

EXHIBIT A

Los Angeles Times

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From the Los Angeles Times

Opinion

A solution to California's water shortage goes down the drain

Widespread recycling of graywater could cut residential water use by 16%, according to one estimate.

By Marc B. Haeefele

April 19, 2009

During a prolonged drought in the early 1990s, L.A.'s Department of Water and Power and Department of Public Works conducted an ambitious experiment. In eight homes, including those of several elected officials, they installed "graywater" equipment that diverted the outflows from washing machines, showers, bathtubs and bathroom sinks to irrigate lawns and gardens outside the homes.

Participants in the program were happy with the results, and the test was officially proclaimed successful in a 21-page research report that found the installations reduced water consumption by about 50% per household on average. No human disease pathogens were found in the outside drainage areas.

Now, the drought is back, the report forgotten, and here we are again, facing another statewide water shortage with river flows at record lows and L.A. residents facing mandatory 15% usage cuts. So what happened to the simple plumbing trick that could save so much water?

What happened was that state health and housing officials, asked in 1992 by the Legislature to draw up a permit code to regulate and legalize graywater use, instead presented a statute so laden with oppressive regulations that few Californians have installed systems. Appendix G of the state plumbing code requires that graywater systems not only get costly permits and have extensive filtering systems but that they also be installed 9 inches underground -- too deep to irrigate most plantings.

In the entire state, only an estimated 200 legal graywater systems have been built. The draconian permitting process has driven graywater, literally as well as figuratively, underground. As many as 1.7 million graywater outlets are running illegally in California, according to Santa Barbara graywater guru Art Ludwig, whose Oasis Design website is a leading resource for graywater research, lore and history.

In official state language, these unofficial graywater systems are "unapproved auxiliary water supplies." But none of the owners has been prosecuted. Northern California even has its "graywater guerrillas," who help homeowners all over the state to construct their own unpermitted systems. "It's a benign conspiracy," says San Diego County graywater expert Steve Bilson.

At the heart of the official obstructiveness is the Sacramento bureaucracies' unproven suspicion that gray waste water carries disease. "They became obsessed with irrelevant risks," Ludwig says. "They miss the big thing -- pollution by industry -- and focus on this."

He says the Centers for Disease Control has found no human disease transmissions from graywater irrigation.

Bilson suggests that state officials were originally overly cautious because of major ground-water pollution issues of the early 1990s -- such as factory-site perchlorates and MBTE from gas station storage tanks.

Water expert Larry Farwell, who participated in the 1990s state safety discussion, said, "Nothing is cuter than two kids bathing in a tub together, but once you pull the plug, they say you have toxic waste."

He estimates that extensive graywater recycling could save more than 16% of the state's residential water use.

That suspicion may be why state Sen. Alan Lowenthal (D-Long Beach) calls his new bill to revive graywater irrigation the "Shower to Flower" law. The January legislation is now going through a state health and safety agency review process similar to that which gutted its predecessor. "This time we hope we can convince the Building Standards Commission," he said.

State officials recently quoted by The Times say that there's little research to prove graywater is safe.

They seem to have missed Los Angeles' 1992 \$500,000 study by San Francisco consultant Bahman Sheikh, which did exactly that. There's a pending \$450,000 "Long Term Effects of Landscape Irrigation Using Household Graywater" study by the Virginia-based Water Environment Research Foundation whose full results come in 2011. Its preliminary results may be out in June. The state could report its new guidelines in May, however.

The basic appeal of graywater is its utter simplicity. Just pipe your washing machine, bath and bathroom sink outflow onto your lawns and garden. They flourish, as detergents and organic dirt particles become plant nutrients.

Arizona, Texas, New Mexico and Montana have much more generous laws on graywater irrigation. "The state's challenge is this time to do graywater right," says Peter Gleick, of the prestigious Pacific Institute. "We have to match the quality of water available to our needs. We can't go on using scarce potable water for everything."

Andy Lipkis, of L.A.'s Tree People, suggests that retrofitting hundreds of thousands of Los Angeles low-rise apartments and single-family homes with graywater plumbing, besides saving a lot of water, could provide thousands of new, well-paying jobs.

Dry is becoming California's future. We've long assumed that our drought years would, after seasons of parched lawns and scrimping, be followed by plenteous rains and even flooding; that reservoirs

and leftover snowpack would always return to save us again.

Now, in the grip of a global climate shift, we are learning better than to count on this. Dryness could become permanent in places where it's long been cyclical, whether it's in Argentina's Pampas, Australia's southeast or, in years to come, the great state of California -- where our river outflows can no longer support several fish populations and where Colorado River allowances are shrinking like the flow of the river itself.

Former City Councilwoman Ruth Galanter, who, along with former City Councilwoman Joan Milke Flores, promoted the original pilot project and had one of the original DWP graywater installations, believes the city, county and state should go out of their way to encourage, not discourage, as much graywater recycling as possible. "We should be giving tax credits for graywater use. We do that for energy efficiency, and compared to the amount of energy available, there's only a finite amount of water."

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