

What is Graywater?

Graywater (sometimes spelled greywater) is defined as wastewater which originates from showers, bathtubs, bathroom sinks and clothes washing machines. Graywater may contain fats, oils, grease, hair, lint, soaps and household cleaners. However, it can be safely used to irrigate most landscapes (except root crops or edible crops that touch the soil) as long as guidelines are followed preventing potential health threats and environmental contamination.

It is very important to note that graywater does not include wastewater from toilets, diaper washing, kitchen sinks or dishwashers. Wastewater from these sources is classified as “black water” and cannot be used because of the risk of contamination by bacteria, viruses and other pathogens.

Graywater is usually sent to a wastewater treatment plant after a single use. In turn, treated water from the wastewater treatment plant is discharged to the ocean or other waterway. By reusing graywater to irrigate landscapes, we can save water as well as the energy associated with pumping and wastewater treatment. Reusing graywater can also relieve stress on septic systems.



Another benefit of graywater reuse, unlike some other water conservation methods (i.e., rainwater harvesting), is that it is available during peak irrigation season (May - October) and is consistently generated as a result of our daily activities.

California Graywater Code & Local Regulations

In January 2010, the California Building Standards Commission adopted a change to the California Plumbing Code (Title 24, Part 5, Chapter 16A) which allows the use of residential graywater for landscape irrigation purposes. The new regulations allow homeowners in California to install clothes washer graywater systems, also called “laundry to landscape” systems, in their homes without a permit, but in accordance with a set of minimum requirements (see “Laundry to Landscape” article on back).

All other types of graywater systems (i.e., shower, bathtub and bathroom sink) require a permit to install. The permit requirements vary depending on how many gallons of graywater are collected per day. Systems collecting 250 gallons or less per day are classified as “Simple” and

those collecting more than 250 gallons per day are classified as “Complex.” In general, Simple graywater systems have fewer requirements. The chart below summarizes the graywater permitting requirements. Should your system require a permit, please contact your local Planning Department for details.

Most water agencies require backflow prevention if a pump is used to distribute the graywater or if a storage tank greater than 200 gallons is used.

Type of System	Permit Required
Laundry to Landscape	No
Shower/Bathtub/Bathroom Sink to Landscape (Simple ≤ 250 gallons/day)	Yes
Shower/Bathtub/Bathroom Sink to Landscape (Complex >250 gallons/day)	Yes

Frequently Asked Questions:

How Much Water Can Be Conserved By Using Graywater?

There’s no doubt that using graywater to irrigate can save water. The question is, “How much water can be saved?” There is no single answer to this because there are several variables involved. The first is the number of graywater systems installed at a home. The more fixtures (i.e., laundry, sinks and showers) plumbed for graywater, the more graywater that will be available for landscape needs.

The second variable is the type of graywater system(s) installed. For instance, an average home uses more water (and generates more graywater) from laundering than from showering, and showering normally generates more graywater than bathtubs and bathroom sinks.

The last variable is whether the clothes washer, showerhead or faucet aerator is considered high efficiency. A high-efficiency clothes washer uses about one-half the amount of water as a traditional washer, thereby generating less graywater available for reuse.

As “Laundry to Landscape” systems are likely to provide the greatest water savings and be the most common due to ease of installation and lack of permitting requirements, the amount of water that can potentially be conserved from these systems has been used to estimate conservation savings. For a single-family household that washes five loads of laundry per week using a high-efficiency clothes washer, the estimated water savings is approximately 2,600 gallons per year. If a household washes more than five loads per week, or uses an older (i.e., non-high-efficiency) washer, the amount of graywater produced will increase.

Do I Need to Use Special Soap or Detergent With a Graywater System?



To keep your plants healthy, it is best to avoid soap with the following ingredients: chlorine or

bleach, peroxygen, sodium perborate, sodium tryptochlorite, boron, borax, petroleum distillate, alkylbenzene, “whiteners”, “softeners” and “enzymatic” components. For more information visit: www.harvestingrainwater.com/greywater-harvesting/greywater-compatible-soaps-and-detergents/

Should I Consider Installing a Graywater System?

Graywater systems can save water, and if you live in areas without sewer service, relieve stress on septic systems. However, installing water conservation fixtures and high-efficiency appliances should be the first step in reducing residential water usage because of the proven water savings. We recommend the following fixtures and efficiency ratings for the most optimal water savings:

- Toilets: High-efficiency toilets that use 1.28 gallons or less per flush.
- Showerheads: Flow rate at 2.0 gallons per minute or less.
- Bathroom sink faucets and aerators: Flow rate of 0.5 gallons per minute.
- Clothes washing machines: A Water Factor (WF) rating less than 4.5.

“Laundry to Landscape” System Requirements

“Laundry to Landscape” (“L to L”) systems are those that use a single domestic clothes washing machine with no tanks, pumps or treatment in a one or two-unit family dwelling. “L to L” graywater systems do not require a permit. However, if you are considering an “L to L” system, you will need to meet twelve basic requirements.

1. Notification of City or County as to proposed location and installation of a graywater system may be necessary.
2. Design must allow user to direct graywater flow to irrigation field, or sewer or septic system. Direction control of graywater must be clearly labeled and readily accessible to the user. During the rainy season, graywater systems should be turned off.
3. The installation, change, alteration or repair of the system may not include a potable water connection or a pump and may not affect other building, plumbing, electrical or mechanical components, including structural features, egress, fire-life safety, sanitation, potable water supply piping or accessibility.
4. The graywater must be contained on the site where it is generated.
5. Graywater must be directed to and contained within an irrigation field.
6. Ponding or runoff is prohibited and is considered a nuisance.

7. Graywater may be released above the ground surface provided at least two (2) inches of mulch, rock, or soil or a solid shield covers the release point. Other methods that provide equivalent separation are also acceptable.

8. Systems must be designed and operated to prevent graywater contact with humans and domestic pets.

9. Water used to wash diapers or other infectious garments may not be used and must be diverted to the building’s sewer or septic system.

10. Graywater may not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste from home photo labs or similar hobbyist or home occupational activities.

11. Exemption from construction permit requirements does not grant authorization for any graywater system to be installed in a manner that violates other provisions of state code or any other laws or ordinances of the Enforcing Agency.

12. An operation and maintenance manual must be maintained by the owner for all graywater systems. Directions in the manual must indicate the manual is to remain with the building throughout the life of the system and indicate that upon change in ownership or occupancy, the new tenant must be notified that the structure contains a graywater system.

Other Resources & Links

Oasis Design: www.oasisdesign.net

Greywater Action: www.greywateraction.org/

Rainwater Harvesting for Dry Lands and Beyond by Brad Lancaster:

www.harvestingrainwater.com/greywater-harvesting/

County of Santa Cruz: www.sccoplanning.com/pdf/bldg/graywater_residential.pdf and sccounty01.co.santa-cruz.ca.us/eh/Water_Resources/laundry-landscape.pdf



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More information is available at:

www.scwd2desal.org

Esta información está disponible en español.
Por favor llame al (831) 475-8500.