

**Council Meeting: September 29, 2009**

**SUBJECT:** Consider Municipal Code Revisions to Allow for the Filtering of “Graywater” and the reuse of Filtered Gray Water for Household Purposes - Study Issue

**REPORT IN BRIEF**

Council adopted a 2009 Study Issue, DPW 20 to “Consider any code revisions that would be necessary to allow for the filtering of “graywater” and the reuse of the filtered graywater for household purposes” (Attachment A).

Use of graywater is governed by the California Plumbing Code (CPC). Previous CPC regulations were considered onerous, and felt to hinder, rather than facilitate the legal use of graywater. Modifications were recently adopted by the California Building Standards Commission (CBSC) that better facilitate use of graywater, and these changes are now in effect in Sunnyvale. There is, however, some concern that the new regulations go a bit too far and do not provide enough protection of public health and water quality.

Staff recommends that Council postpone any policy action on this issue at this time. Staff intends to participate in the County Graywater Working Group, to assist in the development of the model ordinance to provide nominal permitting requirements to better protect public health, and to return to Council with recommendations on the model ordinance.

**BACKGROUND**

Per Health and Safety Code Section 17922.12, “graywater” includes but is not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.

**Recent State Actions**

Senate Bill 1258, signed by the Governor in 2008, enacted new statutes in the Health and Safety Code and amended statutes in the Water Code. These statutes, effective January 1, 2009, included requirements that directed the Department of Housing and Community Development (HCD) to propose to the California Building Standards Commission (CBSC) building standards for the

construction, installation, and alteration of graywater systems for residential indoor and outdoor uses.

The direction provided by the enactment of SB 1258 requires that HCD propose for adoption graywater standards during the next triennial code adoption cycle of the CBSC. The CBSC established the next adoption cycle effective January 1, 2009, and HCD has been developing its rulemaking, including graywater systems, in order to meet the schedule established by the CBSC.

The graywater standards existing in early 2009, contained in the California Code of Regulations (CCR), Title 24, California Plumbing Code, part 5, appendix G, were based upon requirements for private sewage disposal. These standards were found to be overly prescriptive and antiquated, and not readily usable by persons seeking to install graywater systems for the purpose of water conservation.

In a separate action, on February 27, 2009, Governor Schwarzenegger issued a proclamation declaring a drought to be in existence and a state of emergency to exist within California. The proclamation directed, to the extent allowed by applicable law, state agencies within his administration to prioritize and streamline permitting and regulatory compliance actions for desalination, water conservation and recycling projects to provide drought relief.

Given the extensive code adoption process, adherence to the current triennial code adoption cycle schedule would make the proposed building standards effective at the local level on January 1, 2011, as estimated by the CBSC. A delay of nearly 18 months in the effective date of graywater building standards would not address the Governor's declared emergency for the effective conservation of California's water resources. Accordingly, HCD proposed adoption of revised building standards through the emergency adoption process. These revised building standards were approved by the CBSC and became effective on August 4, 2009. A 45-day comment period on the new standards began on September 4, 2009 and will continue until October 19, 2009. The revised standards remain in effect for 180 days. If further action to formally adopt the revisions occurs within that period, the revised standards would remain in effect. If no action is taken, they would no longer be in effect after 180 days.

Sunnyvale utilizes the California Plumbing Code (CPC) in which these revised standards are contained, and these revisions are currently in effect for our city.

## Revised Standards

The intent of the revisions to the CPC is stated as follows:

1. Conserve water by facilitating greater reuse of laundry, shower, lavatory and similar sources of discharge for irrigation and/or indoor use.
2. Reduce the number of non-compliant graywater systems by making legal compliance easily achievable.
3. Provide guidance for avoiding potentially unhealthful conditions.
4. Provide an alternative way to relieve stress on a private sewage disposal system by diverting the graywater.

The revised standards identify three types of residential graywater systems. These are:

1. Clothes Washer System and/or Single Fixture System
2. Simple System (discharge capacity of 250 gallons per day or less)
3. Complex System (discharge capacity over 250 gallons per day)

The revised standards specify 12 conditions for construction and use of the Clothes Washer System and/or Single Fixture System, including no potable water connection, two (2) inches of cover at the release point and no ponding or runoff, and exemption from construction permit requirements. The new standards do provide for the enactment of an ordinance or resolution by a local government to institute permitting requirements if desired by the local agency.

Both Simple and Complex Systems require construction permits. The enforcing agency may elect to exempt such systems from permit requirements after consulting with any public water system providing drinking water to the dwelling.

## Local Response

In response to the revisions to the building standards relating to graywater, the Santa Clara Valley Water District (SCVWD) has convened the Santa Clara County Graywater Working Group. This group met on September 1, 2009, and representatives of a number of water retailers in the bay area, SCVWD staff, and local agency building inspectors participated in the meeting. Two primary concerns emerged from the discussion. The first was about the protection of the water quality of groundwater resources in the face of continued use of graywater for irrigation. The second was a fear that cross-connections (connection between potable water system and discharge line from a sink for instance, whereby wastewater could enter potable water system) could occur if no permitting or inspection is required for graywater installations. Water District representatives indicated there is no data on water quality effects on groundwater from the use of graywater. Typically the Water District utilizes a

minimum depth to groundwater requirement to protect groundwater quality and they have extensive data on groundwater table elevations for the Santa Clara Valley region.

For the second concern related to possible cross-connections, the Graywater Working Group is forming a subgroup to develop a model ordinance that could be used by local agencies. The goal of the model ordinance would be to specify minimal requirements for permitting, or perhaps even just registering graywater installations, along with inspection requirements, to best protect potable water supplies from any cross connection, and so that local agencies would know where the graywater installations are located and could communicate with owners if any concerns developed over the long-term.

### **EXISTING POLICY**

The following existing city policies are from the Water Resources Sub-element of the General Plan:

#### **3.1 WATER RESOURCES: GOALS, POLICIES AND ACTION STRATEGIES**

**GOAL B: Water Conservation - Promote more efficient use of the City’s water resources to reduce the demands placed on the City’s water supplies.**

Policy B.1: Lower overall water demand through the effective use of water conservation programs designed to increase water use efficiency in the residential, commercial, industrial and landscaping arenas, partnering with our wholesalers.

**GOAL D: Water Quality - Ensure that all water meets state and federal standards for aesthetics, quality and health.**

Policy D.1: Maintain and update a comprehensive water quality-monitoring program that meets or exceeds all state and federal requirements, while also meeting specific City and residents’ needs.

### **DISCUSSION**

During its development of revised standards, HCD received significant comment from stakeholders relative to the usage of graywater non-potable water reuse systems. Topics covered in the comments included mitigation of health related concerns, that current building standards addressing usage of graywater are not usable, and that the building standards developed through the HCD’s focus group meetings are usable and represent a good beginning in this conservation effort.

These proposed building standards offer a number of alternatives which have the added benefit of encouraging the development and installation of graywater systems that manufacturers, installers, contractors and homeowners would find usable and would, when required, be more likely to obtain permits and necessary approvals. Testimony offered during HCD’s focus group meetings suggested there are thousands of unpermitted graywater systems in use, principally due to the poorly designed, unusable building standards that were in place prior to the recent emergency adoption of revised standards. It is not known to what extent these unpermitted systems exist within Sunnyvale. While conservation of water resources is critical, so is the protection of human health.

HCD indicates that cities and counties that have previously experienced severe drought conditions are allowing graywater systems to support the development and need for usable graywater building standards in order to standardize and enforce consistent statewide requirements. Building standards which promote usage and statewide uniformity generally have a higher acceptance from one locale to another and consequently, would promote usage of such water conservation measures.

Through participation in the County Graywater Working Group, Sunnyvale can help shape model ordinance language for nominal permitting and inspection requirements, so that graywater use can be facilitated and public health can be protected. Upon development of the model ordinance for the county, Sunnyvale would have the option of adopting it as is, making modifications to suit particular local needs, or to leave existing requirements in place as detailed in the CPC.

**FISCAL IMPACT**

No fiscal impact is anticipated from the recent adoption of revised building standards relative to graywater systems. If model ordinance changes were adopted by the city, very minor costs may be incurred for permitting and inspection, which could be mitigated by permit fees if desired.

**PUBLIC CONTACT**

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, at the Sunnyvale Senior Center, Community Center and Department of Public Safety; and by making the agenda and report available at the Sunnyvale Public Library, the Office of the City Clerk and on the City's Web site.

**ALTERNATIVES**

1. Implement the newly revised building standards as adopted by CBSC, without making any changes, including no permit requirements for Clotheswasher and Single-fixture Systems.
2. Take no action on this issue at this time. Reconsider this issue following staff’s participation in the Santa Clara County Graywater Working Group, toward development of a model ordinance to include nominal permitting requirements, as well as potentially design guidance for homeowners and comments on the emergency building standards modifications. Staff to return to Council with recommendations related to the model ordinance.
3. Consider alternate plumbing code requirements, to be developed by staff and subject to full state requirements for proving the appropriateness of code requirements other than those adopted by the state.

**RECOMMENDATION**

Staff recommends Alternative No. 2: Take no action on this issue at this time. Reconsider this issue following staff’s participation in the Santa Clara County Graywater Working Group, toward development of a model ordinance to include nominal permitting requirements, as well as potentially design guidance for homeowners and comments on the emergency building standards modifications. Staff to return to Council with recommendations related to the model ordinance.

Alternative No. 2 will allow Council to consider permitting or registration requirements for graywater systems that would be far less onerous than the previous regulations, but would put in place nominal requirements that are more protective of water quality and public health than the newly adopted CPC regulations. The new regulations will allow local agencies to adopt an ordinance to implement permitting, if desired.

Reviewed by:

Marvin A. Rose, Director, Department of Public Works  
Prepared by: Lorrie B. Gervin, Environmental Division Manager

Approved by:

Gary M. Luebbers  
City Manager

**ATTACHMENTS**

- A. Copy of study issue paper DPW 20 *Consider any code revisions that would be necessary to allow for the filtering of “graywater” and the reuse of the filtered gray water for household purposes.*

## Proposed 2009 Council Study Issue

**DPW 20 Consider any code revisions that would be necessary to allow for the filtering of "gray water" and the reuse of the filtered gray water for household purposes.**

**Lead Department** Public Works  
**Element or Sub-element** 3.0 Environmental Management  
**New or Previous** New  
**Status** Pending      **History 1 year ago** None      **2 years ago** None

**1. What are the key elements of the issue? What precipitated it?**

At the December 9, 2008 Council meeting, discussion took place to consider code revisions to allow filtering of gray water for household use. The issue was sponsored by Councilmembers Whittum and Swegles.

**Purpose** - Regulatory/Health Issues - Gray water is wastewater that has been used only for certain purposes that are generally considered cleaning, such as the washing of fruit, bathing, hand washing and teeth brushing. If gray water is kept separate from other sanitary waste, and receives some amount of local treatment, it is possible to use it for non-potable uses. Ensuring that this separation remains, and that the gray water is put only to certain, appropriate uses, is a health and safety issue that must be dealt with in developing the use of gray water. Regulations exist, and investigation has been performed by others as to the feasibility of using gray water for such appropriate purposes

**Water Conservation** - The use of gray water at individual sites has the potential to offset potable water use for landscape irrigation, toilet flushing, and perhaps other outdoor uses. Such usage would also reduce the amount of wastewater going to the water pollution control plant and requiring treatment.

**City Role** - Given that this is a use of a particular water source at a particular site, gray water would not involve City infrastructure, but City roles of education about the uses and or concerns with gray water might be appropriate, and possibly some type of regulatory oversight role, to ensure that health and safety issues are addressed. This role would need to be researched vis-a-vis other regulatory purviews such as Dept of Health Services and Regional Water Quality Control Board.

**2. How does this relate to the General Plan or existing City Policy?**

**3.1 WATER RESOURCES: GOALS, POLICIES AND ACTION STRATEGIES**

**GOAL B: Water Conservation** - Promote more efficient use of the City's water resources to reduce the demands placed on the City's water supplies.

**Policy B.1:** Lower overall water demand through the effective use of water conservation programs designed to increase water use efficiency in the residential, commercial, industrial and landscaping arenas, partnering with our wholesalers.

**GOAL D: Water Quality** - Ensure that all water meets state and federal standards for aesthetics, quality and health.

**Policy D.1:** Maintain and update a comprehensive water quality-monitoring program that meets or exceeds all state and federal requirements, while also meeting specific City and residents' needs.

**3. Origin of issue**

**Council Member(s)** Whittum, Swegles  
**General Plan**  
**City Staff**  
**Public**  
**Board or Commission** none

4. **Multiple Year Project?** No **Planned Completion Year** 2009

5. **Expected participation involved in the study issue process?**

**Does Council need to approve a work plan?** No  
**Does this issue require review by a Board/Commission?** No  
**If so, which?**  
**Is a Council Study Session anticipated?** No  
**What is the public participation process?**  
 Standard participation through the Council public hearing process.

6. **Cost of Study**

**Operating Budget Program covering costs**  
 344 Wastewater Treatment  
**Project Budget covering costs**  
**Budget modification \$ amount needed for study**  
 \$40,000.00

**Explain below what the additional funding will be used for**  
 Use of outside specialists knowledgeable in the field to consider federal and state regulatory requirements, and the health implications based upon standard practices of the water industry for the use of gray water in varying situations.

7. **Potential fiscal impact to implement recommendations in the Study approved by Council**

**Capital expenditure range** None  
**Operating expenditure range** \$51K - \$100K  
**New revenues/savings range** None  
**Explain impact briefly**  
 Operating expenses to monitor/regulate gray water use if City adopts a program

8. **Staff Recommendation**

**Staff Recommendation** Against Study

**If 'For Study' or 'Against Study', explain**

Staff recommends against this study because there is no outside funding source identified and staff workloads are already at maximum levels due to increasing regulatory mandates.

9. **Estimated consultant hours for completion of the study issue**

200

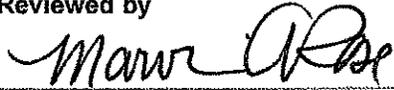
Managers	Role	Manager	Hours
	Lead	Gervin, Lorrie	Mgr CY1: 40 Mgr CY2: 0

	Staff CY1:	40	Staff CY2:	0
Support Craig, Jim	Mgr CY1:	25	Mgr CY2:	0
	Staff CY1:	40	Staff CY2:	0

Total Hours CY1: 145  
Total Hours CY2: 0

**Note: If staff's recommendation is 'For Study' or 'Against Study', the Director should note the relative importance of this Study to other major projects that the Department is currently working on or that are soon to begin, and the impact on existing services/priorities.**

Reviewed by

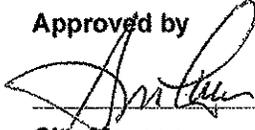


Department Director

1/13/09

Date

Approved by



City Manager

1-14-09

Date

**Addendum**

**A. Board / Commission Recommendation**

**Issue Created Too Late for B/C Ranking**

<b>Board or Commission</b>	<b>Rank</b>	<b>Rank</b>
	<b>Rank</b>	<b>1 year ago</b>
		<b>2 years ago</b>
Arts Commission		
Bicycle and Pedestrian Advisory Committee		
Board of Building Code Appeals		
Board of Library Trustees		
Child Care Advisory Board		
Heritage Preservation Commission		
Housing and Human Services Commission		
Parks and Recreation Commission		
Personnel Board		
Planning Commission		

**Board or Commission ranking comments**

**B. Council**

**Council Rank** (no rank yet)  
**Work Plan Review Date** (blank)  
**Study Session Date** (blank)  
**RTC Date** (blank)  
**Actual Complete Date** (blank)  
**Staff Contact**