

Challenges & Opportunities

Western states cope with drought conditions

By G. Tracy Mehan III



California is not the only part of the American West that is experiencing a searing drought. The governor of Washington has just declared a state drought emergency.

And, while the rains have returned to Texas, the situation in the Colorado River Basin, which includes the states of California, Colorado, Nevada, New Mexico, Utah and Wyoming, is turning critical. Just east of Las Vegas, Lake Mead—actually a reservoir, not a natural lake—could reach 15 ft below the shortage line of 1,075 ft above sea level in 2017, which would prompt a federal shortage determination, according to the U.S. Department of the Interior's Bureau of Reclamation (BOR).

As reported by Bloomberg BNA's Water Law & Policy Monitor, these latest modeling results contradict previous ones and thus could mean "the first-ever shortage in the lower basin." If true, the BOR would have to reduce the amount of Colorado River water allocated to Nevada by 4%.

The Central Arizona Project (CAP) is a 336-mile-long aqueduct stretching from Lake Havasu to Tucson, with 14 pumping stations lifting Colorado River water almost 3,000 ft, eight siphons and three tunnels. It delivers approximately 520 billion gal (1.6 million acre-ft) annually. Absent CAP, Arizona would not exist as we know it today: a booming Sun Belt state with expanding metropolitan areas. Unfortunately, BOR models indicate that CAP "could experience a 20% reduction in its supply." The state of Arizona would find its total Colorado River water supply down by 11%.

Eastward Bound

In his book, *The Future of Water*, water investment guru Steve Maxwell (with Scott Yates) described a dystopian future, at least in the water-short West, if nothing changes. The book opens in October 2111 in "one of the still-populated areas of northwest Los Angeles" on a sweltering day. Joe begins his day using the male urine recycler with an ultrasonic distillation tank that can disgorge a pint or so of clean water. It

was "Tuesday—his day for a shower"—a 30-second stream of hot water heated in a rooftop tank.

"They didn't have much reason to stay in L.A. these days anyway, thought Joe. The last few family members that he and his wife Ellen had in the area had recently picked up and moved back to the booming Cleveland-Buffalo corridor, where a good bit of U.S. manufacturing was now concentrated," Maxwell wrote. "And many of their other long-term friends had long since migrated back to the Midwest or found jobs with the North American government in the Winnipeg area."

Recently, David Orr of Oberlin College in Ohio, in collaboration with the Strategic Innovation Lab at Case Western Reserve University in Cleveland, started the Lake Erie Crescent Innovation Cluster, a sustainable redevelopment effort that assumes major demographic shifts to the Great Lakes region given climate change, drought, rising sea levels and the desire for a secure water supply in a formerly cold region. Maybe life does imitate art.

Having worked on Great Lakes issues for eight years in Michigan, I can affirm that there are great expectations among regional leaders that at least some movement of population and industry, along with the concomitant environmental challenges, are coming their way. How much, or to what degree, will depend on whether or not good water and economic policies and practices will be implemented west of the 100th meridian.

Methods of Change

I love the Great Lakes region for reasons both professional and personal. My wife is from Milwaukee, and we vacation in the region in the summer. But you can put me down as a guarded optimist contingent on some serious, even radical, changes being made by the people, cities and utilities of the Western states. There is a triad of solutions or ameliorating actions that can make the West more sustainable in terms of water quantity and quality. They could transform how water is valued and managed in a way that looks something like sustainability's triple bottom line—socially, economically and environmentally.

The three steps involve technology, markets and pricing. I tend to default to economics as the way to improve water management and infrastructure—hence, my emphasis on water markets and water rates as a demand management tool—

and I am not inclined to the view that "technology will save us" in most of life's or society's challenges.

Sometimes, the law of unintended consequences kicks in and reveals new challenges that emerge from supposedly beneficial innovations. Remember PCBs? But there is a tremendous transformation underway in terms of how we view wastewater that, enabled by exciting new membrane and other technologies, will allow us to "find" new water right under our noses.

As many water advocates now observe, "There is no such thing as wastewater, just water that is wasted." Reuse, recycling and reclamation of wastewater or saltwater are becoming standard parts of many utilities' portfolios. In subsequent columns, I will elaborate on these three pillars of sustainable water management for water-short regions. **w&wd**

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