

Tucson, other cities could be hit by CAP shortage much sooner than expected

12 HOURS AGO • BY [TONY DAVIS](#)

For the first time, the state agency that operates the multibillion-dollar Central Arizona Project warns that water shortages could hit Tucson and Phoenix as soon as five years from now.

Chances are slim a shortage will come that soon, but they're expected to rise in the next few years due to drought, growing water demand and declining water levels in Lake Mead at the Nevada border. Over a 10-year period ending in 2026, the likelihood of urban CAP shortages is 17 to 29 percent in a given year depending on weather, particularly the impacts of climate change, CAP says.

Such shortages would occur if Lake Mead, now about 1,085 feet elevation, drops below 1,000 feet. Then the lake becomes what CAP calls a "dead pool" in which operations are sharply curtailed.

If that happens, the consequences could be dire:

- Diversions from the Colorado River into the CAP's 336-mile-long concrete canal for urban and Indian users would likely — if not almost certainly — be cut and could be eliminated, although CAP officials say that's unlikely. Agricultural users by then would most likely have their CAP supplies reduced sharply.
- Hoover Dam's electric power, which is generated by the lake and serves cities and farms in three states, would be cut by nearly half or possibly much more. Arizona urban and farming users buy nearly 19 percent of the dam's power at subsidized rates. Southern California users buy more than 50 percent. Nevada users buy the rest.
- Las Vegas, which gets more than 90 percent of its water from the Colorado, would be unable to withdraw any. A new pump station would be needed to bring the water up, at a cost of \$250 million to \$300 million, says the Southern Nevada Water Authority.
- The U.S. Interior Secretary could intervene in advance to hold down states' water diversions. CAP could receive 950,000 acre-feet just to meet Arizona's core municipal needs and fulfill the feds' obligations to Indian tribes. Nevada would get enough to meet health and safety needs. Farms' water would be reduced drastically, and Mexico would get less water than it's already agreed to take in times of shortage, leading to increased international tension.
- In that case, the Interior Secretary's discretion would replace the historic "Law of the River," a series of laws, court rulings and regulations that have governed the Colorado's operations for a century.

That would trigger controversy and potential litigation — and CAP officials say states and the federal government need to take action soon to prevent that from happening.

Tucson banked water

If CAP were cut to cities, Tucson would have breathing room before it's forced to resume large-scale groundwater pumping, which it has sharply reduced in the past decade, Tucson Water officials say.

First, the city has recharged and stored 44,000 acre-feet of CAP water it bought but didn't use over the past few years. It will have stored another 300,000 acre-feet by 2020. The Arizona Water Banking Authority has recharged another 170,000 acre-feet in the Tucson area, says **Wally Wilson**, Tucson Water's chief hydrologist.

The city delivered about 93,000 acre-feet last year. Also, Tucson Water customers have sharply scaled back water use. Total use sank to 1989 levels last year despite continued population growth, Wilson said. At the same time, Wilson said the picture CAP presents is "shockingly different" from what it and the federal Bureau of Reclamation said previously.

But many officials across the state and the West warn that residents and farmers across Arizona and the river basin will have to conserve more water and pay higher water prices if the drought continues. Tucson may not have to conserve as much simply because it's already conserved so much.

Shift in thinking

The CAP forecast represents a 180-degree shift in thinking of officials of one of the country's biggest and most expensive water projects. For some time, CAP and federal officials have foreseen a mild or moderate shortage in the next few years, curtailing deliveries to non-Indian farmers and purchasers of "excess supplies." The U.S. Bureau of Reclamation, which runs Mead, predicts one could happen in 2016.

The bureau also released a study 18 months ago warning the entire river basin could run 3 million acre-feet short by 2050. The river's average annual flow could drop 9 percent from 15 million acre-feet a year due to climate change, that study said.

But CAP officials said as recently as 10 months ago that they didn't expect shortages severe enough to affect cities and Indian tribes – which have higher priorities for the water than farmers – for at least another decade, and possibly not until the 2030s.

Last year, CAP assistant general manager **Thomas McCann** called himself "a half-full (glass) kind of guy" in discussing the Colorado's prospects. He disagreed with the environmental group American Rivers' report listing the Colorado as the U.S.' most endangered river.

Now, CAP says it still doesn't truly expect the water shortages to become as dire as its new official forecasts say. They are based on projections made by the federal reclamation agency, CAP says. Project officials said they simply want to get them out in the open in hopes they will stir action to prevent worst-case scenarios.

Among its suggestions are that the feds and states spend \$20 million to \$100 million annually on projects to conserve water and find outside supplies. That's already about to start on a small scale. CAP, Las Vegas, Southern California's Metropolitan Water District and Denver are likely to begin spending about \$2 million apiece next year, in a pilot project to pay farmers and other non-residential users to take cropland out of production or make other cuts to conserve

water.

“We don’t know what the federal government would do in those circumstances. That’s why we’re trying to get ahead of the game now, and say the seven states in the Colorado River Basin need to work together,” said **Mitch Basefsky**, a CAP spokesman.

“There’s no way the federal government is going to allow Las Vegas to go dry,” Basefsky said.

Drought is main factor

How did one of the West’s most essential water projects get into this fix? And why did CAP change its forecast so abruptly?

The most obvious answer is drought. Now in its 15th year, it has been a major factor in reducing Lake Mead’s elevation from more than 1,210 feet in 2000 – 91 percent full – to 1,086 feet now, at 45 percent full.

Annual flows, which averaged a bit more than 15 million acre-feet during the 20th century, dropped to an average of barely 12 million average from 2000 to 2010, the most recent year available, an Arizona Daily Star analysis shows. This 20 percent reduction is more than what the Bureau of Reclamation has predicted will occur between now and 2050 due to climate change.

At the same time, Lake Mead and CAP are threatened by what’s called a structural deficit that existed long before the drought started, said Basefsky.

In a typical year, Lake Powell at the Utah border releases 8.23 million-acre feet to Lake Mead. Mead picks up more water — the amount varies annually — from tributaries west of Powell.

But Arizona, California, Nevada and Mexico take about 9 million acre-feet from Lake Mead annually. Another 600,000 acre-feet are lost to evaporation. That creates a 1.2 million acre-foot deficit when there is no drought.

In a normal period, such deficits are eased by periodic wet years in which Powell’s flows top 8.23 million acre-feet, Basefsky said. But that’s happening less due to the drought.

“We’re basically saying this long drought is exacerbating the structural deficit,” Basefsky said. “If we didn’t have long-term drought, we’d still have to take action, but not this soon.”

Wakeup call

The reaction to CAP’s forecasts from those knowledgeable about water has been strong.

Brad Udall, a leading water researcher whose father, the late Arizona Rep. Morris Udall, did as much as anyone to get CAP extended to Tucson back in the 1970s and ’80s, calls the river’s situation a ticking time bomb.

CAP shortages have been forecast since Congress authorized the project back in 1968, recalled Udall, a native Tucsonan and a senior fellow at the University of Colorado’s law school.

But because of continued overuse of water in the West and because of climate- change-induced or -aggravated drought, “I would say that there is a cancer on our water-management

systems now. It might be slow-growing or fast-growing, but we can't ignore it and we need to deal with it," Udall said.

The big "aha" in this situation is that if and when our drought ends, the river and CAP's problems don't end, said **Doug Kenney**, director of the University of Colorado's Western water policy program.

"The problem is that the Lower Basin is using more water than what comes in," he said. "Demand on the river caught up with supply around 2000. No one noticed, but the drought also started right there, and (Lake Mead) started dropping like a rock."

Overall, this problem will shake up people in Arizona, said **Val Little**, director of the Water Conservation Alliance of Southern Arizona, which advises suburban governments on conservation.

"I've never seen the words 'dead pool' before," she said. "That's a real wakeup call."