

## Los Angeles' Toilet-to-Tap Fear Factor

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The spectacular failure of Valley secession has left behind a thick residue of unresolved differences between breakup advocates and Los Angeles Mayor James K. Hahn. However, one stagnant issue unites City Hall and secessionists: Both oppose the use of waste water to recharge Valley aquifers that supply some of the city's drinking water.

"Lips that touch reclaimed water," say Hahn and anxious homeowner association presidents, "must never touch mine."

The source of this unanimity is a plan to divert some of the 65 million gallons of processed waste water produced daily at the Department of Water and Power's Tillman Reclamation Plant to irrigate landscaping in the Sepulveda Basin and Hansen Dam recreation areas and cool the steam condensers of one of the city's electrical generating plants. Currently, most of Tillman's processed water is dumped into the Los Angeles River, serving as the river's only permanent water source.

Reclaimed-water irrigation also might get the DWP off the hook to repay the \$50 million in state and federal grants the distribution system cost. The DWP expects to get dunning letters soon because the distribution system the department built with other people's money has never been used as planned.

Just three little words -- "toilet to tap" -- in newspaper headlines in 2000 doomed the DWP's original goal to do many things with the city's reclaimed water in order to stretch drinking-water supplies.

"Toilet to tap" in 2000 meant spreading as much as 35,000 acre-feet a year of highly processed reclaimed water on percolation fields in the Valley. From there, it would migrate over time into aquifers 500 or more feet below, mingle with the unprocessed water that collects from the hillside watershed and flow through layers of Pleistocene sand, gravel and silt. About five years later, the blended water (97% from nature, 3% reclaimed) would have appeared in city-owned wells, to be drawn into the domestic water system where, after a lot of routine testing, more treatment and chlorination, it would flow from the kitchen taps and hose bibs of city households.

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Intense and immediate opposition stopped the DWP's plan for indirect reuse of reclaimed water then. What's unacceptable to Valley and City Hall purists today is any reuse that even hints at evolving into aquifer recharge. For them, watering golf course fairways with reclaimed water is just the first step into a poisoned future.

Fear is the solvent of plans in L.A. for the reuse of treated waste water. There is more than 50 years of good science in water-reclamation technology. The action of chemical, pharmaceutical and biological contaminants in drinking water is well understood. The skills to measure these constituents -- well below one part in a billion -- are advancing. These contaminants, however, leave behind risks that are small, but impossible to reduce to zero. Because even reverse osmosis and other advanced treatment protocols cannot be proved perfectly safe to the fearful, reclaimed water must be unsafe.

Calculating the potential risk baffles many of the scientifically trained. For the average water consumer, there's only faith and gut reaction. And that's why any arguments about the safety and efficacy of using reclaimed water, including direct injection into aquifers supplying drinking water, won't hold up against the stomach-roiling image of toilet to tap.

It's also not enough to know that all water is reused water, and that it has passed through a lot of lives in the last 3.5 billion years. Or that the Valley's own watershed, like the rest of the outdoors, is a vast latrine for everything that lives there, and all of nature's effluent, untreated and unregulated, eventually passes into Valley aquifers. Or that much of the water Los Angeles gets from the Colorado River has previously seen the inside of the septic tanks and sewage systems of upstream cities and arrives here in a condition not much different from the tertiary-treated waste water produced by the Tillman plant.

It's not enough for Angelenos to know that a toilet-to-tap project like the one abandoned by the DWP in 2000 is already in operation in the Northern California communities of Dublin and San Ramon, where 2,800 acre-feet of reclaimed waste water recharge the aquifer annually. Or that a significant quantity of reclaimed water is already being used in Los Angeles for landscape irrigation and filling man-made lakes. Or that direct injection of reclaimed water into formations that are part of the basin's aquifers is used to prevent seawater intrusion in the South Bay, Long Beach and Orange County. Or that, since 1962, reclaimed water has been spread over percolation fields adjacent to the San Gabriel River to end up, years later and vastly diluted, in drinking water in the homes of hundreds of thousands of southeast L.A. County residents. Or that many cities in the southeast county have dramatically reduced their dependence on "imported" water from the Metropolitan Water District by mandating the use of reclaimed water for the irrigation of parks, schools, highway medians and major businesses

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Neither good science nor the reassuring outcome of a 40-year-long epidemiological experiment on the residents of the southeast county is enough to overcome the feelings that reclaimed water arouses. It's not from the gut that these feelings come, but from the brain. In an occult corner of the cerebral cortex, called the insula, some of the mechanisms of revulsion and sexual arousal lie intertwined. The insula can't be persuaded. It doesn't weigh evidence. It only knows desire and disgust..

There are interconnected reasons that are biological, cultural and even religious to feel sickened by the image of reclaimed water. Those reasons, however, are increasingly irrelevant to the situation of Los Angeles and the region.

Already, reclaimed water is crucial to maintenance of the region's precarious freshwater balance. The 50,000 acre-feet a year that is spread in the Montebello Forebay has helped restore about half of the historic overdraft of Central Groundwater Basin, the main body of water underlying the L.A. metropolitan area. By 2007, the badly depleted Orange County basin will begin using 100,000 acre-feet of waste water a year for groundwater recharge.

That's sufficient recharge to provide water for about 300,000 to 400,000 households a year, hardly enough to slake the thirst of the million more residents expected to arrive in the city of Los Angeles by 2010 or the additional 6 million who will make their homes somewhere in Southern California by 2025.

Their arrival couldn't come at a worse time. By 2015, Los Angeles and the region will finally be cut off from the surplus Colorado River water that permitted relatively unrestricted growth on the region's desert fringe in the 1990s. And if changes in the climate by 2025 follow even conservative global-warming models, reservoir levels along the Colorado River could fall by 30%.

To make up the region's water needs, homeowners could conserve more, although they are already exemplary water misers, having one of the lowest per capita uses in the West. We could desalinate some of the brackish water beneath the South Bay.

We'll have to use even more reclaimed water for irrigation and manufacturing, if only to protect L.A.'s tourist destinations and its remaining industrial jobs from increasingly higher potable water costs. (The County Sanitation Districts, which collectively manage the waste treatment of the other cities in Los Angeles County, already supply more than 418 sites with reclaimed water.)

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Despite the disgust, we'll have to pass all our waste water through the next generation of treatment facilities, spread some more of it over the aquifers beneath our feet, and use it again ... and again.

There's absolutely no room for useless purism in the L.A. that's coming, and no room for squeamishness either. If you want other stories on this topic, search the Archives at [latimes.com/archives](http://latimes.com/archives). For information about reprinting this article, go to <http://www.lats.com/rights/>.