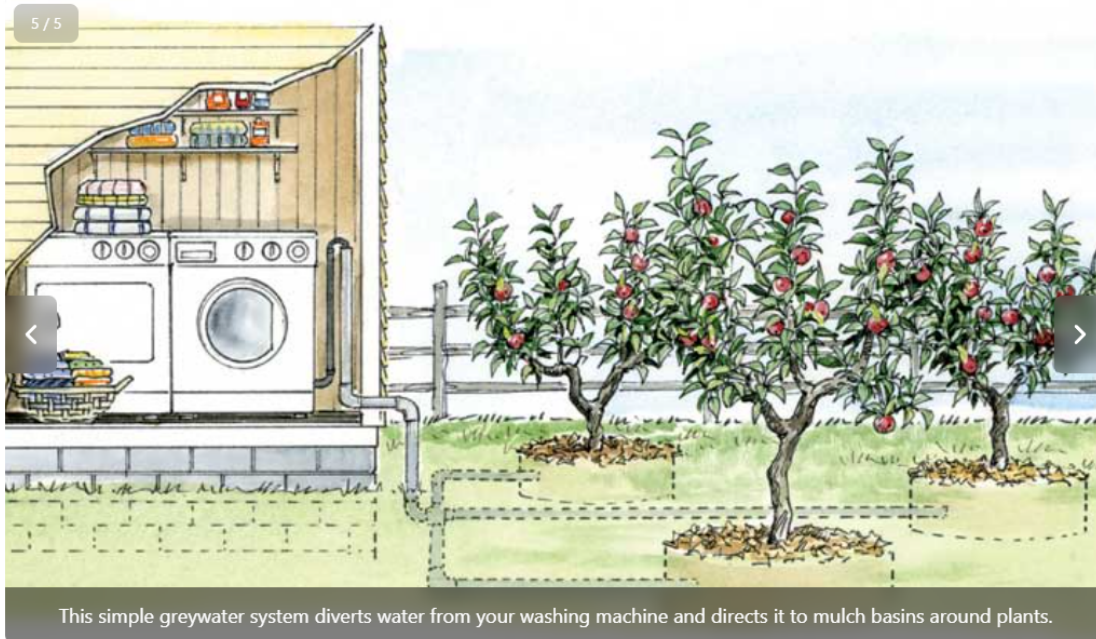


# GRAYWATER IN NICASIO

## *A Good Thing*



(Mother Earth News)

### What is Graywater?

Graywater is untreated waste water collected from bathtubs, showers, washing machines and bathroom sinks that, in most circumstances and with proper precautions, can be reused. A typical household of 2-3 people produces an average of 90 gallons per day of graywater (U.C. Marin Master Gardeners). This water can be reused for landscape irrigation and toilet flushing, conserving freshwater supplies for drinking and other essential needs ([Graywater: From Laundry to Landscape](#))

Graywater does not include wastewater from toilets, urinals, kitchen sinks, dishwashers, photo lab sinks, or water from soiled diapers. It is not recycled water that is distributed through “purple pipes,” nor does it include rainwater that is captured and reused.

### Why Should Nicasio Residents be Thinking about Graywater Now?

The amount of available fresh water in West Marin is expected to become more erratic and unpredictable with climate change. As we have seen this year, wet periods are becoming wetter and droughts are becoming longer and more extreme. Unpredictable precipitation patterns are expected to continue into the foreseeable future.

Because most Nicasio residents rely on wells for their water, reusing graywater is one relatively easy way to stretch our water supply. This is particularly important during droughts, as graywater is a reliable way to irrigate trees and gardens. Diverting graywater to landscaping also reduces wastewater flow into septic systems, which can help extend their operational life.

### Does Marin County Allow Residents to Install Graywater Systems?

Yes. The County has an excellent web page that provides guidance on how to install and operate graywater systems ([Graywater Systems - Community Development Agency - County of Marin](#)).

### How Can I Use Graywater?

Graywater can be used for outdoor irrigation at residences, multi-family homes and commercial properties. Graywater is purified naturally by soil microorganisms that break down salts, suspended solids, and bacteria. When properly handled, graywater does not pose health issues or contaminate soil. It can improve soil health by contributing nutrients.

Graywater can also be used for toilet and urinal flushing. However, these uses require treatment of the graywater for indoor use. Contact [Marin County](#) for more information on how these systems work and approved technologies.

### What Types of Graywater Systems Does Marin County Allow?

Marin County recognizes four basic systems:

- Clothes Washer Systems (aka “Laundry-to-Landscape”) that connect a clothes washer to an irrigation line that discharges the graywater into the landscaping.
- Simple Graywater Systems that collect up to 250 gallons per day of graywater from multiple points – clothes washers, tubs, showers, and bathroom sinks in a one or two story dwelling – and then, through an irrigation line, discharge the water into the landscaping. Marin County also calls this a “Simple Isolated System,” because it does not include pumps or other mechanical connections.
- Complex Graywater Systems that collect more than 250 gallons per day from multiple points and typically include pumps, surge tanks and filtration systems before the graywater is discharged through an irrigation line into the garden. These systems may also include a branched drain or a pumped system.
- On-Site Treated Non-potable Graywater Systems that collect graywater intended to supply uses such as toilets, urinals, trap primers for floor drains, and floor sinks. The graywater must be treated to minimum water quality standards to be reused.

By [state law](#), graywater systems must never be connected to any potable water system without an air gap or other physical device that prevents backflow of the graywater into the potable water. Additionally, the entire graywater system must be located on the parcel where the residence is located. In Marin, all graywater generated must be discharged and contained within the property boundary.

Marin County exempts Clothes Washer (Laundry-to-Landscape) and Simple Graywater Systems from construction permits. The County requires that the Environmental Health Services Department be notified of the installation of Simple Graywater Systems (Marin County Environmental Health Services - [Simple Graywater System Notification](#)). Complex and onsite treated non-potable graywater systems require construction permits and in some cases a plumbing permit from Marin County.

### Key Dos and Don'ts for Graywater Systems

#### **DO:**

- Determine how much water you need to irrigate your yard. Make sure your yard is large enough to handle the volume of graywater that is produced. Make sure you consider continued improvements in indoor conservation (water efficient toilets, washing machines, showerheads, and faucets) in your estimate of how much graywater your system will collect.
- Water trees (ornamentals and fruit), bushes and flowers first, then water edibles that are neither leafy greens nor root crops.
- Use plant friendly detergents.
- Evaluate your property's suitability for graywater. Consider how you will deliver water to your garden and whether there are any access issues or constraints. Graywater must be discharged under at least 2 inches of cover material (mulch, woodchips, rocks. As indicated in the table below, setbacks are required near water bodies or wells.

### Setback Requirements in Feet

Minimum Horizontal Distance Required From:	Tank	Irrigation Field	Disposal Field
Building Structures <sup>1</sup>	5	2	5
Property Line adjoining private property	5	1.5 <sup>2</sup>	5
Water supply wells <sup>3</sup>	50	100	100
Stream and lakes <sup>3</sup>	50	100 <sup>4</sup>	100
Sewage pits or cesspools	5	2	5
Sewage disposal field	5	4 <sup>5</sup>	4 <sup>5</sup>
Septic Tank	0	5	5
Onsite domestic water service line	5	0	0
Pressurized public water main	10	10	10

#### DON'T:

- Don't spray irrigate graywater or allow the water to pond.
- Don't use graywater on lawns or other locations where humans are likely to come into contact with the untreated water.
- Don't use graywater on root crops and leafy vegetables. Avoid applying graywater to acid-loving plants.
- Don't use chlorine or other plant-toxic additives in your laundry or wash water.
- Don't use unfiltered graywater in a drip system, as it may cause clogging.

**Resources:**

Marin County Graywater Systems; Graywater Installers in Bay Area;

DIY Graywater Instructional Video

Gray Water Use in the Landscape, Robert Kourik, 1988, Metamorphic Press

The Integral Urban House, Self-Reliant Living in the City, Sierra Club Books

Shades of Graywater | Marin Master Gardeners

Grey Water Action

Oasis Design, Art Ludwig

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