Why Most Texans Haven't Turned to Graywater Recycling

AUGUST 8, 2012 | 10:18 AM

State Impact Texas

BY **SHEYDA ABOII**

PHOTO BY DAVID MCNEW/GETTY IMAGES

Graywater recycling hasn't really caught on in Texas, mostly due to costs and permitting issues.

If water was gold, graywater recycling might be a watershed. But even in these drier times, a graywater recycling system remains a bit beyond the average homeowner's budget and Texas' water options. **Graywater recycling** captures water from showers, bathtubs, and washing machines for later use in landscaping and lawn irrigation.

While some subdivisions and cities in the state already give you the option to construct dual-plumbing in houses built from scratch, the burden remains with the homeowner to install the full system to start recycling. Dual-plumbing allows homeowners to receive two sources of water via two separate plumbing systems. One delivers fresh, potable water while the other delivers recycled water.

Long-time reclaimed water specialist Don Vandertulip tells StateImpact Texas that the dividends aren't always enough to outweigh installation and maintenance costs, which can reach as high as several thousand dollars. (Vandertulip has been involved in reclaimed water projects since 1978 and is currently active in numerous conservation organizations including the **WateReuse Association**, **Water Environment Federation**, and the **American Water Works Association (AWWA)**.)

Why Your Water Might Cost More the Second Time Around

Unlike commercial reclaim systems, graywater systems typically serve a single home. They're permitted at either the city or county level and they're maintained by their private owners. For simple systems, fancy engineering firms stay out of the picture.

The simplest graywater systems collect water from your shower, bathtub, or washing machine in a large storage tank. To prevent overflow, a diverter valve sends water back to the city sewer once the tank is full. When someone decides to then use their harvested graywater, all they have to do is open up the designated tap.

But in some cases, infrastructure beyond this is necessary. And this could cost a whole lot more.

For homeowners who are unable to install a simple gravity system (which delivers water without using a pump), an expensive plumbing job might be required.

Rebecca Batchelder, a former Austinite who once held the only permit to recycle graywater in the city, agrees that installation costs vary widely. She lucked out. Her house featured a pier and beam foundation rather than slab. Homes with slab foundations embed most plumbing connections in

concrete, making it difficult to install graywater recycling systems, but plumbing in pier and beam houses is much easier to access. Over all, Batchelder spent a mere $500 for her entire system. But complex systems that recycle water from your shower, bathtub, or washing machine for toilet flushing can cost up to 10,000 dollars. Add in regulatory fees, and systems with all the bells and whistles could be quite costly.

And while it may be cheaper to install a system initially rather than retrofit a house, the water saved in the long-run still might not cover the associated costs. This "depends on how long they own the house and how much they invest in the system," says Vandertulip.

It's Complicated

Getting into graywater recycling can be a tricky business for other reasons too.

While reclaimed water is treated wastewater, graywater doesn't contain any solid waste and doesn't undergo any formal treatment process. But, using graywater to irrigate vegetable gardens could still introduce pharmaceuticals and trace contaminants. Andrew Sansom, the Executive Director of the **Rivers Systems Institute at Texas State University**, says these health risks have prevented large-scale adoption of graywater recycling in Texas.

PHOTO BY TODD WARSHAW/GETTY IMAGES

The San Antonio riverwalk uses treated waste water to keep things flowing. In this photo, torchbearer Frederico Ng carries the Olympic Flame along the Riverwalk during the 2002 Salt Lake Olympic Torch Relay in San Antonio, Texas.

"The issue is more problematic on a residential level because there's concern that children play in sprinklers. And so you want to be very, very careful about potentially exposing little children to water that might cause them to contract the flu, or some other problem of that nature," said Sansom in an interview with StateImpact.

And if enough people use graywater recycling, water flows from neighborhoods to treatment plants could be reduced. Most sewer systems require a certain volume of water to function properly. So, decreases in flow volume could create some blockages and motor problems.

Sansom says that decreased river flows could even **affect cities like Bastrop and Houston**, which depend on water that's been treated through the sewer treatment plants upstream.

Success in the Desert, but Hesitation in Texas

Despite these challenges, water specialist Don Vandertulip maintains that graywater recycling could still be viable as part of an integrated approach. While some communities might choose to pursue graywater recycling, others might find that large-scale reclaimed water makes more sense.

Indeed, successful graywater recycling programs have been implemented in several states including Arizona, California, and Washington.

In Tucson, Arizona, there are well over 100,000 households that recycle graywater.

Mark Shaffer, the Communications Director of the **Arizona Department of Environmental Quality** attributes this graywater success to Arizona's exceedingly dry climate and the state's "liberal use policy."

While residents have partly turned to graywater to supplement their sparse water resources, the 25 percent tax write-off for installment costs under $1000 has also helped sell the idea.

But graywater recycling hasn't really picked up in the Lone Star state.

Texas State University's Andrew Sansom points out that Texas just isn't desperate enough to seriously consider the graywater option.

"To some extent, it's an issue of where we are with respect to the water issue. We might imagine that the cities in Arizona, Southern Nevada and Southern California are where we're probably going to be twenty years from now," said Sansom. "Their problems are just so much more acute than ours are … they don't have a choice. They're doing all kinds of stuff over there that is remarkable in terms of water conservation. We'll probably get there, but we may be ten to twenty years behind them."

For Rebecca Batchelder, becoming the **first Austinite to recycle graywater** was an attempt to break down barriers. As an environmental engineer, Batchelder was able to sell her ideas to officials. But the system isn't exactly navigable for the average person. Currently, the City of Austin has put together a working group to streamline the permitting process.

And in cities with established permitting processes like El Paso, the public seems to be largely unaware of the graywater option. Tom Maguire, the **Chief Building Inspector for El Paso Building Permits and Inspections** says that not a single permit has been issued in the **water-strapped city**.

While water conservation is heavily emphasized in the **2012 State Water Plan**, graywater recycling is not listed as one of the recommended strategies. To be sure, Texas has come a long way in terms of commercial reclaimed water reuse. Cities like **San Antonio** and El Paso use reclaimed water for industrial cooling and for parkland irrigation.

But for now, the graywater resources waiting in every Texan home remain largely untapped.

Sheyda Aboii is an intern with StateImpact Texas.

http://stateimpact.npr.org/texas/2012/08/08/why-most-texans-havent-turned-to-graywater-recycling/