

# A Tale of Two

Water efficiency strategies help California weather its ongoing drought

By Klaus Reichardt

**W**e have all heard of, if not studied, the famous book, *A Tale of Two Cities*, by Charles Dickens. The book deals with several critical social issues in Paris and London in the late 1700s and by some accounts is the No. 1 best-seller of all time. Although what we discuss here will not become as famous as the Dickens book, it will address some pressing issues that are being examined closely in California and around the world. It is the story of two California droughts, one in the late 1970s—considered the worst in the state’s history—and one that began around 2012. This drought also is ranked as one of the worst in the state’s history.

These two droughts are similar in one key way: Their severity is about the same. Other than that, they are significantly dissimilar when the following metrics are examined:

- In the late 1970s, the population of California was about 20 million people; by the 2000s it was closer to 40 million people.
- When the 1970s drought occurred, water shortages became critical within a year and the state asked consumers to cut back on water consumption by as much as 50%. When the 2000s drought occurred, it was four years before public officials started implementing water restrictions, and these restrictions limited water consumption by a more workable 25%. (In a few areas of the state, the restrictions were 35%.)
- Water conservation or water efficiency (long-term water conservation) were not considerations in 1970s California. In many ways, the state was still following the words of William Mulholland, the director of Los Angeles water infrastructure in the 1920s. When speaking of water, he said, “There it is ... take it.” Today, public officials in his position are more likely to say, “There it is ... save it.”



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- In the 1970s, few, if any, manufacturers of commercial restroom fixtures considered the amount of water their products used. By the 2000s, water use was regulated both nationally and by the state. In many cases, companies developed systems that used far less water than these mandates.

As you can see, it really is a tale of two droughts. In one, water consumption was not even a consideration, and in the other, water efficiency was front and center. This explains why the drought of the 1970s became so severe so quickly and why, 30 years later, the state survived four years of severe drought before measures had to be taken.

## A Lesson in Being Prepared

The 1970s drought started around 1976; by 1977 the situation was dire. An emergency water pipeline had to be built across the Richmond-San Rafael Bridge so citizens north of San Francisco could have access to water. However, circumstances improved within about a year, and by 1979, most Californians were back to their former lifestyles, using as much water as they wanted.

But the state’s public officials and industry leaders knew that the crippling drought they had just experienced would not be the last. Studies were commissioned to help find ways for the state to better weather the next water shortage.

One of the key actions they took was to make water a state issue rather than just a local issue. Programs were put in place so that if one county or area of the state was water short, other areas of the state that were more water comfortable could share some of their water with the water-short area.

These programs also encouraged industry to take steps to become more water efficient. Several industries in California, from farming to manufacturing, were severely impacted by the 1970s drought. It was clear that water shortages were not good for business and more water-efficient products and business operations had to be implemented.

# Droughts

# 2012

## Focus on the Restroom

While we could discuss a number of steps farming, manufacturing and other industries took to use water more wisely, what has made one of the biggest impacts on reducing water consumption is in the restroom. In most commercial facilities, more water is used in the restroom than anywhere else in the facility. One of the few exceptions is when the facility is heavily landscaped.

In the 1970s, a toilet or urinal used as much as 3 gal of water per flush, and sometimes more. By 1992, manufacturers were legally required to reduce this to 1.6 gal per flush (gpf) for toilets and about 1 gpf for urinals. But then private industry stepped up to the plate. Realizing there was both a need and a market for more water-efficient products, companies developed a range of fixtures that use even less water than is mandated.

By now, most of us are aware of dual-flush toilets. On average, these use about 1.25 gpf and can be found in all types of facilities and homes. There are even sensor-controlled dual-flush toilets. The sensor determines which type of flush is needed—to remove liquid waste or solid waste—depending on how long the toilet was used (more than 60 seconds usually tells the sensor a bigger flush is needed).

Compressed air toilets or pressure-assisted toilets, typically used on airplanes, use about 0.5 gpf. These systems appear to have a growing future in commercial and residential facilities. And do not be surprised if you run into a no-water toilet someday. They are sometimes installed in residential settings and their popularity is growing.

With urinals, there has been less progress, but change is coming. As of 2016 in California, all new urinals installed must use 0.5 gpf or less. Because the state is such a huge market for restroom fixtures, some manufacturers are likely to take the next step and reduce water consumption for all of their urinals sold



Waterless urinals are helping building owners save water during the drought.

throughout the country.

Many California building owners are abandoning traditional water-using urinals altogether. Instead, some are installing no-water or waterless urinals. One of the key reasons is cost savings. In most cases, a waterless urinal is less expensive to select, install (no flush valve connections are required) and maintain. And because of the added water savings, they can reduce water utility costs considerably.

While we started this article by discussing a tale of two droughts in California, we must realize that water consumption is a worldwide issue. In fact, the recent COP 21 conference in Paris found that water and climate change are interconnected, and finding ways to use water more efficiently and responsibly is almost as important as finding ways to keep climate change in check. So, in essence, this is a tale of two eras: one in which water was taken for granted and one in which water is highly valued, as it should be. **WQP**

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