

Water Wise

Water Conservation In The Home

Sharon O. Skipton, Extension Water Quality Educator
Bruce I. Dvorak, Extension Environmental Engineering Specialist

Efficient water use is important during periods of drought. Selecting water-efficient appliances and keeping fixtures in good working order can reduce the amount of water used in homes.

About 80 percent of Nebraska’s population relies on groundwater for household water. The remaining 20 percent obtains water from surface water. Nebraska’s groundwater comes from natural underground layers of sand and gravel that contain water. These formations are called aquifers. Groundwater is a renewable resource, replenished mostly by precipitation. However, groundwater resources are not limitless, and groundwater levels can decline when use exceeds recharge. This has been especially true in areas of heavy use during dry years.

Efficient water use is especially important during periods of drought, when groundwater levels can decline. Water use in the home varies, and the average amount of water used per person per day has declined in recent years. This reduction is primarily due to the use of newer water-saving fixtures and appliances. National averages remain about 70 to 100 gallons per person per day. Homeowners can conserve water by selecting efficient fixtures and appliances and changing water use practices. Although studies vary slightly in amounts used, they do indicate the top three water users in the home are the toilet, shower/bath, and washing machine. These are followed by faucets and dishwashers. Adopting water-conservation practices for these areas can provide significant benefits. Changes might include modifications in plumbing or fixtures. Or, they might be as simple as changing behavior. Individuals should consider their home structure, family’s lifestyle, cost-benefit analysis, and values when selecting changes.

The most water-efficient toilets, showerheads, and faucets carry the Environmental Protection Agency’s (EPA) WaterSense® label. Products bearing the label are generally 20 percent more water-efficient than similar products on the market. EPA develops requirements that products must meet to earn the WaterSense® label. With the label, EPA

hopes to help consumers make wise water choices without compromising performance.

ENERGY STAR is a joint program of the EPA and the U.S. Department of Energy. Energy Star certified clothes washing machines and dishwashers use advanced technology to clean while using less water and energy.

Toilet

The number one water user in the home is the toilet. Older conventional toilets use 3.5 to 5 gallons or more of water per flush. Effective Jan. 1, 1994, the Energy Policy Act of 1992 required that all new toilets produced for home use must operate on 1.6 gallons per flush or less. WaterSense® labeled toilets are required to use 1.28 gallons or less per flush. Pressure-and vacuum-assisted and jet-action toilets have been designed for good waste removal. Dual-flush toilets offer a half-flush (0.8 to 1 gallon) for liquids only and a full-flush (1.6 gallons) for solid waste.

When an older toilet remains in use, a plastic container (such as a plastic milk jug) can be filled with water or pebbles and placed in the toilet tank to reduce the amount of water used per flush. The container must be placed to avoid interfering with the flushing mechanisms or the flow of water. A container can typically result in a savings of up to 1 gallon of water per flush. Do not use bricks or other objects that can release particles of soil, stone, or corrosive materials into the tank.

In addition, a variety of devices are commercially available to either reduce the amount of water flowing into the tank, or hold back a reservoir of water when the toilet is flushed. When used with a standard toilet, the device may result in a savings of 1 to 2 gallons of water per flush. About 3 gallons of water per flush should be maintained for adequate flushing in older toilets.

Toilets should be used only to carry away sanitary waste. Dispose of facial tissue, dead insects, and other waste in a trash can rather than a toilet.

It is estimated that about 20 percent of toilets leak. A leaky toilet can waste an average of about 22 gallons of

water every day. Leaking toilets will often make a telltale leak sound or the fill valve will open to refill the tank well after use. Any ripples or disturbance of water in the bowl can be a sign that the toilet is leaking. The best way to tell if a toilet has a leak is to place a drop of food coloring in the tank; if the color shows in the bowl after a few minutes without flushing, there is a leak. Fix leaks by changing the flapper valve. Install the correct flapper for the model or the toilet may not operate properly.

Toilets which don't receive much use, such as in a basement, can leak unchecked causing significant waste and high water bills. Make a habit of checking unused toilets using the methods described above or consider shutting off water to the toilet.

Clothes Washing Machines

Clothes washing machines are typically the second biggest water user in the home. Energy- and water-saving models use 35 to 50 percent less water. The average older washing machine can use 40 gallons of water per load. High-efficiency washing machines use 18 to 25 gallons of water per load. Those with an Energy Star rating use only 15 gallons per load. Some washers sense the load size and soil of water and fabric and adjust the water level accordingly. High-pressure rinses to spray clothes during the rinse cycle reduce water consumption. Adjustable water-level settings allow the user to choose the level for the load.

Washing fewer full loads will use less water than washing several small loads. Wash only full loads if possible. When small loads must be washed, adjust the water level or use the appropriate load size selection on the machine.

Shower/Bath

Showers account for about 20 percent of total indoor water use. A quick shower usually uses less water than a bath. Older showerheads can use 6 to 8 gallons of water per minute (gpm). Showerheads made as of 1994 are required to use no more than 2.5 gpm. Those with the WaterSense® label must use no more than 2.0 gpm. Well-designed low-flow showerheads provide a flow rate acceptable to most consumers. A quick shut-off lever on some models allows the user to stop and start the water flow without adjusting the temperature again.

Individuals can use water efficiently by taking shorter showers. Additional water can be conserved by shutting off the flow of water while soaping or shampooing.

Faucets

Older faucets can use 3 to 5 gpm. More efficient kitchen and bathroom faucets use only 2 gpm. WaterSense® labeled faucets must not exceed 1.5 gpm, but must not be less than 0.8 gpm. The EPA estimates that if one in every 10 homes in the United States were to install WaterSense® labeled faucets in their bathrooms, it could save 6 billion gallons of

water per year, and more than \$50 million in energy costs to supply heat and treat that water.

Aerators installed on existing faucets break the flowing water into fine droplets and entrain air. They can reduce faucet water use by as much as 60 percent while maintaining wetting effectiveness.

Water can be saved by shutting off the flow while lathering up, brushing teeth, shaving, or completing other similar tasks.

Keep a pitcher of water in the refrigerator for a refreshing cold drink instead of running tap water to get it cold.

A slow drip or leak can waste more than 100 gallons of water per week. Fix leaks by replacing faucet washers as needed.

Using a garbage disposal can use about 11.5 gallons of water per day. Try composting organic wastes instead.

Dishwashers

Older dishwashers can use about 14 gallons of water per load. Newer, water-efficient models average 6 to 7 gallons per cycle. Those with an Energy Star rating use only 4 gallons per cycle. When replacing a dishwasher, look for features to control wash cycle selections for light washes that use less water.

Washing fewer full loads will use less water than washing several small loads. If small loads must be run, adjust the control setting for the load size and soil level.

Newer dishwashers should be able to clean the load without pre-rinsing items. Scrape off excess food before loading. If the dishwasher is not cleaning effectively, read the instructions for correct loading and detergent types.

When washing dishes by hand, do not use a continuous running faucet for rinsing. Use a spray attachment and rinse as needed.

Water Softeners

Many areas of Nebraska have hard water, which is often managed with the use of an ion-exchange water softener. Water softener regeneration cycles can use from 32 to over 140 gallons of water. The actual amount used depends upon the amount of hardness removed from the water, the programming of the softener, and the type of softener. Some models are more water efficient in their regeneration cycles. Regeneration cycles can be optimized by using water softeners with demand-initiated regeneration rather than those with set times for regeneration. Regeneration will occur only when required as determined by the gallons of water used, a change in the electrical conductivity of the resin bed, or a change in water hardness.

A Final Thought On Leaks

All of the above fixtures can leak and in most cases these leaks can be observed. Leaks should be corrected as soon as possible to avoid wasted water and high water bills. Pay

particular attention to fixtures that are not often used or are located in areas where there is limited activity in the home. A good way to spot leaks is to observe the water meter when no water is being used in the home. Water meters usually have a “leak dial” which moves during very low usage. If this dial is moving during periods of no water use, there is a leak somewhere in the home.

Summary

Efficient water use is especially important during periods of drought, when even average in-home water use can cause groundwater levels to decline. Homeowners can conserve water by selecting efficient fixtures and appliances and changing water use practices. Changes to fixtures and appliances that account for the greatest water use in the home will result in the greatest impact. Those include the toilet, shower/bath, and washing machine, followed by faucets and dishwashers. Individuals should consider their home structure, family’s lifestyle, cost-benefit analysis, and values when selecting changes.

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