

# WATER CONSERVATION TOOLBOX

## Tips and resources for water customers

This page includes resources for industrial, commercial and institutional customers as well as tips and resources for residential water customers. Water suppliers can promote the water practices included on this page by implementing water conservation programs appropriate for their communities and by directing their customers to this page.

[Standards for water-efficient homes](#) (WaterSense, EPA)

[Calculate your water footprint](#) (Water Footprint Network)

[Have some fun and learn new tips in the Tip Tank Game!](#) (Water Use It Wisely)



## Water conservation for commercial, institutional and industrial customers

The Minnesota Clean Energy Resource Teams (CERTS) is offering discount prices on pre-rinse spray valves and faucet aerators through August 2013. Avoid losing hundreds to thousands on your water and energy bills each year with these efficiency upgrades. Click here for more information: <http://splash.mncerts.org>.

The Minnesota Technical Assistance Program helps Minnesota businesses develop and implement industry-tailored solutions that prevent pollution at the source, maximize efficient use of resources, and reduce energy use and costs to improve public health and the environment. <http://mntap.umn.edu/index.htm>

## Outdoor water use

Water is used outdoors for residential turf and landscape irrigation, car washing, swimming pools, and other purposes. The rate of water use outdoors is highly dependent upon the climate. In the Twin Cities metropolitan area, outdoor water use accounts for approximately 20% of total annual water use. In years with particularly hot and dry summers, outdoor water use may be as high as 30%.

### Topsoil preparation

High-quality soil increases plants' ability to absorb and hold water effectively, thereby reducing irrigation needs. Well-prepared soil also facilitates deep root growth, which aids infiltration of water.

- **Topsoil preparation following construction activity**  
During construction activity, subsoil may become compacted due to the use of heavy equipment and increased traffic over the site. If construction or grading activities occur on a site that will be landscaped, it is

advisable to stockpile the topsoil and to return the soil to the site once the activities are completed. At least 6 inches of topsoil should be returned to the site before laying sod, seeding, or planting. This amount will help facilitate deep root growth and reduce runoff.

- **Testing soil quality**

Topsoil is the most fertile portion of the soil. A simple soil test will help you identify the pH of your soil and indicate whether an application of lime or acidic compound is needed to change the pH for better plant uptake of nutrients. Although some soils may benefit from the addition of some fertilizers, it is important to not over-fertilize the soil and to follow the application rates posted on the fertilizer bag. Excessive use of fertilizers can pollute water resources and can be potentially harmful to humans, wildlife and aquatic animals.

Some soils may also benefit from the addition of compost, manure, or inorganic materials to promote infiltration and water uptake by vegetation. In general, it is a wise idea to add 2-3 inches of compost, shredded leaves, or other fine organic material to gardens annually, although this may vary depending on soil type and the climate.

## Soil preparation resource

[Sustainable Urban Landscape Information Series](#): Preparing soils for perennial beds, building soil berms, modifying soil pH and more, University of Minnesota

### Water-wise landscapes

Converting a fourth of your lawn from grass to drought resistant turf, plants, and shrubs can reduce your outdoor water use by 20%. Native plants are hardy enough to survive winter cold and summer heat. Once established, native landscapes require little irrigation or fertilization. There are a variety of conceptual approaches to landscape design and management. All the approaches share the goal of reducing water demand, maintenance costs, and use of lawn or garden chemicals. They also attract native wildlife and can help to improve water quality and lower runoff. Water-wise, Xeriscape™, native landscaping, and rain gardens are common terms used to describe these conceptual landscape approaches.

### Landscaping resources

- [Seven Steps to a Water Saving Garden](#) - New York Department of Environmental Protection
- [Rain Gardens: A How to Manual for Homeowners](#) - Wisconsin Department of Natural Resources
- [Sustainable Lawncare Information Series](#) - University of Minnesota, Extension
- [Using Native Plants](#) - University of Minnesota, Extension
- [Garden Designs](#) - Minnesota Department of Natural Resources
- [Sustainable Landscaping](#) - Maplewood, MN
- [Burnsville Rainwater Garden System](#) - Barr Engineering
- [Native Plant Nurseries and Plant Consultants for Central Minnesota](#)- Department of Natural Resources
- [Yard and Garden](#) - Minnesota Pollution Control Agency
- [Plants for Stormwater Design](#) - Minnesota Pollution Control Agency
- [Landscaping with Native Plants](#) - Wild Ones
- [Planting for Clean Water](#) - Blue Thumb
- [A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California](#)



## Lawn and garden watering

Many conventional lawns in Minnesota can stay healthy if they receive 1-1.5 inches of water a week, either through precipitation or irrigation. Deep infrequent watering is generally better for lawns and plants than frequent lighter irrigations, which can cause shallow roots.

### Interesting fact:

“For every 1% that you increase your soil’s organic matter, you increase the water absorption capacity by 16,000 gallons of plant-available water per acre, down to one foot deep” (EPA).

### Watering tips

- Water early in the morning to minimize evaporation.
- Never water faster than the ground can absorb the water.
- Know your soil and its [watering needs](#).
- Next time you water, place 3 to 5 empty tuna or cat food cans at varied distances from the sprinkler
- The time it takes to fill the cans is about how long you should water your lawn (This should take only 15 to 30 minutes).
- Adjust automatic irrigation schedules at least monthly to ensure water use efficiency.
- Step on the grass; if it springs back up when you move your foot, it does not need water.
- Arrange plants in your garden by light and watering needs.
- Consider drip irrigation systems around trees and shrubs (drip systems permit water to flow slowly to roots, encouraging strong root systems; these systems will also cut down evaporation).
- Adjust sprinklers to avoid watering sidewalks and driveways.
- Collect rain water in a rain barrel for watering your lawn and plants.
- Cut grass no shorter than 2 inches to reduce evaporation and promote deep root growth.
- Use shut-off nozzles on hoses.
- Aerate your lawn as needed.
- When hiring an irrigator, look for a [certified landscape irrigation professional](#).

### Watering resources

- [Comprehensive guide to deciding on and designing rain barrels](#) - Ramsey-Washington Metro Watershed District
- [Home lawn watering guide](#) - University of Missouri Extension
- [Natural lawn care and ground maintenance](#) - Safe Lawns
- [Watering Lawns and Other Turf](#) - U of M Extension Service
- [Landscape Watering Guide](#) - Water Use it Wisely
- [All About Lawns](#)
- [American Lawns](#)
- [Smart Water Application Technologies](#) - Irrigation Association
- [Smart Outdoor Practices](#) - WaterSense, U.S. Environmental Protection Agency
- [Slow the Flow Quiz](#) - Utah Governor's Conservation Team
- [Certified Professionals in Minnesota](#) - EPA WaterSense®
- [Prevent water waste](#) - Southern Nevada Water Authority

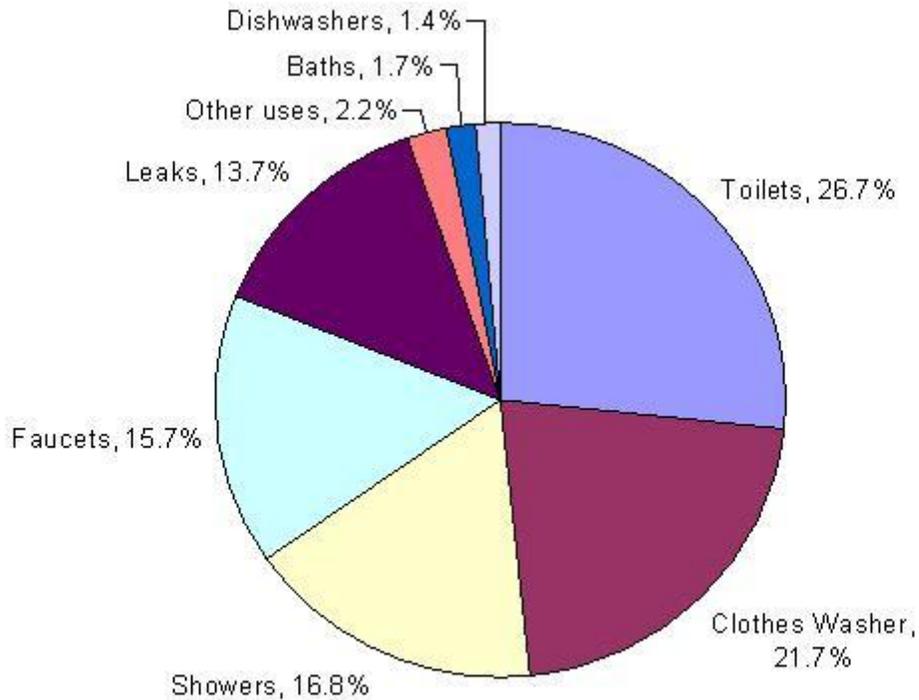
### Car washing

If you use a hose to wash your car, be sure to use a hose nozzle or turn the water off when you are not using the water. Washing a car for 20 minutes can use up to 100 gallons of water if you let the water run the entire time.

#### Tips

- Use a bucket of water and use the hose only for quick rinses.
- Wash your car and other items (bicycles and trash cans) on the lawn to prevent the water from running down the storm drain.

#### Indoor water use



Source: American Water Works Association, 1999. Residential Uses of Water

In the Twin Cities metropolitan area, residents use an average of 58 gallons per capita per day (gpcd) indoors. Nationally, residential indoor water use ranges from about 68 gpcd (non-conserving household) to 38 gpcd (conserving household) (Source: Adapted from Vickers, A. 2001. Handbook of Water Use and Conservation. WaterPlow Press, Amherst, MA.)

#### Toilets, sink faucets and showerheads

The 1992 Federal Energy Policy Act required all toilets, sink faucets and showerheads manufactured in the United States after January 1, 1994 be low-volume fixtures. Toilets must use no more than 1.6 gallons per flush (gpf); sink faucets no more than 2.5 gallons per minute (gpm); and showerheads no more than 2.5 gpm, respectively. Fixtures installed before 1994 were not required to be retrofitted; therefore, 5 to 7 gpf toilets and 3 to 4 gpm sink faucets and showerheads are still in extensive use throughout the United States.

#### Tips for reducing water use

- If you still have a 5 gpf toilet, retrofit your toilet with a 1.6 gpf or less toilet.
- Do not use your toilet as a waste basket.
- If you have a 5-7 gpf toilet, install a toilet tank dam or displacement ("zip-lock") bag and save up to 40% of your toilets water use.
- [Check your toilet/s for leaks.](#)
- Install a low-flow sink faucet or a sink faucet aerator.
- Turn the faucet off while brushing your teeth or shaving.
- Fill a pitcher when waiting for water to turn hot or cold and use the water to water your plants.
- Install a Demand (Tankless or Instantaneous) Water Heater and water and energy.
- Do not let the water run while washing the dishes; fill the sink instead.
- Keep a pitcher of drinking water in the refrigerator rather than running the water from the faucet until it is cold.
- Be sure to turn off sink faucets completely.
- [Fix leaks \(calculate how much water you are wasting from a faucet leak\).](#)
- Install a low-flow showerhead.
- Take shorter showers.

### Clothes washers and dishwashers

The efficiency of clothes washers and dishwashers installed between 1980 and the early 2000s are estimated to range from 27 gallons per load (gpl) to 51 gpl and 7 gpl to 14gpl, respectively. Although recent models (since year 2000) are twice as water-efficient as those of 20 years ago (1980), water conservation measures are still important because as population increases, so does total water use.

#### [Tips for reducing water use](#)

- Run only full loads in your clothes washer and dishwasher.
- When shopping for a new clothes washer, look for the [WaterSense](#) label.

If you have comments or questions, please let us know. We will continually update and improve the toolbox based on your input.

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