

# Greywater Reuse



## What?

'Greywater' is household wastewater from baths, showers, basins, laundries and kitchens. However, kitchen wastewater is not recommended for reuse in greywater diversion or treatment systems as it contains large amounts of grease, fat, food waste and detergent. Greywater does not include wastewater from toilets, that is, 'blackwater' as it contains human and/or animal wastes.

## Why?

Greywater can be reused instead of using potable (drinking) water to water the garden. If treated appropriately it can be reused for flushing toilets and in washing machines. Watering the garden with greywater may also reduce the need for fertilisers as nutrients in the greywater may be absorbed by the vegetation.

## How?

Reusing greywater can be as simple as manual bucketting from the laundry to the garden or as complex as installing greywater diversion, treatment and/or irrigation systems. However, before deciding on a greywater system for your property, there are some factors you may need to consider:

- **Budget** – Costs vary from relatively inexpensive systems such as diverters to complex treatment, storage and irrigation systems that cost up to several thousand dollars.
- **Property location** – It is advisable to check with your local council and governing bodies whether your property is located in an environmentally sensitive area.
- **Existing plumbing** – Accessibility of the greywater pipes inside your home will affect your reuse options.
- **Existing garden landscape and size** – Some systems require space against the laundry's external wall for surge tanks. Others require installation of irrigation systems which may disturb existing plants or soil.
- **Slope of property from greywater source** – A property sloping down from the greywater source may be ideal for a gravity-fed diversion system. A flat property may require a pump to reuse greywater for flushing toilets or raised garden beds.

## Different types of greywater systems

Greywater reuse systems basically fall into two types: diversion device and treatment systems.

**Diversion devices** direct greywater from the laundry or bathroom to the garden for immediate use without making changes to its quality ie greywater is not stored. Greywater from a diversion device must be distributed by sub-surface irrigation (at least 10 cm below the finished surface level of soil or mulch). Diversion devices can be installed, without approval from your local council, as long as the device is WaterMark licensed (previously a Plumbing Safety Licence) and certain performance criteria are met.

There are two types of diversion device systems available:

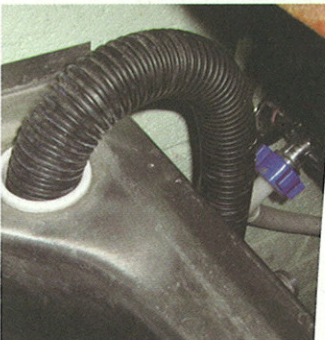
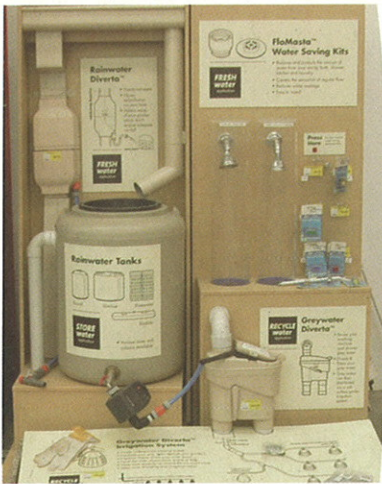
- **Gravity diversion** – most appropriate for properties that have a slope downwards away from the house to the garden or lawn area; and
- **Pumped diversion** – used when the garden or lawn area is uphill away from the house or the area is too flat for a gravity system to work.

**Treatment systems** improve the quality of the wastewater by filtering, disinfecting and treating it. Such systems can include wetlands, intermittent sand filters, membrane filters and aerated wastewater treatment systems. Its higher quality allows it to be used for more purposes including surface irrigation of gardens, toilet flushing and even clothes washing.

Greywater system components should be labelled "Recycled Water – Avoid Contact – DO NOT DRINK." and all safety precautions should be taken.



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### Where to go?

Greywater systems devices and accessories are available at hardware stores and nurseries. NSW Health maintains lists of WaterMark licensed greywater diversion devices and accredited greywater treatment systems.

### How much will it cost?

The cost for a greywater system will vary depending on the type and or components you choose. For instance, a WaterMark licensed greywater diverter costs approximately \$200. The more components used in a diversion system, the greater the costs ie removable filters from \$190 or irrigators from \$700 while a pump-driven diversion system can cost upward of \$1000. Greywater treatment systems are notably more expensive with the capacity to collect, store, treat and disinfect greywater, costing \$2300 to \$15000. All greywater systems require installation by a licensed plumber which will also add labour costs.

### Troubleshooting?

The level of greywater reuse in the garden needs to be balanced with the amount of water and nutrients that the plants and soil in your garden can absorb. Regular checks will ensure that the use of greywater is not damaging the health of your garden. Some signs of unhealthy soil, lawn and plants include:

- Damp and boggy ground hours after irrigation;
- Surface ponding and run-off of irrigated water;
- Poor or excessive vegetative growth with reduced fruit;
- Evidence of pests and diseases on plants;
- Unusual odours;
- Clumping of soil; or
- Fine sheet of clay covering surface.

If any of the above signs are identified you should reassess the amount or quality of greywater you are using and check that your system is working correctly. Opt for garden-friendly detergents that are biodegradable and low in salts. Consider applying a soil rewetting agent every 6 months. Avoid reusing greywater generated from chemical cleaning, nappy washing, hair dyes or car/machinery maintenance.

Once a greywater treatment system is installed it is the owner's responsibility to ensure it is maintained for the life of the installation and any conditions of approval from your local council must be carried out as specified. Maintenance can include regular cleaning, periodic desludging of surge tanks and replacement of filters.

### Want to know more?

General information, factsheets & guidelines:

[www.waterforlife.nsw.gov.au/recycling/greywater/greywater\\_fact\\_sheets](http://www.waterforlife.nsw.gov.au/recycling/greywater/greywater_fact_sheets)

Guidelines & accredited systems:

[www.health.nsw.gov.au/public-health/ehb/general/wastewater/wastewater.html](http://www.health.nsw.gov.au/public-health/ehb/general/wastewater/wastewater.html)

Salts, nitrogen & phosphorus content of washing detergents available in Australia:

[www.lanfaxlabs.com.au](http://www.lanfaxlabs.com.au)

Contact your local council:

Camden	4654 7777
Campbelltown	4645 4000
Liverpool	1300 36 2170
Wollondilly	4677 1100
Macarthur Centre for Sustainable Living	4647 9828