

Emails Week of July 7, 2008

July 8, 2008

Honorable Mayor Walkup and Council Members

Re: Gray Water and Rainwater Harvesting Ordinance

This letter raises questions and concerns about graywater use and offers possible alternatives for consideration.

As someone with a disability, a healthy community is important to me. I understand that Tucson is pursuing a proposal to facilitate the reuse of graywater on single-family residential properties.

According to a recent study done by the Water Environment Research Foundation (WERF), questions remain as to the long-term safety of graywater reuse and its potential impacts on humans and the environment, and they recommend more research be conducted. This is not an issue to be rushed, as the unintended consequences can be dire. That report can be found by going to: <http://watershedmg.org/content/view/149/52/>

I am a proponent of the Precautionary Principle, which holds that when scientific evidence indicates that serious harm might result from a proposed action, that action should be avoided or mitigated. The classic example is the scientist, John Snow, who in 1854, removed the handle from a London water pump because he suspected that it was the source of a cholera outbreak. Snow's actions saved countless lives, even though science had not yet made a definitive link between cholera and contaminated water.

I urge you to consider using the Precautionary Principle to guide you as you move forward in this process and ensure that the following issues are adequately addressed before passing a graywater re-use ordinance.

Education

I commend the graywater study committee for recommending that education be a key component of any graywater ordinance. However, public education is ineffective when a property owner chooses to bypass the permitting process needed to complete a functioning graywater system.

- *How will public safety be enforced if no permit is issued?*
- *Which department will be responsible for education and implementation and where will its funding come from?*
- *How does the city intend to monitor the property each time the house is sold or has multiple renters?*

Health and Safety

Fitting new homes for graywater without having adequate land, drainage or landscape could create a potential health hazard for the neighborhood.

- *What are the minimum site requirements?*
- *The push for greater density leads to a prevalence of lot splits, subdivisions with small yards, decreased setbacks, high density lot coverage, and residential cluster projects; will there be enough land & landscaping to handle the gray water?*
- *New subdivisions include little open space, common space, and natural undisturbed space, so will these neighborhoods have difficulty supporting healthy gray water reuse?*

Inclusive Home Design

If the foundation of a graywater house is required to be raised to accommodate gravity flow, will this elevation increase mean the city will sacrifice accessibility standards in order to reuse gray water?

- *Will the zero-step entry requirement be compromised?*
- *How will the graywater ordinance interact with preexisting building and land use codes? Will variances be limited?*
- *What are the costs to residents to pay for the infrastructure (tanks and pumps) that make the gray water stub-out functional?*
- *Are rebates in place and easily accessible?*

Wastewater Infrastructure

The City/County Water Study Oversight Committee is currently studying water and wastewater infrastructure and management. The water conservation issues raised herein might be easier to resolve after the community learns the results of this regional effort. Pima County's Wastewater Treatment system relies upon a certain amount of liquid flowing through the pipes to keep the system functioning, and the County periodically adds potable water to the lines to keep them clear.

- *How often does Pima County Wastewater Management add water to the system?*
- *Will Pima County have to use greater amounts of potable water when less gray water is available to go through the system?*
- *Will the community really conserve water if the County is flushing the system with potable water?*

The unique arid conditions of this region cause gases to build in the sewer system that corrode the concrete pipes.

- *Will the use of gray water exacerbate this problem?*

Suggestions

A safer route to explore is rainwater harvesting. Since residential developers cycle their building plans every few years, the City could require them to design appropriate locations for rainwater cisterns, including positioning the roof and gutters to facilitate maximum rainwater harvesting. Builders could be required to work with companies that install rainwater cisterns so as to offer this option to prospective homebuyers.

Finally, deed restrictions are often an impediment to sustainability features such as rainwater harvesting and solar panels. Builders should be encouraged to draft deed

restrictions for their new subdivisions that will facilitate the installation of these sustainable features, rather than act as an impediment to them.

This conversation does not in any way mean I do not support a comprehensive and progressive effort to save potable water. It does mean the community deserves a look at the big picture before moving forward with the graywater residential requirement. Until we have better answers to these questions, I believe it is prudent for the Mayor and Council to err on the side of caution and continue to study this issue further.

Sincerely,
Tracy Williams

Cc Brad Lancaster
Coalition for Sonoran Desert Protection
Development Center for Appropriate Technology
Green Magazine
Habitat for Humanity
Neighborhood Infill Coalition
Neighborhood Support Network
Pima/City of Tucson Water & Wastewater Study Oversight Committee
Pima County Health Department
Sierra Club – Rincon Group
Sonoran Institute
Sonoran Permaculture Guild
Sustainable Tucson
Technicians for Sustainability
Tom Beal
Tony Davis
Tucson Audubon Society
Vint & Associates
And Other Concerned Citizens