

Household Water Conservation

Colorado's semi-arid climate is frequently punctuated with multi-year droughts, reminding us of the value of plentiful water supplies. Fortunately, most of the water supply for Colorado's urban dwellers is renewed annually as snowpack in the Rocky Mountains. However, as Colorado's population grows, competition for the supply will grow as well, forcing municipalities to develop other water supplies by buying water from farms, building new projects, or using groundwater. The results of these water transfers to urban use are permanent and come at a cost to rural communities and the environment. Water conservation in your home can help slow this process and provide your household considerable savings on your monthly water bill.

Water supply planners estimate that a typical household needs about half an acre-foot of water per year (approximately 150,000 gal) to satisfy the demands of a residential home and lawn. However, we can get by on less by reducing our water consumption in and around the home. Outdoor water use accounts for about 55% of the residential water use in urban areas along the Front Range, most of which is used on turf. As a percentage of total water use in

the urban Front Range, outdoor water accounts for about 40 percent of all urban water use. Many Colorado residents use over 170 gallons of water per capita per day. In contrast, some western U.S. cities use less than 150 gallons per capita per day.

WATER CONSERVATION IN THE HOME

Home water use varies considerably, depending upon the number of people in a household, plumbing fixtures, appliances, lot size, and other factors. The largest water users in the home are toilets, clothes washers, faucets, and showers. Consider the following actions for savings in these areas.

Bathroom Water and Shower Savings

- Turn off the water when brushing teeth and save 25 gallons per month.
- Turn off the water when shaving and save up to 300 gallons per month.
- Install low-flow faucet aerators on all your household faucets. Some aerators can restrict flow to less than 1.0 gpm.
- Check and repair faucet leaks and save up to 140 gallons of water per week.



Check the flow rate of your showerhead by using a 5-gallon bucket and a clock. Turn the shower on full and place a 5-gallon bucket under the shower for two minutes. A 2.5 gpm showerhead will fill the bucket up in that two-minute time frame. Use the water for plants or pets.



- Install a low-flow showerhead.
- Keep your showers brief. A shower that lasts for five minutes using a low-flow showerhead uses 12 gallons of water. Consider using a timer to help control the time you are in the shower.
- Turn off the water while you lather up with soap and shampoo.
- Check and repair leaks from all shower and tub valves.

TOILET EFFICIENCY

Toilets made before 1993 use 3.5 to 8 gallons per flush (gpf). High-efficiency toilets manufactured after 1993 use 1.6 gpf. Newer high-efficiency toilets use 1.28 gpf and dual-flush toilets use even less. The date of manufacture of most toilets is printed on the underside of the tank lid. A family of four can save 14,000 to 25,000 gallons per year by switching from conventional toilets to the newer, more efficient ones. Your water utility may even offer rebates for replacing conventional toilets. Additional water savings can occur by making sure your toilet is not leaking and the flapper is working properly.

Other suggestions for increasing toilet-use efficiency include:

- Install vacuum assisted, dual flush or low-volume toilets.
- Consider not flushing the toilet unless necessary.
- Regularly check for toilet leaks by placing food coloring in your toilet tank. Repairing leaking toilets can save more than 600 gallons of water per month.
- Do not use your toilet as a wastebasket.
- Make sure your toilet flapper does not remain open after flushing.

AVERAGE INDOOR HOUSEHOLD USE			
	AMOUNT PER USE (GAL.)	USES PER DAY	TOTAL USE PER HOUSEHOLD PER DAY (GAL.)
TOILETS	3.1	12.6	39.5
CLOTHES WASHERS	38.7	0.7	25.6
FAUCETS	1.2	20.6	24.3
SHOWERS	13.1	2.2	29.0
BATHS			2.9
DISHWASHERS	7.9	0.3	2.5
LEAKS			24.5
OTHER/MISC.			5.7
TOTAL			154.1

*(Denver Water 2005 End Use Study)
2.5 people per household

ESTIMATED FAUCET LEAKAGE RATES

60 drops/minute = 192 gallons/month

90 drops/minute = 210 gallons/month

120 drops/minute = 429 gallons/month

- Avoid using toilet bowl cleaners such as toilet tank tablets. These products affect the pH of water in your toilet tank, can cause leaks by damaging the rubber and plastic parts, and are a water quality concern.

CLOTHES WASHING EFFICIENCY

Conventional washing machines use between 35 to 50 gallons per load (gpl). Front-loading machines are more efficient and use between 18 to 20 gpl. Consider the following suggestions for reducing water use while washing clothes.

- Run the washing machine only when you have a full load of laundry.
- For lightly soiled laundry loads, use the shortest wash cycle.
- Pre-treat stains on your clothes to reduce the need to rewash items.
- Select the minimum water volume per load if your washer has a variable water volume setting.
- Regularly check washing machine hoses for leaks.

DISHWASHER AND KITCHEN FAUCET EFFICIENCY

- Install a high-efficiency dishwasher machine.
- Run the dishwasher only when it's full to save up to 1,000 gallons of water per month.
- Running a full dishwasher usually uses less water than washing the same number of dishes by hand.
- Do not run the faucet continuously while washing dishes. If you have a double-basin, fill one with soapy water and one with rinse water, or use pans and then pour the leftover water on the lawn or garden.
- Instead of running water from the tap, wash fruits and vegetables, such as leafy greens, in a clean bowl of water, and then rinse under running water or use a salad spinner. Scrub melons in a bowl of water with a clean vegetable brush before rinsing under running water.
- Collect the water used for rinsing fruits and vegetables, then reuse it to water houseplants.
- Old pet water can also be used to water indoor or outdoor plants.

WATER CONSERVATION OUTSIDE OF THE HOME

Improving Lawn Irrigation Efficiency

Urban lawn watering is the single largest water demand on most municipal supplies. However, there are many ways to conserve water outside the home. It is important to avoid overwatering because it is not only wasteful, but unhealthy for plants. Learn the water requirements of your landscape and create an irrigation schedule appropriate for the types of plants you have. In addition, make a habit of manually operating your irrigation system and rely less on the automatic controller. Do not irrigate on a set schedule since daily plant water use can vary greatly according to the weather. Finally, take into account recent rainfall amounts before watering your landscape.

During drought or times of restricted landscape watering, most lawns, including bluegrass, will withstand reduced watering regimes by going dormant. In these situations, adjust mowing, fertilizing, aeration, and weed control practices appropriately to the watering schedule. Most lawns can be revived with good management and care after the drought breaks. Changing landscape plants and lawn grass species during drought is not a good idea, as it generally takes more water to establish new plants than to keep old plants alive.

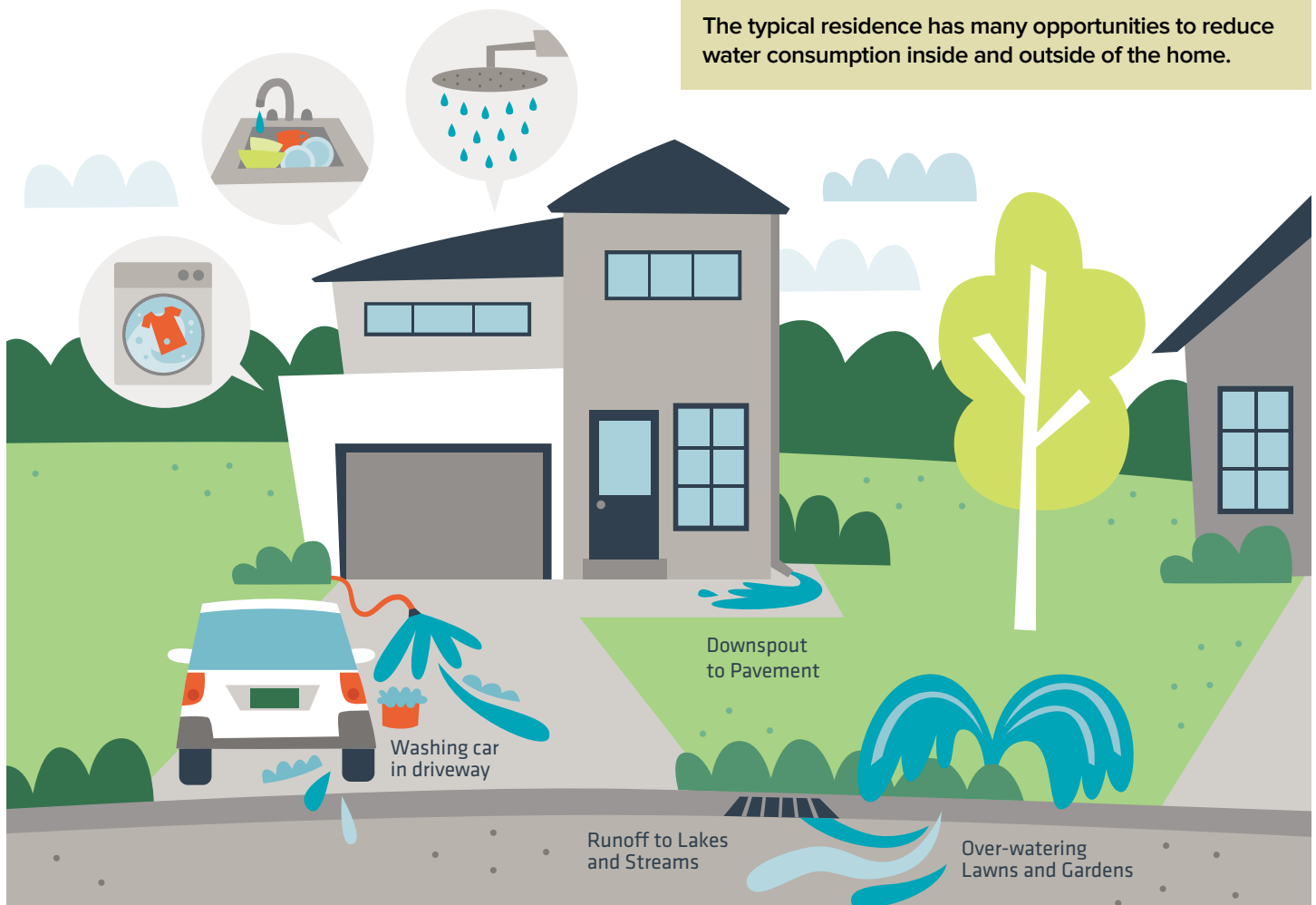
Keep in mind the variety of water needs among various landscape plants. For example, certain types of lawn may need water every three or four days during a hot, dry summer. However, trees and shrubs may only need water every few weeks, while flowerbeds may need to be watered once a week. Trees, shrubs, and flowers may rot if you water them on the same watering schedule as your lawn.

Contact your local Extension office or water utility about lawn watering auditing programs and resources. Auditing programs are designed to measure your irrigation system's output over a period of time so you can schedule your irrigations appropriately.

Additional Ways to Conserve Landscape Water

- Choose shrubs and groundcovers instead of turf for hard-to-water areas such as steep slopes and isolated strips.
- Make sure the irrigation system and sprinkler heads are operating properly and replace broken or missing sprinkler heads.
- Adjust sprinkler heads so that water does not reach streets and driveways.
- Replace spray heads with low pressure MP Rotators®.
- Check nozzles for plugging and wear.

The typical residence has many opportunities to reduce water consumption inside and outside of the home.



- Place straight-sided containers (such as tuna fish cans) around the yard during irrigation to measure water depth so that you know how long it takes to apply 1/4 to 1/2 inch of water.
- Place containers on persistent dry spots to determine if poor sprinkler coverage is the problem.
- Never water if the soil is still wet.
- Install a rain sensor to automatically delay the lawn irrigation system until water is needed.
- Consider harvesting rooftop rainwater if you legally qualify to do so. Recent legislation (House Bill 16-1005) allows most homeowners to harvest rainwater based on a specific set of criteria.

For more information, visit extension.colostate.edu:

- Fact Sheet 6.707, Rainwater Collection in Colorado
- Fact Sheet 7.234, Xeriscaping: Retrofit Your Yard
- Fact Sheet 7.239, Operating and Maintaining a Home Irrigation System
- Fact Sheet 4.722, Irrigation: Inspecting and Correcting Turf Irrigation System Problems
- Fact Sheet 7.199, Watering Established Lawns
- Fact Sheet 7.214, Mulches for Home Gardens

Guidelines for When to Water

- Irrigate when footprints or mower tracks become visible and/or large areas of the lawn become blue-gray in color.
- Apply irrigation water so runoff and ponding does not occur.
- Adjust water amounts to account for changes in plant water use (evapotranspiration or ET) brought about by weather conditions. Water utilities often provide ET rates in local newspapers or on their website.
- If you are using a sprinkler system that can be repositioned easily, move it around the yard in cycles to let the water thoroughly and evenly soak in.
- Water dry spots instead of the entire lawn.
- Water between 9 p.m. and 9 a.m. to reduce evaporation losses from hot and windy weather conditions.

Managing the Water Needs of Plants

- Reset automatic controllers according to the seasonal needs of plants.

- Turn sprinklers off when it rains or install a rain sensor.
- Determine appropriate water needs for each area of your lawn and yard. Overwatering is worse than not watering enough.
- Inspect controls at least once a month to adjust run times.
- Winter watering will minimize stress to trees, shrubs, flowers, and turf in areas receiving low winter precipitation. Apply water once a month during dry winter periods when the temperature is above 40 degrees and the water will absorb into the soil before the temperature drops to below freezing.
- Drip irrigation installed at the base of transplanted trees will need to be moved outward and emitters added as the tree root system expands.
- Shaded plants use less water than plants in full sun.

Mulching for Water Conservation

Mulching reduces evaporation from the soil surface and can reduce irrigation needs by approximately 50 percent. The following is a list of suggestions for using mulch in the garden.

- Use an organic mulch to a depth of approximately four inches, depending upon the particle size of the mulching material.
- For general landscape applications, use spun or woven permeable landscape fabrics rather than solid sheet plastics.
- Black or dark-colored plastic mulch conserves moisture and increases soil temperature in vegetable gardens.
- Grass clippings can be used as mulch in the vegetable garden. Do not use clippings from lawns treated with herbicides or other pesticides in the past month.

Conserving Water in the Garden

- Plant in blocks instead of rows to create shade for plant root systems and reduce evaporation.
- Group plants with similar water needs together.
- Check the soil for moisture before you water, and do not water until the soil has dried out to a depth of at least four inches once plants are established
- Consider using drip irrigation to reduce evaporation and apply water only where needed.
- Control weeds that compete with vegetables for water.

AVERAGE OUTDOOR HOUSEHOLD USE (GALLONS)*

TYPE OF LANDSCAPE	GALLONS PER SQ. FT.	SQ. FT.	TOTAL SEASON USE (APR. 1 - SEP. 30)	USE PER WATERING (3 DAYS/WK)	USE PER WATERING (2 DAYS/WK)
BLUEGRASS	18	5,000	90,000	1,070	1,610
XERISCAPE	9	5,000	45,000	540	800

*(Denver Water 2005 End Use Study) 2.5 people per household

SMALL CHANGES ADD UP

- Check your water meter and bill and talk to family members about setting water conservation goals.
- Turn off your sprinkler when water needs are low or rainfall has been sufficient to meet your lawn's water demands.
- Accept having a slightly dirty car and a less green lawn.
- Use a car wash that recycles water instead of washing your car in the driveway. If that is not possible, wash your car on the lawn so you can simultaneously water your grass.
- Direct downspouts or gutters toward shrubs or trees.
- If remodeling, use porous materials for patios and walkways to reduce runoff.
- When buying a new appliance, look for models that are more water and energy-efficient.
- Take advantage of local water utility incentives or in-home water audit programs.
- Insulate your hot water pipes to shorten the wait for hot water.
- Collect warm-up water in a bucket for watering indoor plants.
- Keep drinking water in the refrigerator during the summer instead of letting the faucet run until water is cool.

Changing water use habits is easy, saves you money, and offers a way for you and your family to work together on conservation. For more ideas on water conservation, check with your local water utility or CSU Extension office.

SMALL CHANGES



ADD UP





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For more information on protecting water quality and the environment
around your home, please see the other Homeowner's Guides:

XCM-220, Pesticide Use Around the Home and Garden

XCM-221, Alternative Pest Management for the Lawn and Garden

XCM-222, Fertilizing Your Lawn and Garden

XCM-223, Protecting Water Quality and the Environment

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