

Parched Cities Share Water in West

Longstanding Rivals Phoenix and Tucson, Hit by Drought, Stop Going It Alone



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The Southern Avra Valley Storage and Recovery Project, a water facility in drought-plagued Tucson, Ariz., last week. Jesse Chehak for The Wall Street Journal

By

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PHOENIX—A recent agreement by this city and Tucson, Ariz., highlights a growing trend in the drought-plagued Southwest: water agencies sharing resources to stretch limited supplies rather than going it alone.

Phoenix, which gets more water than it can store from the Colorado River, has agreed to send some of its surplus to Tucson, which needs it to lower pumping costs. In return, Tucson will give up part of its share of Colorado River water to Phoenix when needed. The deal finalized in early October comes despite long-standing rivalries between Arizona's two largest cities.

“Any rivalry between Phoenix and Tucson is so 10 years ago,” Phoenix Mayor Greg Stanton said in an interview.

Water transfers between agencies have been picking up across the West in the wake of a drought that has ravaged the region for much of the past 15 years. During Texas' severe drought in 2011, more than 1.7 million acre feet of water were transferred between users, compared with an average of 150,000 annually between 2007 and 2009, according to a 2012 report by the Western Governors Association and Western States Water Council. An acre foot is 326,000 gallons, or about the amount of water used by a family of four in a year.

In August, the Metropolitan Water District of Southern California agreed to send treated water to Sierra Madre, Calif., as part of a deal with the Upper San Gabriel Valley Municipal Water District to ease that city's water shortage. Metropolitan, based in Los Angeles, will get repaid double what it sent in untreated water, as well as the right to buy water from the smaller agency through 2035.

“This is ushering in an era of cooperation where, typically in the past, each player has watched out and protected its own rights,” said Dave White, co-director of the Decision Center for a Desert City at Arizona State University in Tempe, Ariz.

Water exchanges have been used to some extent in the West for decades, but water experts say the numbers have been increasing in recent years. One reason, they say: The supply of Western water has shrunk amid drought even as the region's population has expanded. The problem is particularly acute in the Lower Colorado River basin, where [the Lake Mead reservoir](#), which provides water to about 20 million people in California, Nevada and Arizona, has fallen to 39% of its capacity.

With projections of continued declines in the Colorado River due to climate change—Arizona State scientist David Sampson said its flow could eventually fall to as little as 40% of its long-term average—local officials are looking at ways to increase the amount of water in storage. In California, voters Tuesday will decide whether to approve \$7.12 billion in general obligation bonds for a raft of water projects, such as surface and underground storage.



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Chief hydrologist Wally Wilson, right, works at Tucson Water last week. Jesse Chehak for The Wall Street Journal

Arizona has some of the most extensive underground storage in the West, with about 11 million acre feet of recoverable water—roughly four times what the state gets as its annual share from the Colorado River, said Thomas Buschatzke, assistant director of the Arizona Department of Water Resources.

Yet the water isn't always readily accessible, nor cheap to withdraw. Phoenix, for example, can meet only 5% of its peak demand because its 18 active wells aren't enough to pump the water out, said Kathryn Sorensen, water-services director for the city of 1.5 million. Phoenix gets about half its water from the Colorado River and half from a local tributary called the Salt River.

Tucson, by contrast, has more than 200 wells because its sole source of water is that taken from the Colorado River and stored underground with local groundwater. But the city of 526,000 pays \$200 an acre foot to pump the water, a cost that will decrease as Phoenix water helps refill aquifers that remain at least 200 feet below capacity, said Wally Wilson, chief hydrologist for Tucson Water.

Since 2000, Tucson has spent \$250 million building a network of wells and other facilities to inject its share of Colorado River water underground, part of a long-term plan to hedge against future drought. “We see this horizon where shortages are going to happen,” Mr. Wilson said during a tour of a water pond in the saguaro-covered desert outside Tucson.

Unable to use all of the city’s Colorado River water due to the lack of wells to store it, Phoenix officials in 2007 considered sending a surplus of 60,000 acre feet to store in Tucson, but dropped the plan amid the recession and legal questions, Mr. Buschatzke said. After taking office in 2012, Mr. Stanton pushed for the water transfer anew.

Under terms of the pilot deal between Phoenix, Tucson and a smaller Tucson-area agency, the Metropolitan Domestic Water Improvement District, Phoenix will ship its surplus water 100 miles south, where it will go into local aquifers. During future shortages on the Colorado, Tucson and the smaller agency will pump the water out for their customers while turning over part of their delivery of the river to Phoenix.

“It’s cities saying, ‘We are going to be in a leadership role in drought planning,’ ” the mayor said.

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