

Water Purification Tech Promises Drought Relief

By Patrick Healy, NBC 4 Southern California, 2/8/14

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As one of the worst droughts in California history continues, it is critical for residents to start conserving water. With the need for water so dire, a new technology is in the works that could let people drink tap water that was once in their toilets. Patrick Healy reports from Playa Del Rey for the NBC4 News at 6 p.m. on Friday, Feb. 7, 2014.

Technology for purifying undrinkable water has contributed to easing drought pressures in Southern California, and may be called on to do more, if solutions can be found to issues that range from economic and legislative to the "yuck" factor, say water agency officials.

Earlier attempts to promote "toilet to tap water" hit a psychological barrier.

"Sewer water sounds kind of scary," said Hailee Fleming of Redondo Beach.

However, so-called "gray water" is increasingly used for irrigation and industrial purposes. Water recycled from treated sewage is being used to recharge groundwater that ultimately finds its way through wells into municipal water delivery systems.

Injection of recycled water also serves as a barrier to protect groundwater near the coast from seawater intrusion, raising salt levels.

Some recycling plants are capable of purifying treated sewage water to standards higher than required for drinking water. But under current California law, it cannot be used for that purpose.

That may change.

"Unless we consider alternative sources of water, California will always hurt," said Assemblyman Isadore Hill III (D-Compton), a former board member of the Metropolitan Water District.

The legislature could act to legalize recycled water for distribution by water districts, depending on the results of a report expected in 2016.

"I would say within the next 5-10 years, it's very possible," said Rich Nagel, general manager of the El Segundo based West Basin Metropolitan Water District.

It currently recycles 35,000 acre feet a year, effectively conserving that much drinking water.

"The water you see here is 100 percent drought proof," Nagel tells visitors as he gives them a tour of the facility.

Last year, the Orange County Water District launched an expansion of its groundwater replenishment system, also relying on treated sewage water.

The reverse osmosis technology that removes contaminants from sewage water is also applicable to removing salt from ocean water to make it drinkable, and distribution through public water systems is permitted.

West Basin has built a demonstration desalination plant in Redondo Beach, and hopes to line up partners to help build a production plant. The goal is to derive from the ocean 10 percent of the water it delivers, Nagel said.

Because desalination requires considerable electricity, it is more expensive than recycling water, and can be considerably more costly than acquiring surface water or extracting groundwater. Desalination also faces scrutiny over potential environmental impacts to the ocean.

A desalination plant designed to produce 50 million gallons a day of drinkable water has been under construction the past year in Carlsbad to serve San Diego County.

A similar plant is under consideration in Huntington Beach. A desal plant built for Santa Barbara after the drought of the early 1990s has remained mothballed for most of the past two decades, because it costs so much more to remove the salt than to purchase water from the State Water Project.

Yet as advocates of desalination and recycling water point out, water available from the state project drops markedly during a drought.

At this stage of winter, with the snowpack last measured at only 15 percent of normal, California's Department of Water Resources is projecting the state aqueduct will not be able to deliver any water this summer.