

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com





Clearing up a Gray Area: Simplifying Graywater Use in Austin

10/05/2016

Robert Stefani

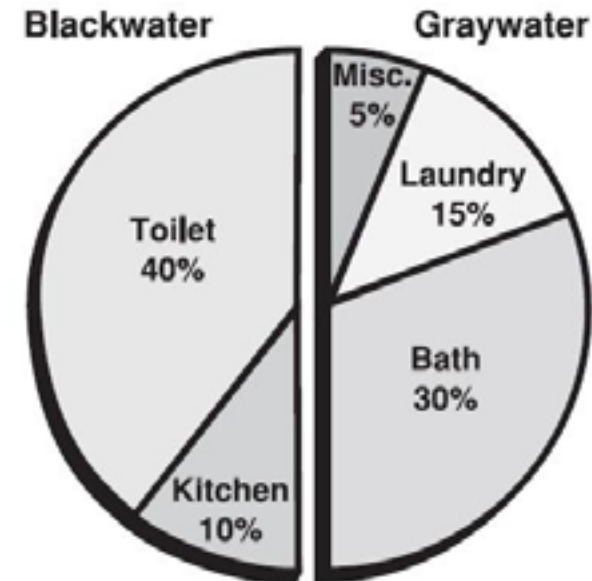


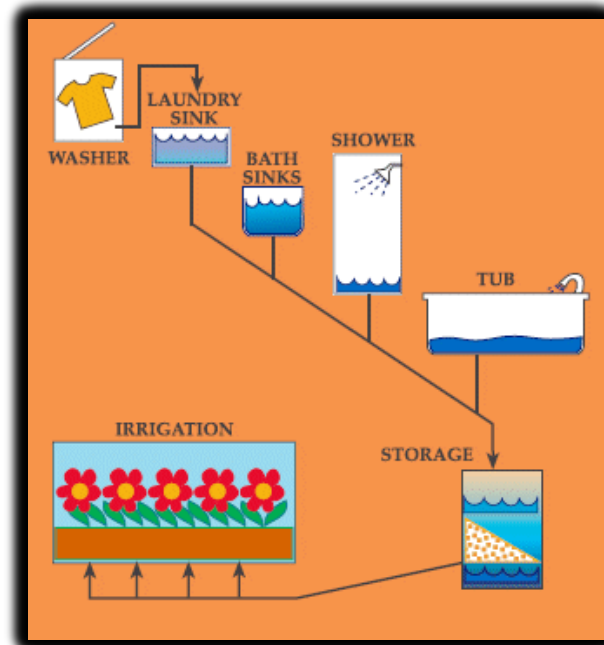
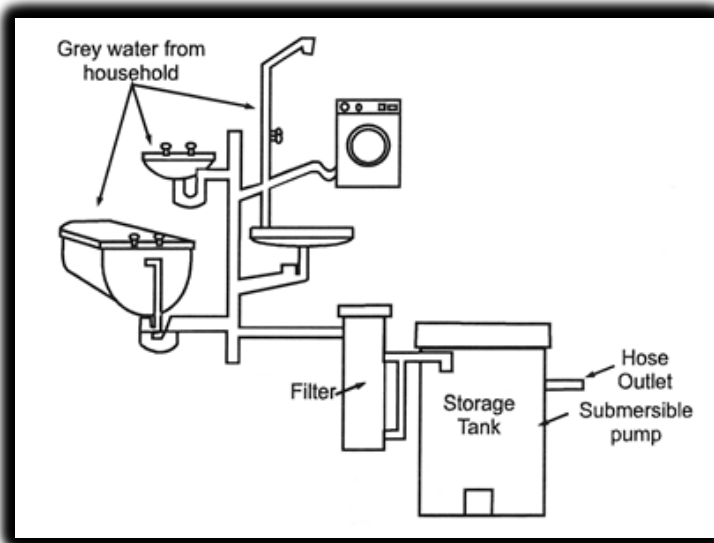
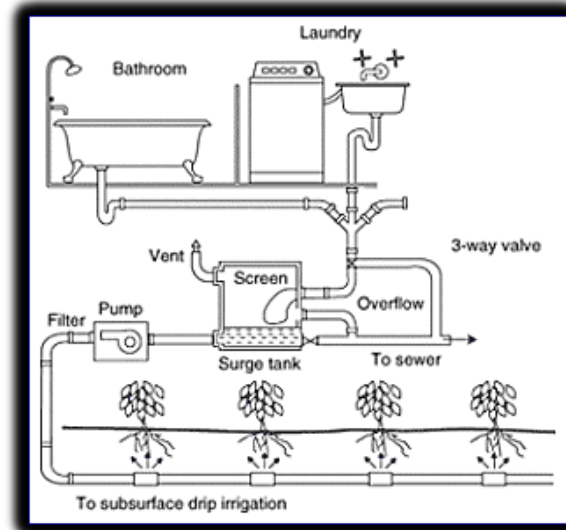
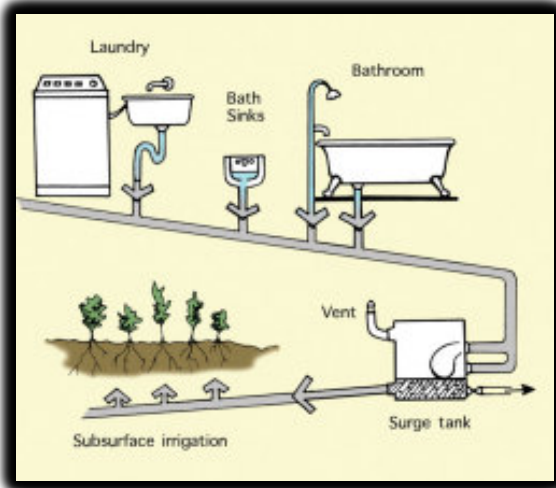
Austin Water Background

- ~223,000 Connections
- ~980,000 retail and wholesale customers
- 548 square mile service area
- ~3,807 miles of mains (both transmission and distribution)
- Conservation program history since 1983
 - Council mandates in 2006, 2007 and 2010
 - ~23% reduction in five year rolling average GPCD (FY 06 – FY 15)

What is graywater and why is it important?

- Untreated wastewater from bathtubs, showers, lavatories and laundry
- Benefits:
 - Potential savings of 40-90 gpd
 - Sustainable onsite water reuse
 - Reduces pressure on wastewater infrastructure
 - Reliable source for irrigation during drought





Graywater Obstacles

- Design requirements increased system costs
- Backflow protection and annual inspections required
- Unclear where to find information about City processes
- Most technical information buried in 533-page code
- Only one residential graywater system permitted within Austin

City Council Direction Background

- Council Resolution #20120126-047
- Identify impediments to single-family graywater implementation and make recommendations on alleviating those impediments
 1. Code amendments
 2. Permitting process
 3. Technical guidance
 4. Staff support
- Memos to Council on July 2, 2012 and March 29, 2013

RESOLUTION NO. 20120126-047

WHEREAS, water conservation is a long-standing priority for the City of Austin, and Stage 2 Watering Restrictions are currently in effect; and

WHEREAS, with properly designed graywater systems, household water from bathroom sinks, showers, bathtubs, and clothes washers can be safely reused for such purposes as foundation watering and irrigation for gardens, landscaping, and compost; and

WHEREAS, an average household can save between 40 and 90 gallons per day by using a graywater system; and

WHEREAS, the City of Austin Plumbing Code includes provisions that create significant hurdles for the permitting of graywater systems; and

WHEREAS, to date the City of Austin has permitted only one single-family residential graywater system through its current permitting and approval process; and

WHEREAS, several interested citizens, including the owner of the previously permitted single-family graywater system, have organized a Graywater Working Group to help identify and address impediments to the creation of additional graywater systems in Austin; **NOW, THEREFORE,**

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

The City Manager is directed to work with the Graywater Working Group and other stakeholders to identify impediments to single-family residential graywater system implementation in the City of Austin and make recommendations on alleviating them, including:

Stakeholder Mix

- Resolution directed Austin Water to work with Graywater Working Group and other affected stakeholders
 - Graywater Working Group
 - Citizen formed group including academics, engineers, installers and advocates
 - Affected city departments
 - Austin Water, Austin Energy Green Building, Planning Development and Review, Watershed Protection, Office of Sustainability, Health and Human Services, and Law
 - City Council Aides

Original Proposed Meeting Process

- Full group meetings to accomplish desired goals
- Large participation
- Overarching issues identified
- Many disparate views and ideas
- Departmental disagreements exposed to public and Council
- Large group became unmanageable with little progress towards desired goals attained

Sub Groups Formed

- Full group broken into smaller subgroups
- Subgroups comprised of focused subject areas
 - Permitting, technical design and outreach/support
- Tasked with understanding and resolving identified impediments related subject areas

Proposed Work Plan Timeline: Phase I

MEETING DATE	Technical Subgroup	Support Subgroup	General Staff Support
March 28	Identify subgroup members; assign data collection/ documentation tasks		
April 11	Document proposed permitting process for auxiliary water		Document current permit process for graywater
April 25		Identify types and content of information needed by customers; develop strategy for estimating potential # of customers and gallons of collection potential	
May 9	Finalize proposed permitting process and identify resources needed		Prepare brief on Auxiliary Water Study and expected results
May 23		Report on findings of savings potential and outline of staff support program	
June 6	Final proposed permitting process and next steps due		Brief on Auxiliary Water study due; combine with permitting process recommendations into Council brief
June 20	Full group progress meeting; work-plan check-in and development of Phase II work plan		Evaluate customer costs and cost/benefit of potential incentives

Identified Impediments and Solutions

- Identified 7 technical impediments to graywater use
 - Recommended addressing through adoption of 2012 Uniform Plumbing Code and Local Amendments
- Identified 6 process and information-related impediments
 - Developing one-stop permit process for auxiliary water
 - Coordinating information through Austin Water's Conservation Division
 - Planning for additional outreach and education components

Citizen Stakeholder Proposed Pilot

- Pilot program proposed in response to certain impediments viewed as not fully resolved
- Potential City Council and Environmental Board Support of pilot
- Administrative concerns
- Issues resolved internally and pilot proposal withdrawn

**Memorandum to Austin City Council
External Stakeholders' Working Group
Gray Water Recommendations**

September 20, 2012

To: Mayor Leffingwell
Council Member Riley
Council Member Martinez
Council Member Tovo
Council Member Morrison
Council Member Spelman
Council Member Cole

From: External Stakeholders of the Gray Water Working Group:

Gayle Borst, LEED AP BD+C, Architect and President/CEO of Stewardship, Inc.;
Executive Director of Design-Build-Live

Kirby Fry, Owner, Southern Exposure

Paige Hill - Executive Director, Urban Patchwork Neighborhood Farms + Designer,
Landscape and Alternative Systems at Ground Swell


Chris Maxwell-Gaines, P. E., Owner, Innovative Water Solutions

Lauren Ross, Ph. D., P. E. Environmental Engineer and President of Glenrose
Engineering, Inc.

Amanda Van Epps, PhD Candidate in Civil Engineering, The University of Texas at
Austin

Introduction

Every day each Austin resident generates about 70 gallons of wastewater. Even though more than half of this wastewater is relatively clean and safely reusable, all of it gets pumped to Austin's treatment plants, processed with oxygen and chemicals and discharged to the Colorado River. As External Stakeholders we have been working with the City to develop policies, ordinances, and educational information to allow and encourage Austin residents to reuse this gray water. Gray water reuse can nourish our gardens, reduce fire and foundation cracking risks, and sustain irreplaceable urban forests. Gray water reuse can preserve lake levels and river flows. Its reuse also



n to a

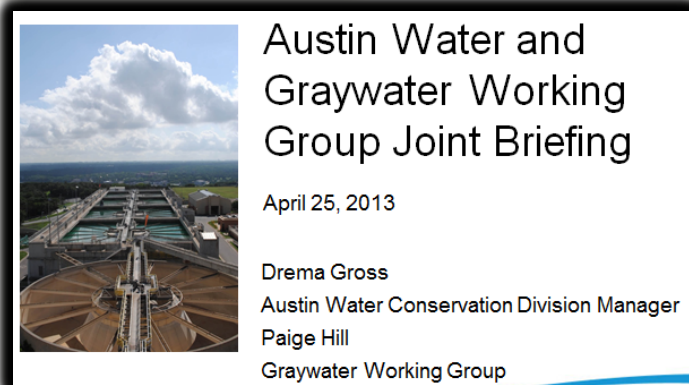
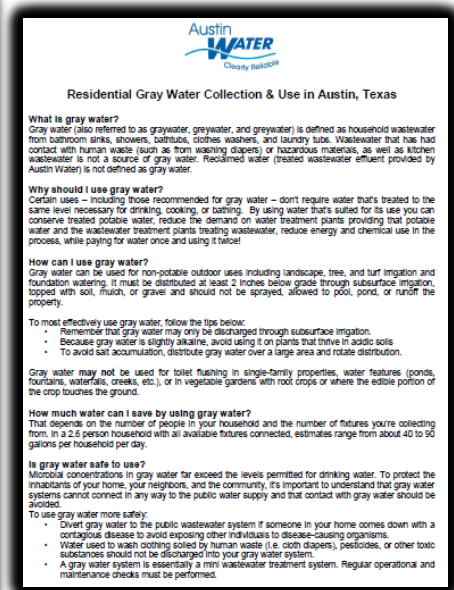
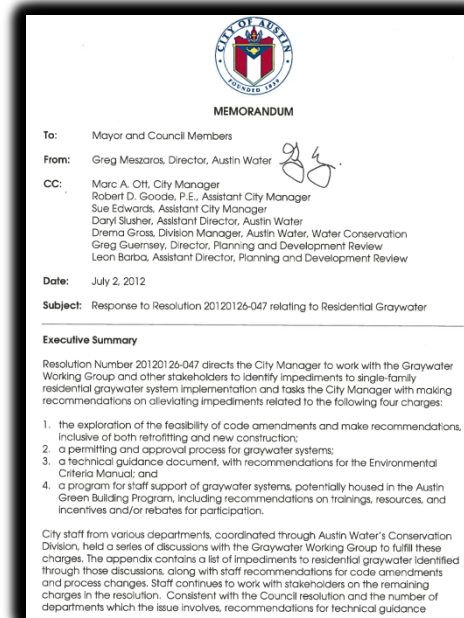
External Stakeholder Comments
October 8, 2012

Boards and Commissions

- Mechanical, Plumbing and Solar Board
 - Charged with hearing and deciding appeals of orders, decisions, or determinations made by the Building Official relating to the application and interpretation of the Mechanical Code, Plumbing Code and Solar Code
- Environmental Board
 - Charged with an advisory capacity on all projects and programs which affect the quality of life for the citizens of Austin and to make recommendations for standards and recommend and initiate specific studies

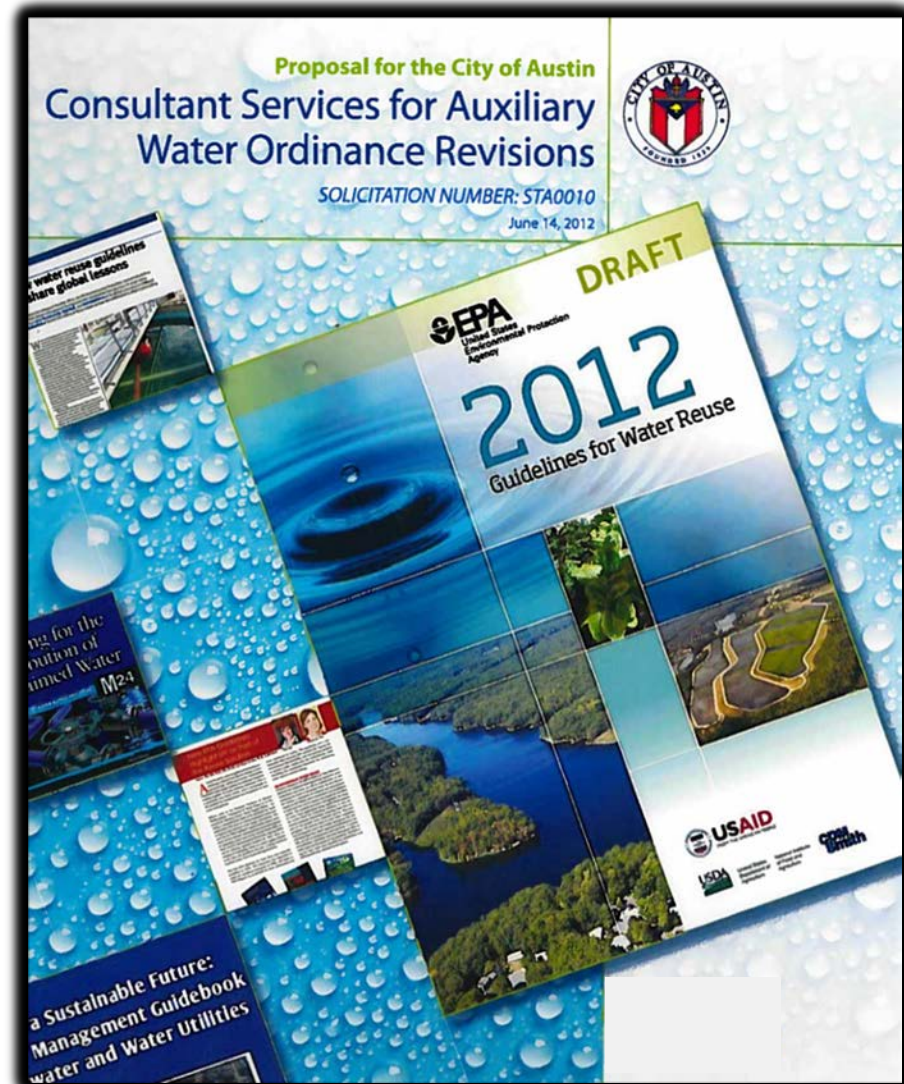
Council Presentation and Final Products

- Joint briefing given to City Council by Conservation Manager and Citizen Stakeholder representative
- Memorandums detailing responded to charges in the resolution submitted to City Council by deadlines stated in resolution
- Developed material populated on Water Conservation Website



Third Party Professional Consultant Contract

- Reviewed all City of Austin Auxiliary policies
- Affirmed all recommendations of workgroup
- Noted that single point of contact was preferable
- Provided basis for backflow protection relief
- Provided independent verification of proposed policies and rules



Lessons Learned

- Smaller subgroups accomplished goals more effectively
- All stakeholder views must be considered
- Constant communication with stakeholders is critical
- Stakeholder ownership of final product is preferred
- Professional Third Party Verification

Next Steps

- Complete guidance document with stakeholder input
- State legislation
- Analyze potential incentive program
- Promote graywater use in Austin
- Continue work on a National Level



Questions?

Robert Stefani

Conservation Program
Specialist

(512) 974-9302

Robert.Stefani@austintexas.gov