



Myths vs. the Reality

The Truth About
Water-Efficient
Plumbing Products





Most Americans want to do all they can to use natural resources wisely and achieve environmental sustainability. Saving water is an important part of their commitment and can be achieved by purchasing and installing WaterSense® faucets, showerheads, toilets and other plumbing products. The WaterSense program brings high-performing, water-efficient plumbing products to consumers through a partnership between the U.S. Environmental Protection Agency (EPA) and private and public organizations including Plumbing Manufacturers International (PMI).

WaterSense plumbing products have saved American consumers more than 4.4 trillion gallons of water and \$87 billion in water and energy bills, according to the EPA, since these products first became available in 2006. Despite the water-efficient performance of these products, myths relating to them persist.

In this fact sheet, PMI presents the reality behind the WaterSense products that Americans use every day.

Myth: Water-efficient plumbing products don't work well and don't save much, if any, water.

Reality: Older plumbing products marketed as "low flow" did not always work well. Since then, however, plumbing manufacturers have produced a wide range of water-efficient products based upon years of research, development and testing. A growing number of today's modern plumbing products have earned the WaterSense label by meeting the EPA's rigorous criteria for both high performance and water efficiency. Developed using the latest technology, these highly engineered products are certified by independent, third-party testing authorities.

For example, an average family of four can save thousands of gallons of water a year just by installing a WaterSense toilet using only 1.28 gallons of water per flush (gpf) in place of a toilet manufactured before the 1994 implementation of the 1992 Energy Policy Act (EPACT), which established higher water efficiency standards for plumbing products.

- Replacing a 7.0 gpf toilet saves 42,000 gallons of water per year
- Replacing a 5.0 gpf toilet saves 30,000 gallons of water per year
- Replacing a 3.5 gpf toilet saves 16,000 gallons of water per year
- Replacing a 1.6 gpf toilet saves 2,000 gallons of water per year



The average family can save 13,000 gallons of water and \$130 in water costs per year by replacing all old, inefficient toilets in their home with WaterSense labeled models, according to the EPA.

To learn more about how to save water, visit the EPA's water savings calculator at epa.gov/watersense/our_water/start_saving.html#tabs-3.

Myth: Water-efficient plumbing products are hard to find and cost too much.

Reality: Purchasing reasonably priced, water-efficient products is easy. Thousands of WaterSense products in many models and styles are available at retail stores, from wholesale outlets and online. These fixtures come in a range of prices – from low-cost to luxury level. Thanks to the many manufacturers making these high-efficiency products and the high consumer demand, there are products to fit every price point. Just look for the WaterSense label to ensure performance. Many showrooms have installed working demonstration models that enable customers to see WaterSense products in action.

Myth: A lower water flow is better.

Reality: Arbitrarily lowering flow rates can result in unintended consequences causing discomfort or having a negative impact on sanitation and safety. To avoid these consequences, plumbing product manufacturers consider many factors when designing products, especially products that use less water. Among the questions they ask are:

- Is there enough water moving through the toilet to remove waste efficiently?
- Is there enough water flow in a showerhead or faucet to rinse shampoo from hair?
- Is your shower valve compatible with the flow rate of your showerhead? Having this compatibility is important to avoid thermal shock – a dramatic and unexpected change in water temperature.



Just as manufacturers consider the effects of water flow on the entire plumbing system when designing products, regulators and policymakers should consider these effects before setting lower flow rates. It's important to understand how low flow may produce unintended consequences with an adverse impact on health and safety. PMI can be a valuable partner and resource when changes to flow rates are being considered. We can help to create an understanding of the impact

flow rates may have on plumbing systems and advise on the feasibility of proposed changes. Lower flow isn't always better.

It's easy to forget that the number one job of plumbing is to protect public health and safety. Because of its contribution to making clean, drinkable water available, plumbing has likely protected more lives and extended life expectancy more than any medical advancement.

Myth: Manufacturers should do more to reduce the amount of water their products use.

Reality: Plumbing manufacturers have already done a tremendous amount. They spend thousands of hours engineering and testing products to achieve optimal water efficiency and performance. These products help to save water while also protecting health and safety. Manufacturers voluntarily participate in the WaterSense program, demonstrating their commitment to developing water-efficient products.

Together with PMI, these manufacturers proactively consider consumer behavior, potential unintended consequences, and health and safety concerns when developing new products. The good news: these considerations have already been addressed in existing products, and any new product bearing the WaterSense label will meet high water-efficiency and performance standards while protecting public health and safety.

Myth: Lowering flow rates and flush volumes is the best way to save water.

Reality: The biggest immediate water savings won't come from designing and manufacturing plumbing products for the future, but from retiring older products still in use. The average family can save 13,000 gallons of water and \$130 in water costs per year by replacing all old, inefficient toilets in their home with WaterSense labeled models, according to the EPA. But WaterSense products can't save water if they aren't being used, and most homes and businesses do not have these products yet, according to a study commissioned by PMI:

safep plumbing.org/watersense-study.

The best way to save water would be to address loss due to antiquated infrastructure. The USA loses about about 2 trillion gallons of its publicly treated water each year through the combination of 240,000 water main breaks and an aging – and leaky – infrastructure of pipes, pumps and other conduits, according to the American Society of Civil Engineers' Infrastructure Report Card.

Myth: Water conservation is the same as water efficiency.

Reality: The two terms are not the same. Water conservation is often associated with efforts to ration water use, while water efficiency is about finding better ways to use less water to flush a toilet or take a shower, for example. Trying to conserve water by arbitrarily lowering flow rates can actually cause plumbing products to use more water than intended. For example, if the water coming from a showerhead does not stream out at a high enough rate and speed to rinse shampoo from hair, an individual may need to use more water to do the job than otherwise. Or, if the flow rate on a faucet is too low, the water may need to run longer before it becomes hot, thereby wasting more water than saved. Also, if using an inadequate pre-rinse sprayer, restaurant workers may need to run water longer to remove baked-on food from pans, plates and utensils. High-efficiency plumbing products save water.

Myth: Water-efficient toilets need to be flushed twice.

Reality: Not true for today's WaterSense toilets, which work better than water-guzzling, pre-1994 models.

To earn the WaterSense label today, toilets must use water efficiently, without sacrificing performance. Independent testing agencies hold WaterSense toilets to the standard of 350 grams – or $\frac{3}{4}$ of a pound – in a single flush. There is no need to double flush well-engineered toilets.

Myth: Reducing flow rates impacts in-home plumbing but not drain lines leading to sewage systems.

Reality: Reducing flow rates may have unintended consequences, both on in-home plumbing and on “drain line carry,” which measures how far waste moves through the pipes away from the toilet after flushing. A significant concern in the design and engineering of today’s toilets, drain line carry has been the subject of extensive research within the plumbing products manufacturing industry. PMI looks to work with government agencies to ensure the highest overall system performance possible without undesirable side effects.

Myth: Manufacturers object to enhancing water efficiency.

Reality: PMI members have a long history of advocating for water-efficiency, health and safety, and sustainability, as our historical time-line shows. We continually engage in proactive, quality improvement efforts relating to both water-efficiency and performance, including active participation in the voluntary WaterSense program.

Myth: Water-efficient products aren’t stylish and don’t match my bathroom or kitchen.

Reality: Today’s plumbing products come in a wide range of styles and designs. From traditional to contemporary, from residential to commercial, these products come in an endless array of sizes, colors, finishes and designs. WaterSense products look as well as they work.





Look for the WaterSense Label

WaterSense is a public-private partnership to bring high-performing, water-efficient plumbing products to consumers. Thousands of WaterSense products are available and can be found in a variety of price points and styles at home improvement stores, showrooms and online. These products meet high standards of performance, water efficiency and customer satisfaction.



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