damming the Colorado River. In the 1950s, the 655 billion gallons of water Buchanan and Travis can hold combined served a Central Texas that consisted mainly of the sleepy Austin of yesteryear and the farming communities around it. At the time, Austin had about 133,000 residents. Austin has 843,000 residents today, plus a potent economy that relies on water-intensive industries such as semiconductor manufacturing.

"What if we're only halfway through the drought now?" Meszaros said recently. "Should we risk our economy hoping we're not?"

There's a fair amount of guesswork in any answer. How hot will it be in the coming months? How will those temperatures affect evaporation, which typically claims as much water each year as all of Austin consumes? How

much rain will fall? Will it fall in the parts of the Hill Country that run into Buchanan and Travis? How much more can the region cut back?

In 2011, with the memory of a full Lake Travis still fresh, LCRA officials released 141 billion gallons of water in Buchanan and Travis to rice farmers along the Texas coast, as the state-approved water-management plan called for. The LCRA board then decided to cut off the rice farmers until the drought breaks

— the first time the LCRA has taken such a measure

— leaving Central Texas the main draw on the lakes since late 2011.

After nearly a full summer with Central Texas the main consumer of lake water, the lakes were 44 percent full in late August 2012. A year later they were 32 percent full, having lost 76.2 billion gallons.

The furthest-out projection the LCRA has published suggests lake levels will dip as low as 25 percent by March. Austin officials say it's now time to start operating as if the worst could become reality. That, according to the city, is the ground still soaking up much of what falls and the lakes drying up as soon as 2016.

"Because the drought has been so severe, we may actually be operating at a deficit," said Ross Crow, a city water-use attorney. "We may have to make it up before we really start seeing full benefits of rain for the lakes."

'A gully washer'

Joe Beal, the general manager of the LCRA from 1999 to 2007, had a saying he was particularly fond of. Much of Central Texas is supplied by the seemingly limitless bounty of the Colorado River. But population growth would eventually leave the region with a system that, as Beal would say, is "designed to suck mud until you get a gully washer."

Beal thought Central Texas needed to supplement that system. To that end, he called for aggressive conservation measures and spearheaded what was to be a \$1.5 billion push for new reservoirs that would function as a buffer during drought. The LCRA would finance the plan with money from the city of San Antonio, which would be buying the right to dip a straw into the Colorado River.

On balance, Central Texas would come out significantly ahead during drought, according to LCRA projections at the time.

But Beal retired in 2008. His successor, Tom Mason, a lawyer with an environmental background and a steadfast belief in the power of conservation, concluded the LCRA-San Antonio deal was unsustainable and based on flawed projections. The Colorado River basin would need as much as 25 percent more water than previously estimated, according to his staff's new estimates, which, though at odds with state projections, led him to conclude that the region could not part with the water San Antonio would be claiming.

Mason scuttled the deal. To extricate itself, the LCRA eventually agreed to pay San Antonio a \$30 million settlement.

Mason's successor, Becky Motal, has charted a middle course through a difficult time. The LCRA now is planning a \$203 million reservoir near the coast and is trying to add 32.5 billion gallons of annual groundwater supply. But the authority is financially strapped: It is losing 10 of the 43 customers that buy the electricity it generates, which subsidizes the water operations. That lost revenue has already led the organization to shed more than 300 jobs.

Lake interests also have been assailing Motal, who is retiring at the end of the year, for the LCRA's handling of the area's water supply. Her supporters say the authority followed its state-approved plan and, when that became untenable, changed course more nimbly and navigated politically turbulent waters more skillfully than such massive organizations usually do. Her response to managing the drought has been straightforward: "A drought is a disaster happening in slow motion." There is, she said, only so much anyone can do to prepare for a natural disaster.

She has been equally straightforward about the overall picture: "We will not run out of water."

Austin officials are not as certain.

'It takes a while'

In late August, the city hired a consulting firm to seek out new sources of water, an unusual step for a city in which politicians often jockey for the mantle of most conservation-minded. It is also remarkable because, in the

late 1990s, the city and the LCRA signed a contract that guarantees Austin up to double what it now uses, an amount expected to carry the city to 2100. But Austin cannot drink what is not there.

Conservation will help. When the drought of record is declared, the LCRA will require all cities, power plants and other customers to cut back 20 percent. But overall demand may not drop 20 percent. Cedar Park's efforts have left it about four-fifths of the way to meeting the requirement, said Fuller, the council member. Austin largely will be exempted from the requirement because of conservation measures it put in place in recent years. The city's doomsday projections already take into account the region's 20 percent cutback.

The consultants have just started their work. But ideas already are percolating:

•**More conservation:** Mason, who is now chairman of the Texas Water Foundation, a nonprofit education group, is urging voters to support the state's \$2 billion November ballot package, about 20 percent of which will go to conservation projects. He also is pushing conservation. Communities such as Tuscon, Ariz.; Albuquerque, N.M.; and even San Antonio are meeting their needs through aggressive conservation measures. Some of those, such as water reuse, require substantial investment.

•**Groundwater:** Beal is working on the supply side of the equation — selling groundwater in the Bastrop County area to cities in need of water. The Carrizo-Wilcox Aquifer has an ample supply. The LCRA, as part of a strategy to add 100,000 acre-feet of supply, is seeking permission from the local groundwater-management district to pump 10,000 acre-feet of water a year to use at its Lost Pines Power Park in Bastrop County. But the deal has been bogged down by that area's politics.

Harren, the LCRA's Austin-area advisory council member, wants officials to look into the possibility of a coastal desalination plant. The cost of a plant to serve Central Texas has not been calculated and would likely include the substantial expense of piping the water from Matagorda Bay.

Fuller said virtually every idea left is difficult. Of groundwater, he said, "it's expensive." New equipment could be necessary to avoid being left high and dry, as Cedar Park and Leander decided when they bought an \$11 million barge in preparation for when the intake on which they now rely starts sucking mud. Conservation measures unlike any the region has seen are being contemplated. "We may need to tell people to stop watering their lawns."

Only by fully acknowledging the extent of the situation, he said, can the region avoid having solutions tangled stall.

"The problem with water infrastructure," state climatologist John Nielson-Gammon wrote recently on his blog, "is that it takes a while to build. It works great during the next drought... but it doesn't solve the short-term problem."

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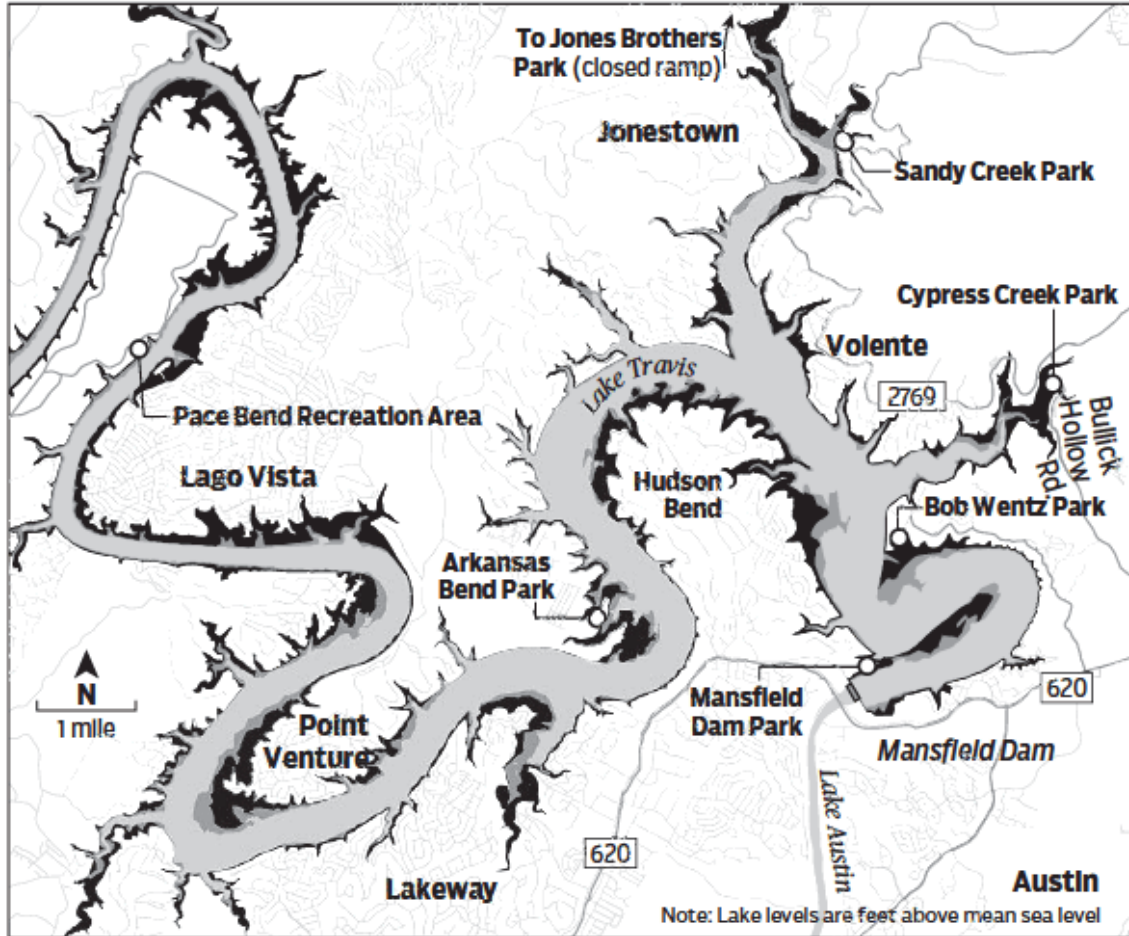
»See more photos with this story at mystatesman.com.



Sailboats rest on the ground Thursday in a shrinking cove at Lake Travis. By some measures, today's drought, which began in late 2010, is already worse than the drought of record from the late 1940s to the late 1950s, researchers say. The ground is so parched, it soaks up much of the rainfall that would normally flow into the lakes. JAYJANNER / AMERICAN-STATESMAN

Lake Travis' dwindling water level

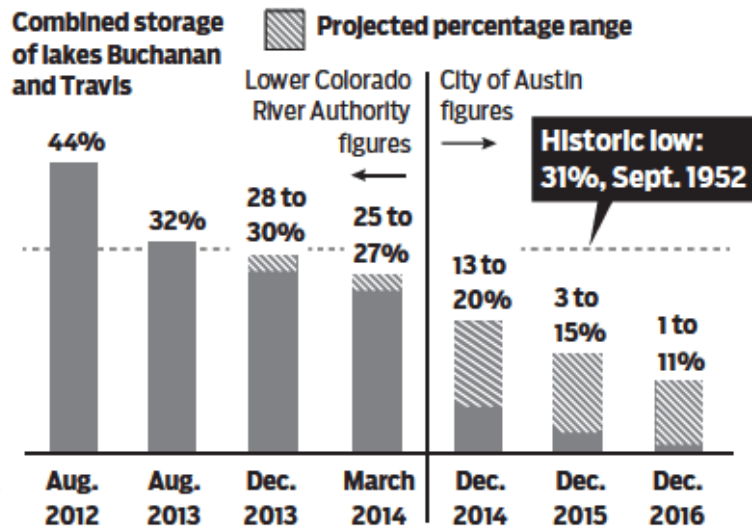
Lake when full at 681 feet
 Lake at 640 feet (Summer 2012)
 Lake at 620 feet (current level 620.94 feet)
 All public boat ramps closed



Shrinking lake reserves

Lakes Buchanan and Travis are expected to hit record lows by the end of the year. The city says the region should begin preparing as if they could run dry as soon as 2016.

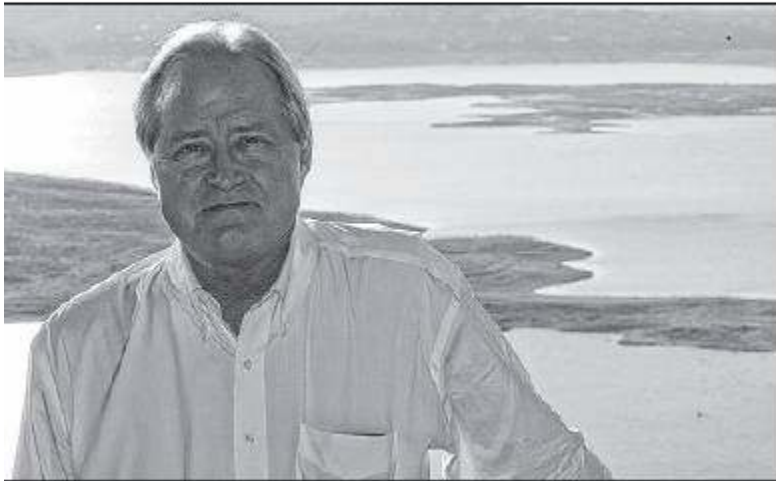
Source: Lower Colorado River Authority, City of Austin



LINDA SCOTT, ROBERTO VILLALPANDO, ROBERT CALZADA / STAFF



A downtown Austin business uses an irrigation system to water at night. Conservation measures unlike any the region has seen are being contemplated. "We may need to tell people to stop watering their lawns," says Mitch Fuller, an LCRA official. LAURA SKELDING / AMERICAN-STATESMAN



Frank Harren, a member of the Lower Colorado River Authority's Austin-area advisory council, has been trying to call attention to the condition of lakes Travis and Buchanan for more than a year. People have started listening only recently, he says. ALBERTO MARTÍNEZ / AMERICAN-STATESMAN



The Mansfield Dam holds back the diminishing waters on Lake Travis. Sometimes Island was a peninsula extending far into the lake on Thursday.

JAY JANNER / AMERICAN-STATESMAN