energy saver

# Consumer Guide to Home Water Efficiency

A water-efficient home helps you minimize your water use, harness water for reuse, conserve energy, and save money.

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## ENERGY STAR® APPLIANCES

ENERGY STAR-qualified appliances meet criteria established by the U.S. Environmental Protection Agency and use much less water than conventional appliances.

Washing machines that meet ENERGY STAR criteria use 33% less water and use 25% less energy than conventional washers. A washing machine that does not qualify for an ENERGY STAR rating can use 17 more gallons of water with every load of laundry. This equates to the amount of water used in a typical shower.

Dishwashers that qualify for the ENERGY STAR label cost about $35 per year to run and can save almost 4,000 gallons of water over their lifetime.

The costs of a dripping faucet are not just a drop in the bucket – they add up quickly. See the Drip Calculator at water.usgs.gov/edu/activity-drip.html and judge for yourself.

## Why Water Efficiency?

Improving water efficiency in the home can decrease your water usage and save you money. Water heating can account for nearly a quarter of the energy consumed in your home. Meanwhile, toilets can account for almost a third of an average home's indoor water consumption. You can take steps to conserve water without sacrificing conveniences by fixing leaky toilets or replacing them with a water-saving unit, installing low-flow showerheads, and reusing water.

## Ways to Save Water and Energy

### Use Greywater

Any hot water that goes down the drain carries energy with it in the form of heat. That means 80% to 90% of the energy used to heat water in your home is wasted as it flows down the drain. Drain-water (or greywater) heat recovery systems solve this problem by capturing heat energy and using it to preheat cold water entering the water heater or going to other water fixtures. This lets your water heater heat more water and allows you to lower your water heater's temperature. Such drain-water heat recovery systems cost between $300 and $500 and have a two-and-a-half to seven-year payback time.

Greywater systems allow you to reuse up to 60% of your household water for purposes of irrigating your lawn and flushing toilets. If you build a new house, especially in an arid region, you might consider installing a greywater system, which may be custom designed and built, or purchased as a package. Check with your local building code agency to see if greywater systems are allowed in your area. Even if greywater is not currently allowed where you live, you can build a diverter system that will make it much easier–and cheaper–to install a full system in the future. See Further Reading at the end of this fact sheet to learn more.

### Fix Leaks

Fixing leaky faucets and plumbing joints can save up to 20 gallons per day for each leak, which is enough water to wash a load of laundry and run the dishwasher once each day with ENERGY STAR-qualified appliances. If you have leaks, use the Water Wiser® Drip Calculator (see Further Reading at the end of this fact sheet) to find out exactly how much water a leak wastes.

Check for toilet leaks by placing food coloring in the tank. If color appears in the bowl without flushing, you have a leak. Fixing that leak can save nearly half the amount of water an average American family consumes daily.

### Install Low-Flow Fixtures

Low-flow fixtures, such as faucets, showerheads, and toilets, can significantly cut your water consumption.

- Modern faucets use 40% less water than pre-1995 faucets. The aerator, or the screw-on tip of the faucet, determines the maximum flow rate of a faucet. New bathroom faucets typically include aerators that restrict flow rates from 0.5 to 1.5 gallons per minute (gpm). New kitchen faucets usually restrict flow rates to 2.2 gpm. Aerators are inexpensive and can be one of the most cost-effective water conservation measures.
- Showerheads manufactured before 1995 use 50% more water than new models. Replacing them with newer models that have a flow rate of 2.0 gpm can cut your water usage for showers in half. The most common low-flow showerheads consist of aerating showerheads and streamline-flow showerheads. Aerating showerheads mix air with water to form a misty spray while streamline-flow showerheads form individual streams of water and create less steam than aerating ones.

### Consider Low-Flow or Dual-Flush Toilets

New toilets come in many water-saving options and perform as well or better than older models, while using a fraction of the water. All toilets manufactured after 1995 use no more than 1.6 gallons per flush (gpf), while toilets older than 1995 can use as much as 7 gpf. If you decide to purchase a new toilet, consider a high-efficiency toilet, which costs more, but uses no more than 1.3 gpf. Also consider a dual-flush model. It offers a light-duty flush option for liquid waste that uses less than 1 gpf, and a regular flush option for solid waste that uses 1.6 gpf.

### Develop Efficient Lawn and Garden Management Practices

A typical family of four uses roughly 30% of its water on maintaining the yard. Cultivate efficient lawn and garden management practices by:

- Applying a layer of mulch between one and three inches thick around trees and other plants to reduce evaporation and the need for watering.
- Collecting rainwater in barrels or cisterns to maintain the landscape. You can collect rainwater from your roof by connecting your downspout directly to a barrel. This technique is sometimes called “rainscaping” and can also help alleviate storm water runoff and erosion. See Rainwater Harvesting in Further Reading at the end of this fact sheet for more information.
- Watering your lawn wisely to save water and effort. If the grass springs back up after being stepped on, it does not need watering. Turn off automatic sprinklers when it rains or invest in a “smart” irrigation system to apply the necessary amount of water to maintain healthy growing conditions. Water your lawn at dawn, rather than at night, to avoid water loss through evaporation, and to prevent mold from growing during the night.
- Using xeriscaping, which is the practice of designing a landscape that conserves energy and water, especially in arid climates. You can do this by limiting turf areas, irrigating efficiently, using mulches, and selecting native and zone-appropriate plants based on the regional climate. See the Water Conservation Landscaping page at energy.gov/energysaver/design/landscaping-energy-efficient-homes/landscaping-water-conservation for more information.

### FURTHER READING

Energy Saver: Drain-Water Heat Recovery Systems
energy.gov/energysaver/water-heating/drain-water-heat-recovery
eere.energy.gov/library

ENERGY STAR on Clothes Washers
energystar.gov/products/clothes_washers

EPA Water Sense
epa.gov/WaterSense

Rainwater Harvesting
harvesth2o.com

Drip Calculator
drinktap.org

Financial Incentives: Tax credits, incentives, and rebates may be available in your area. Please visit energystar.gov/about/federal_tax_credits for more information.