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Ready for reuse?

Oct 1, 2008 12:00 PM, By Nancy Mann Jackson



On the list of difficult ideas to sell to residents, the practice of turning wastewater into drinking water is at the top. But, because of drought, population increases and planning, several communities are leading the drive to elevate the option to a pragmatic viability. "Most people have never heard that less than 1 percent of the water on this planet is available as fresh water," says Rebecca West, director of technical services for Spartanburg, S.C., Water and incoming president of the Water Environment Federation (WEF). "The water we have is the same water that's used over and over again."

Nevertheless, while new technologies and treatment processes have made it possible to create "fresh" water from wastewater, the public's natural aversion to drinking former sewage presents a challenge for many communities interested in reusing their water resources. The key: Extensive, ongoing education about the nature of water systems and the status of community water supplies.

Communication is key

In January, the largest indirect potable reuse facility in the world

opened in Orange County, Calif. The Orange County Groundwater Replenishment System receives wastewater from a nearby sewage-treatment plant and “superfilters the water until it is cleaner than rainwater,” according to a recent New York Times article about the plant. Once filtered, the water is discharged into a lake, where it mingles with the earth and seems to become almost natural again, before local utilities pump water from the aquifer, delivering it into the homes of 2.3 million customers. It is the ultimate water recycling solution, but it took 10 years to get the plant built and operating and to get the community to agree to the plan.

The Orange County Water District (OCWD) started a public outreach program early in the project that helped address the resistance to the idea of reusing wastewater, says Mike Wehner, assistant general manager for water quality and research for OCWD. “The program involved hundreds of face-to-face presentations to community groups throughout our service area,” he says. “It helped put a personal face on the project and gave the community someone to express their concerns to and to learn about the project from. As people learned more about the project, they became more comfortable.”

To start, the outreach program focused on obtaining letters of support from community and opinion makers, as well as others at the state and federal levels. Next, OCWD officials worked to earn endorsements from religious, environmental, business and other groups. They used surveys, focus groups and meetings to understand the public's concerns and craft messages that would address them.

By the time the system opened, surveys found that 70 percent of residents who were aware of the Groundwater Replenishment System had a favorable opinion of it. “It took a number of years to do that outreach, but the community was supportive when the project went online,” says Ron Wildermuth, who directed the communications program at OCWD and now serves as manager of public and government affairs for the West Basin Municipal Water District in Carson, Calif., where he will work to achieve similar public buy-in for expanded water recycling programs. West Basin plans to decrease local dependence on imported water by one-half by 2020 and will

need to double its current water recycling efforts to 70 million gallons per day to do so.

While it seems logical to initiate a community education program when implementing a major new wastewater reuse project, industry leaders say it is appropriate to begin those conversations even when there is no such project on the horizon. Spartanburg Water, which does not have a potable reuse project under way, frequently makes community presentations about the water cycle and how water is treated for consumption. “We explain what happens with water; both drinking water facilities and wastewater facilities put water back in streams, and then it's taken out again eventually to be filtered and reused,” West says. “What the public sees is that they turn on a tap and clean water comes out; they may not understand that all water is reused to some extent. When you start talking about it like this, that we use it over and over, and that it's OK, it's like a light bulb goes off. People have never thought about it that way before.”

Through the presentations, Spartanburg Water officials are starting the conversation about water reuse to engage customers and key community leaders. “Everybody's accepting it right now because we don't have a particular reuse project in place,” West says. “But by starting the discussions now, it will make it easier when we do have a project in place.”

While every community may have to overcome public resistance to wastewater reuse with a different strategy, each must rely on ongoing, open, accurate communication, says Craig Riley, water reclamation and reuse program leader at the Washington State Department of Health and vice-chair of WEF's Water Reuse Committee. “The only way common decisions can be made when there are many different points of view is to make certain that everyone has access to accurate and truthful information, and to make certain that this information is available and repeated as much as necessary. Resistance is a result of a lack of knowledge about the quality of the water that can be produced, the safety of the water that can be produced, the level of investment necessary for the project, and mostly about the state of the community water supply.”

Why do we need recycled H₂O?

Water supply has become a greater concern in many communities because of population growth, which increases demand, and climate change, which creates drought conditions and depletes resources. In the Las Vegas Valley, rapid development in the late 1980s began stressing local water collection systems. Ninety percent of the valley's potable water is derived from Lake Mead, which is 2,000 feet below and 20 to 30 miles away from parts of the valley. Beginning in the mid-1990s, the Las Vegas Valley Water District (LVVWD) began developing satellite wastewater treatment plants in areas distant from the three main treatment plants near the lake.

With the “neighborhood-friendly” facilities, built to eliminate noise and odors customarily associated with wastewater facilities, the district can recycle local wastewater and use it to irrigate nearby golf courses. “[That saves] the long trip back to the lake to be treated again to potable standards before being pumped back up to the valley for irrigating turf grass,” says Gary Grinnell, senior civil engineer at LVVWD.

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