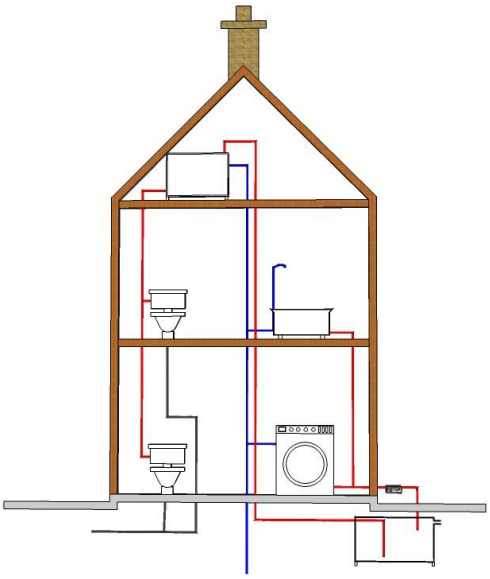
Greywater Systems

Greywater systems come in many shapes and sizes. An appropriate system should be designed to match site requirements. Greywater systems can either be simple or complex. A simple greywater system requires additional infrastructure in order for the system to work. The simplest system would involve a person using a bucket to collect water from a washbasin (bathtub, shower, or washing machine) and then use that water either outside or inside the house for any non-potable use. The most complex greywater system would involve a system that collects the maximum amount of water from all possible sources and uses the greywater for all potential uses. This system would require some level of treatment in order to remove bacteria. Also, this system would require large storage devices, since the sources that produce greywater are rarely used in conjunction with the fixtures that will use the greywater.



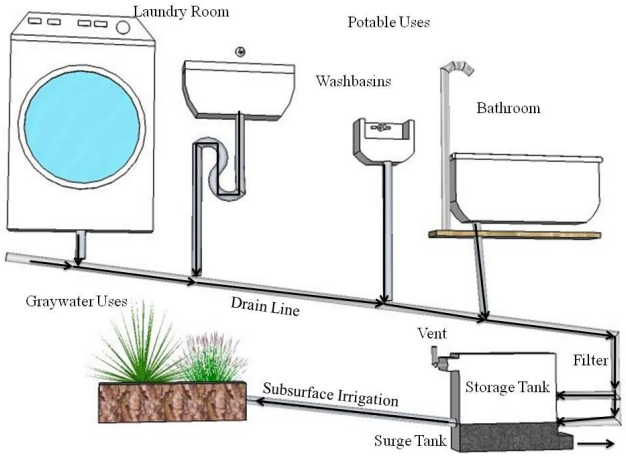
A simple greywater system uses the outflow from showers, bathroom sinks and washing machines for flushing of toilets or outdoor irrigation

A generic greywater system would require separate piping from the existing wastewater plumbing system in a building. The plumbing would lead to a storage device that would retain water, helping meet the water demands of the building. A surge tank would be required to help manage pressure changes. Surge tanks also prevent system failures, blowouts, and other problems that can occur during system operation. Prior to water entering the storage tank, a simple filtration system would need to be installed in order to filter out large particles and hair that may pass through the drains. The particles that pass into the tank would settle out in the bottom of the tank and be removed at a later time. All fixtures utilizing greywater, indoor and outdoor, would be connected to this storage device.

In addition to greywater flowing into the storage tank, potable water would also be connected to the tank to ensure there is always water in the tank for the designated uses. Also, some type of bypass valve would need to be installed in order for the system to function properly. Every

greywater system would be unique to the building or home in which it was installed, and special considerations would be taken to ensure the system functions at an optimal level.

Currently, greywater use is legal in Utah. However, with the regulations that are currently in place, greywater systems can be very difficult to implement successfully. The current regulations state greywater can only be used for subsurface irrigation for single-family residences. This means greywater can only be used outside and has to be put into a drip irrigation system that cannot be above ground. In addition, greywater cannot be discharged directly into any storm sewer system or any waters of the state. All greywater systems in Utah require a permit from local health departments. Some local health departments have established more stringent rules for greywater systems than the state has specified in the water code. Local health departments can also require additional items, such as a third party to be in charge of operation, maintenance, and repairs of these systems. Any time the system is modified or repaired, it is required that the local health department be notified. All permitting requirements and regulations for greywater use systems are located in the Utah Code under R317-401.



A legal greywater system in Utah is only allowed to use the water for sub-surface irrigation purposes

The average water costs in Utah are $1.67 per 1,000 gallons. This means annually, if a greywater system for a family of four saves 30,000 gallons of water, an average Utah home owner could save approximately $50 if they were to install a greywater use system. A small (less than 5,000 gallon storage), simple greywater system installs for approximately $2,000. This translates into more than 40 years for this type of greywater system to pay for itself.

Using this information, it can be determined that at this time, with water costs where they are and with greywater systems costs where they are, it is not economically feasible to install a greywater use system on a residential home in Utah. However, greywater use is still a viable option to conserve water and needs to be considered when planning for the future of Utah's water needs.