

# Use Water Wisely



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

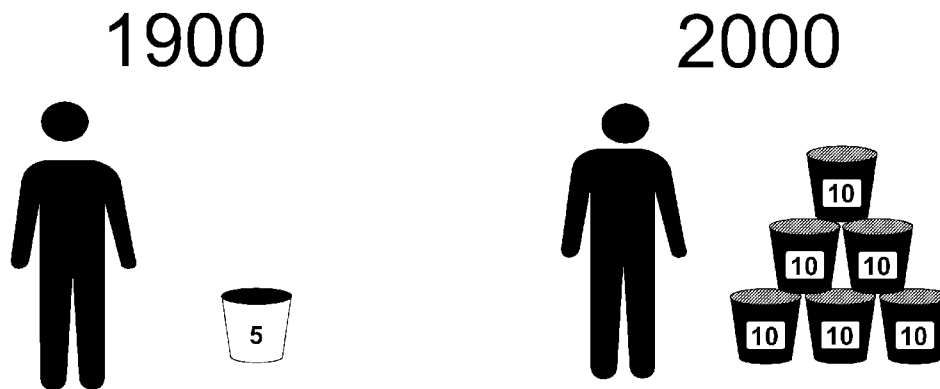
Tom Ridge, *Governor*    James M. Seif, *Secretary*

For more information, visit DEP directly at [www.dep.state.pa.us](http://www.dep.state.pa.us)  
or through the Pennsylvania homepage at [www.state.pa.us](http://www.state.pa.us)

# WATER DEMAND

Water is an important natural resource. We use it everyday at home and at work in so many ways that we take it for granted. However, water is no longer the “sure thing” that it was in the past. We need to reassess our attitude about water and how to conserve it. This brochure is about water conservation and what we can do to reduce our water use.

In 1900, each of the six million people living in Pennsylvania used about five gallons of water per day. Since then, our population has doubled to almost 12 million people, and our water consumption has increased to an average of 62 gallons per day.



Part of this 900 percent increase in water use is due to the many modern water-using conveniences in our homes, such as automatic dishwashers, clothes washers, garbage disposals and home water treatment systems. A significant change in water use occurred when the bathroom was moved indoors. It is ironic that we use one of our most precious resources to remove waste from our homes.

Our water resources are not unlimited. They are affected every day by precipitation, population growth, economic development and pollution. Because water is a resource that must be shared, competition for its use is an ever-increasing management problem. In the past, we tried to solve our supply problems by constructing storage facilities and developing new resources such as wells and reservoirs. However, these measures can be both economically and environmentally costly.

A more cost-effective way to protect our water resources is through sound water resources management and conservation.



## AVERAGE DAILY WATER USE

Be aware of how much water you use! Awareness is the first step in conservation. The following table indicates how much water the average person in Pennsylvania uses each day.

<i>Use*</i>	<i>Gallons Per Day</i>	<i>Percent</i>
<i>Toilet Flushing</i>	20	32
<i>Clothes Washing</i>	16	26
<i>Showering and Bathing</i>	14	23
<i>Kitchen (dishwashing, cooking drinking, cleaning)</i>	12	19
	62	100
<small>* This information is provided for illustrative purposes only and may not be applicable to a given situation.</small>		

### *Metered Water*

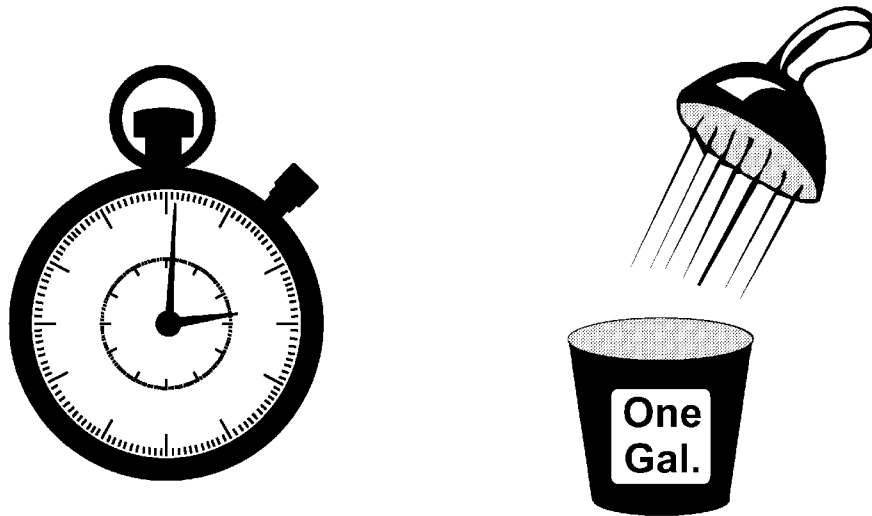
If your water use is metered, review your water bill. Divide your water usage by the number of days in the billing period and also by the number of residents of your household. If your water is measured in cubic feet, convert to gallons by multiplying by 7.48.

### *Unmetered Water*

If your water use is not metered, you must determine your water use for each fixture. Flow rates for showers and faucets can be measured by using a container and watch to measure the amount of water discharged through the fitting in a minute. Toilet use per flush can be approximated by measuring the volume of water inside the toilet tank (width x length x height) and dividing by 231 (there are 231 cubic inches in a gallon of water).



After you have determined the water use of each fixture, you will need to record the number of uses and the length of time each fixture is used to determine your average daily water use. Remember to estimate the amount of water used by appliances such as clothes washers and dishwashers as well as home water treatment systems.



After determining your average daily water use, it is important to examine your and/or your family's water use in light of the statewide residential/water use average of 62 gallons per person per day (GPCD).

Is your and/or your family's water use average more than or less than 62 GPCD? If it is less than 62 GPCD, you and your family are doing a good job conserving water. However, if your or your family's water use averages more than 62 GPCD, serious consideration should be given to the following suggestions:

- 💧 Installing low flow plumbing fixtures;
- 💧 Purchasing water saving appliances;
- 💧 Checking for household leaks; and
- 💧 Changing water use habits.



# WATER SAVINGS

Water saving plumbing fixtures and appliances are cost-effective, providing permanent long term economic advantages. Low flow toilets, showerheads and faucet aerators save valuable water and energy used to heat water without requiring a change in personal use habits.

The following chart highlights how much water can be conserved by installing water saving equipment in place of conventional plumbing fixtures, fittings and appliances.

<i>Potential Water Savings</i>			
<i>Fixture/Appliance</i>	<i>Capacity</i>		
	<i>Efficient</i>		<i>Conventional</i>
<i>Toilets</i>	1.6 gpf		5.5 - 7.0 gpf
<i>Showerheads</i>	2.5 (1.7)gpm		5.0-8.0(3.4)gpm
<i>Faucets</i>	2.5 (1.7)gpm)		3.0-7.0(3.3)gpm
<i>Dishwashers</i>	4.5 - 5.5gpl		9.0 - 13.7gpl
<i>Washers - Front Loading</i>	27 - 30gpl		
<i>- Top loading</i>	30 - 33gpl		37 - 47gpl

*Gallons Per Flush = gpf*  
*Gallons Per Minute = gpm*  
*Gallons Per Load = gpl*



## REPAIR ALL LEAKS

A dripping faucet is more than annoying...it's expensive. Even small leaks can waste significant amounts of water, as illustrated below. Hot water leaks are not only a waste of water, but also of the energy needed to heat the water.

Leaks inside a toilet can waste up to 200 gallons of water a day. Toilet leaks can be detected by adding a few drops of food coloring to water in the toilet tank. If the colored water appears in the bowl, the tank is leaking. If you have a leaking faucet or toilet, stop pouring money down the drain and repair it.

Diameter of Leak (Inches)	Loss per Day *	Number of People Potentially Served By Daily Leak**
● 1/4	11,983 Gallons	193
● 1/8	3000 Gallons	48
● 1/16	750 Gallons	12
● 1/32	188 Gallons	3

\* Based on the average water system pressure

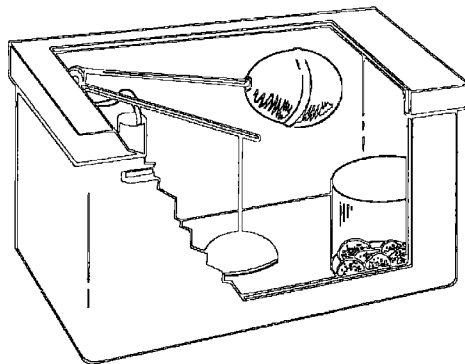
\*\* Based on a Residential Daily Per Capita Water Use of 62 GPCD



# USE WATER SAVING PLUMBING FIXTURES/APPLIANCES

## Bathroom

- 💧 Since passage of the Federal Energy Act in January 1994, all new manufactured toilets use 1.6 gallons per flush. If your present toilet was manufactured before 1994, consider placing a plastic gallon container in the tank to save water with each flush.
- 💧 Install low flow showerheads that use no more than 2.5 gallons per minute at maximum flow.
- 💧 Install low flow faucets that use no more than 2.2 gallons per minute at maximum flow.



## Kitchen/Laundry

- 💧 Replace the more common, less efficient, top loading clothes washer with a high efficiency front loading washer which uses about 30 percent less water and 40 to 50 percent less energy.
- 💧 Operate clothes washer and dishwasher only when they are fully loaded.
- 💧 Use the proper washer level or load size selection on clothes washers.
- 💧 Install low flow aerators on all faucets.













# CHANGE WATER USE HABITS

In addition to installing low flow plumbing fixtures, purchasing water saving appliances and repairing leaks, water use can be reduced by changing your water use habits inside and outside the home.





## INSIDE THE HOME

### WATER SAVING TIPS

-  Turn the faucet off while brushing your teeth. Use a glass of water for rinsing your teeth.
-  When shaving, use a sink filled with rinse water. Do not let the faucet flow.
-  Take short showers instead of baths and consider bathing small children together.
-  Do not use the toilet as a trash can.
-  Do not let the faucet flow while cleaning vegetables. Rinse them in the sink with the drain closed or in a pan of water.
-  If the shower has a single hand control or shut off valve, turn off the flow while soaping or shampooing.
-  Refrigerate a bottle of drinking water instead of letting a faucet flow until the water is cold enough to drink.
-  Turn the faucet off while cleaning vegetables. Rinse them in the sink with the drain closed or in a pan of water.
-  If you wash dishes by hand, do not leave the faucet flowing for rinsing. Instead, use a dish rack and spray device to rinse them. If you have two sinks, fill one with soapy water and one with rinse water.
-  Fill the sink with water to pre-rinse dishes before putting them in the dishwasher.

## OUTSIDE THE HOME

### WATER SAVING TIPS

-  Use a broom, not a hose, to clean driveways, steps and sidewalks.
-  Wash the car with water from a bucket. If a hose is used, control the flow with an automatic shut off nozzle.
-  Water the lawn or garden during the coolest part of the day. Do not water on windy days.
-  Water the lawn only when needed. If grass does not spring back after walking on it, it probably needs water.



- 💧 Set sprinklers to water the lawn or garden only. Do not water the street or sidewalk.
- 💧 Use soaker hoses and trickle irrigation systems to reduce the amount of water used for irrigation by 20 to 50 percent.
- 💧 Use mulch around shrubs and garden plants to reduce evaporation from the soil surface and cut down on weed growth.
- 💧 In landscaping, use native plants that require less care and water than ornamental varieties.
- 💧 Cover the swimming pool to prevent evaporation.
- 💧 Adjust the lawn mower to a higher setting to provide natural ground shade and to promote water retention by the soil.

## DROUGHT PHASES

Over a long period of time, lack of rain will result in drought conditions that affect public and private water systems. To describe the severity of drought conditions, Pennsylvania has developed three drought phases referred to as Drought Watch, Drought Warning and Drought Emergency. These three drought phases have an impact on individual water use during a drought.

Under a Drought Watch, individuals are asked to voluntarily conserve water. The objective of voluntary water conservation is to reduce individual water use by five percent or down to 60 gallons per day based on a statewide average of 62 GPCD.

Under a Drought Warning, individuals are asked to continue their voluntary conservation of water. The objective of voluntary water conservation is to reduce individual water use by 10 percent or down to 56 gallons per person per day.








Under a Drought Emergency, individuals may be required to observe mandatory water use restrictions. The objective of mandatory water use restrictions is to reduce individual water use by 15 percent or down to a low of 55 gallons per person per day.

If drought conditions continue to deteriorate during a Drought Emergency, local municipalities may implement local water rationing in a community. Water rationing requires specific limits on individual water use as set by the local water supplier. For water rationing to work effectively, all individual homes must have a water meter to record the amount of water used by each household. By reading water meters and knowing the number of residents in each home, the water supplier can determine if the household is violating the water rationing regulation.



# MANDATORY WATER USE RESTRICTIONS

The following water uses are considered nonessential and are prohibited during a Drought Emergency and Water Rationing. As with every regulation, there are exceptions to the nonessential water use restrictions. These exceptions are noted in detail on the DEP website ([directLink "Drought Regulations"](#)).

-  Watering lawns, gardens, landscaped areas, trees, shrubs and outdoor plants.
-  Watering golf courses.
-  Washing paved surfaces, such as streets, sidewalks, driveways, garages, parking areas, tennis courts and patios.
-  Operating water fountains, artificial waterfalls and reflecting pools.
-  Washing vehicles.
-  Serving water in eating places unless specifically requested by the individual.
-  Filling and topping off swimming pools.



## DROUGHT CONSERVATION MEASURES

- 💧 Keep an empty container near sinks. Put it under the faucet while waiting for water to warm up. Pour any leftover water from cooking or drinking into it. Once full, use the water for gardening.
- 💧 Place a bucket in the shower to catch water that is wasted while waiting for the shower water to warm up.
- 💧 Take dirty water from birdbaths, flower vases or pet dishes and reuse on potted plants.
- 💧 Drink bottled water instead of tap water.
- 💧 Instead of using hot water to defrost foods, defrost foods in the refrigerator overnight or use a microwave.
- 💧 Keep your garden weed-free, since weeds use available water in the soil.
- 💧 When it rains, leave buckets outside to collect water for washing cars and watering plants and gardens.
- 💧 Turn off ice-makers for refrigerators and use trays instead.
- 💧 Use recyclable plates and cups to cut down on dishwashing.
- 💧 If phosphate detergents or bleach are not used in the wash, rinse water from the washing machine can be used on the garden.
- 💧 Position downspouts, with extensions if needed, so rain water runs onto the lawn or into the garden, not down the walk or driveway.
- 💧 If a dehumidifier exists, use the water it collects to water plants and gardens.
- 💧 If a water softener exists, use the wastewater, when it regenerates, to water the lawn and plants.

## HOW TO CONSERVE WATER IN THE COMMUNITY

- 💧 Encourage the use of water conservation devices by large water-using facilities (such as schools, health clubs, motels and others).
- 💧 Survey water users within large water-using facilities and develop plans to reduce water use.
- 💧 Encourage a community-based service organization such as a scout group, service club or church youth group to start a water conservation program. Water conservation is stewardship of our natural resources.
- 💧 Encourage use of drought tolerant vegetation in outdoor landscaping at large facilities and community sites.
- 💧 Retrofit older buildings and facilities with water-efficient plumbing fixtures.



This and other related environmental information are available electronically via Internet. For more information, visit us through PA PowerPort at <http://www.state.pa.us> or visit DEP directly at <http://www.dep.state.pa.us> (choose directLINK "Drinking Water Publications").



[www.GreenWorks.tv](http://www.GreenWorks.tv) - A web space dedicated to helping you learn how to protect and improve the environment. The site features the largest collection of environmental videos available on the Internet and is produced by the Environmental Fund for Pennsylvania, with financial support from the Pennsylvania Department of Environmental Protection, 877-PA-GREEN.

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