Conservation

As residents of the Commonwealth, we all have a responsibility to conserve water. As the infrastructure of our State continually changes, conservation becomes a more pertinent issue. Water is a precious resource and there is a limited supply, so please, *remember to only use what you need.*

"Do you take it for granted that every time you turn the faucet on, you have water? As a water steward, it is my duty to share some important tips on how you can conserve water. Please read these valuable tips and see how you can help conserve water."

Outdoor Water Conservation Tips

- Water the lawn only when needed
- Install an automatic irrigation system
- Plant drought resistant trees and plants
- Keep lawn free of weeds
- Mow grass higher than normal
- Don't let the hose run while washing the car
- Use a broom to clean the sidewalk and driveway instead of a hose
- Use automatic shut-off nozzles on hoses

Indoor Water Conservation Tips

Typically, inside your house, bathroom facilities constitute nearly 75% of the water used.

Bathroom Tips:

- Check all faucets, pipes and toilets periodically for leaks
- Install water saving shower heads and fixtures
- Install a low-flow toilet
- Turn off water while shaving and brushing teeth
- Don't use the toilet as a wastebasket

Kitchen and Laundry Tips:

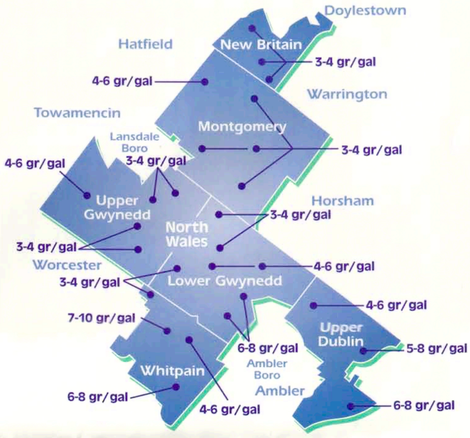
- Fill your dishwasher before you run it
- Don't let the water run while rinsing vegetables and dishes
- Select proper water level for laundry

What Makes Water Hard?

Water hardness is referred to as a measure of the soap or detergent consuming power of water. Technically, the salts of calcium and magnesium that are commonly present in natural water cause hardness.

In the water industry hardness is expressed in terms of milligrams per liter (mg/l). In the water treatment business hardness is most often expressed in terms of grains per gallon (gr/gal). The conversion factor is 17.1 mg/l equals 1 gr/gal of hardness. The table that follows describes the various textbook levels of hardness:

Description	Hardness (mg/l)	Hardness (gr/gal)
Extremely Soft	0-45	0-2.6
Soft	46-90	2.6-5.2
Moderately Hard	91-130	5.2-7.6
Hard	131-170	7.6-9.9
Very Hard	171-250	10.0-14.6



To Soften, or Not to Soften?

The typical equipment used for water softening is the ion exchange water softener. Softening is accomplished by means of synthetic resin media exchanging ions of calcium and magnesium with ions of sodium. Although this method of softening can produce water with zero hardness, it is important to understand the limitations of the process.

- Ion exchange softeners increase the sodium content of the treated water.
- Households that use these devices show elevated levels of lead and copper in the treated water.
- The softening process strips the chlorine residual from the water and may accelerate heterotrophic bacterial growth within the plumbing system.

As the Authority continues to modify and upgrade our distribution capabilities we will be able to transfer additional amounts of naturally soft Forest Park water throughout the system. This will continue to increase the quality of the water we provide and lower the levels of those factors that attribute to water hardness and the aesthetic problems they may present.

Ground Water vs. Surface Water

As water seeps through the ground to reach the aquifers it is filtered and purified through the layers of the earth. At the same time water dissolves and retains the naturally occurring minerals it comes in contact with. Ground water usually does not need to be treated because Mother Nature does such a good job with the purification process. Higher levels of dissolved solids, constant cool temperature, and low levels of dissolved oxygen characterize ground water. However, ground water may contain an abundance of the minerals that can contribute to hardness problems. Supplemental ground water supplies used by the Authority produce water with a hardness range of 12 to 15 grains per gallon.

Water that comes from streams, rivers and lakes is referred to as surface water. Surface water accumulates mainly as a result of direct runoff from rain or snow. It does not percolate through the ground and does not pick-up the elevated levels of dissolved minerals that attribute to water hardness. Surface water is referred to as 'naturally soft', although it is not mineral free. In general, turbidity, suspended solids, rapid temperature fluctuations, and high levels of dissolved oxygen characterize surface water. The Forest Park Water Treatment Plant consistently produces water for distribution with an average hardness range of 2 1/2 to 4 grains per gallon, or 45 to 65 milligrams per liter.

It is important to realize that there isn't any one area of the Authority's distribution system that is served exclusively by ground water. In those areas where the wells do run to supplement the supply, blended water is delivered. The current system ratio is 85% surface water to 15% ground water, which may vary slightly on a seasonal basis.

NWWA
NORTH WALES WATER AUTHORITY
Pure water, quality service...naturally
200 West Walnut Street, P.O. Box 1339
North Wales, PA 19454-0339

PRSRT STD
AUTO
U.S. POSTAGE PAID
NORTH WALES, PA
PERMIT NO. 128

Serving 25,000+ customers in 7 municipalities in 2 counties.

1999 Water Quality Report

NWWA
NORTH WALES WATER AUTHORITY