



STEPHANIE THORNTON AND STEPHANIE TANNER

## A new reason to sing in the shower

USEPA UNVEILS  
ITS LONG-AWAITED  
WATERSENSE SHOWERHEAD  
SPECIFICATION.

**W**hat are consumers looking for in a showerhead? In the words of Cosmo Kramer: “Power, man. Power.” For those who’ve watched—and winced at—the infamous showerhead episode on *Seinfeld*, it goes without saying that lower-flow showerheads have the reputation of being, well, wimpy.

In the *Seinfeld* episode, Kramer and Newman go to desperate measures to get rid of the low-flow showerheads their apartment superintendent installed. They’re willing to search anywhere and try anything—even a black-market model used for washing circus elephants—to replace the new showerhead’s feeble flow. In comic relief, it spells out a serious issue. If water-efficient showerheads lack sufficient spray power, people will compensate by taking longer showers or reverting to a high-flow unit, and all the potential water and energy savings will go down the drain.

Staff on the US Environmental Protection Agency’s (USEPA’s) WaterSense® program have spent the past two years developing the agency’s draft specification for showerheads, which was released for public comment in September 2009. To create the specification, WaterSense staff members collaborated with a number of plumbing industry leaders, including product manufacturers, product certification bodies, water utilities, and other stakeholders, who participated in the American Society of Mechanical Engineers (ASME) and the Canadian Standards Association (CSA) joint task force on water-efficient showerheads.

Together with this task force, USEPA has created a protocol that will be used to test and certify WaterSense-labeled showerheads that deliver water efficiency and performance.

### POWER TO THE PEOPLE

As with all WaterSense specifications, the draft showerhead specification includes criteria to ensure that consumers will not have to sacrifice performance in order to achieve water savings.

The draft WaterSense specification sets the maximum flow rate for showerheads at 2.0 gpm at a range of flow pressures up to 80 psi, which is 20% more water-efficient than the current federal standard of 2.5 gpm specified in

the Energy Policy Act of 1992. The draft specification also defines the necessary qualities of a satisfactory shower, namely:

- pressure compensation—how well the showerhead maintains its flow at different water pressures,
- spray pattern—how the showerhead distributes water, and
- spray intensity—how powerful the flow is for effectively rinsing off soap and shampoo lather.

USEPA conducted consumer testing in October 2008 to determine and evaluate these characteristics. Nearly 40 individuals ranging in age from 22 to 78 collectively evaluated 22 showerheads in the comfort of their homes and provided valuable feedback regarding each showerhead's performance.

Among other findings, consumer testing revealed three main trends. First, people strongly dislike showerheads that force water in a single jet from the middle of the showerhead. Second, they tend to object to showerheads that spray in a "donut" pattern, with plenty of water around the circumference and nothing in the middle. Third, weak sprays just didn't measure up.

Thus USEPA designed the WaterSense performance criteria to weed out the poor spray patterns and weak shower sprays that were identified as unsatisfactory in the consumer testing. The agency also held a public comment period to gather more input on potential performance criteria from the general public and a broader group of stakeholders.

Once USEPA finalizes the specification, showerheads will have to be independently tested and certified to meet the final specification before they can earn the WaterSense label. The WaterSense program's certification process has proven effective, with more than 1,300 bathroom sink faucet models and 380 toilet models already bearing the WaterSense label. The addition of showerheads provides a full suite of products that will enable homeowners to maximize water savings in their bathrooms.

## CLEAN UP WITH SAVINGS

Because there are nearly 110 million occupied housing units and an average of two showerheads per household, WaterSense estimates that there are approximately 220 million showerheads currently installed in homes across the United States.

---

Nearly 1.2 trillion gallons of water are used for showering in the United States annually.

---

Showering is one of the leading water uses in the home, accounting for nearly 17% of residential indoor water consumption or about 12 gpd per person. That's more than 1.2 trillion gal of water used for showering in the United States annually, which is approximately the amount of water delivered by the public supply system

for the states of New York and New Jersey for a year.

All of this means that if every household in the United States installed WaterSense-labeled showerheads, it would save more than \$1.5 billion in water utility bills and more than 250 bil gal annually—

more than enough water for the public supply system in Miami, Fla. In addition, Americans could also save about \$2.5 billion per year in energy costs for heating water.

## PROPERLY DESIGNED PLUMBING SYSTEMS A MUST

USEPA worked with the ASME/CSA task force to carefully examine

## Fix a Leak Week 2010

There are ways to save water even when the shower isn't running. Nationwide, more than 1 trillion gal of water leak from US homes each year. That's why WaterSense is reminding Americans to check their plumbing fixtures and irrigation systems for leaks as part of its annual Fix a Leak Week, March 15–21, 2010.

Even a small leak adds up quickly. For example, a showerhead leaking at 10 drips per minute wastes more than 500 gal per year—enough water to wash 60 loads of dishes in the dishwasher. The average home can waste 11,000 gal of water per year, enough to fill a backyard swimming pool. Simply by fixing leaks, a family can save as much as 10% on its utility bills and save water for future generations.

Water professionals can help WaterSense by encouraging Americans to pick up a wrench or hire a plumbing professional and get busy making these small repairs. For bigger repairs that could warrant

buying a new fixture, point consumers toward WaterSense-labeled toilets, bathroom sink faucets, and aerators—and soon, showerheads.

Parents, teachers, and conservation outreach coordinators will be excited about the newest addition to the Fix a Leak Week resources. WaterSense has developed curriculum materials for grades 3 through 5 that focus on saving water while finding leaks, including a science experiment to check for leaks in the toilet.

For more information about Fix a Leak Week, including the teacher's curriculum, visit [www.epa.gov/watersense/fixaleak](http://www.epa.gov/watersense/fixaleak).

Additional Fix a Leak Week tools are available to WaterSense partners. To learn how to become a WaterSense partner and gain access to these and other program materials, visit [www.epa.gov/watersense/partners/index.htm](http://www.epa.gov/watersense/partners/index.htm).

## WaterSense Showerhead Development Timeline

### 2006

Initiated product research

### Early 2007

Began coordination with the American Society of Mechanical Engineers/Canadian Standards Association task force

### August 2007

Published notification of intent

### October 2008

Conducted consumer testing

### 2008–2009

Developed test protocols to measure performance

### Spring/Summer 2009

Conducted series of tests at different labs to ensure protocols were repeatable and results reproducible

### September 2009

Issued draft specification for public comment

### November 2009

Closed public comment period

### Early 2010

Anticipated release of final specification

the effects of its showerhead criteria on health and safety. An important consideration is that all showerheads are susceptible to changes in water temperature when water pressure in the shower supply line suddenly changes, say, from an unwitting flush of the toilet downstairs. So it's important that all showerheads be installed into properly designed plumbing systems with mixing valves that correctly adjust incoming water pressure or outgoing water temperature to prevent sudden or extreme fluctuations in the shower's water temperature.

To aid this process, USEPA added a requirement to the draft specification that manufacturers must mark product packaging to make it easier for plumbers and consumers to identify whether a showerhead is compatible with a particular mixing valve. As with all WaterSense-labeled products, USEPA encourages consumers to follow manufacturers' instructions and work with plumbing professionals to ensure proper installation, system setup, and use of the product. People living in homes built before 1990, and homes with two-handle bathtub faucets in particular, should seek a professional plumber's advice.

### TURNING HEADS IN TEXAS AND TAMPA

Together with toilets and faucets, showerheads will round out the suite of residential plumbing fixtures that can earn the WaterSense label. This is good news for water providers and other water professionals interested in simple ways to improve the water efficiency in their local communities.

Showerheads offer water utilities a unique opportunity to offer rebates and giveaway programs.

Less expensive than toilets, but with greater impact than bathroom sink faucets, showerheads save more water and energy.

Numerous water utilities have been offering incentives for showerhead replacement for years. The San Antonio Water System (SAWS) in Texas has given out 8,500 showerheads to consumers and 3,000 to hotels as part of its retrofit program.

The Tampa Water Department in Florida has been providing free high-efficiency showerheads, faucet aerators, and toilet leak-detection tablets to its customers since the mid-1990s. Phoenix McKinney, a Tampa Water consumer affairs investigator, says on average the utility hands out 1,500 to 2,000 showerheads per year. "We use it for good customer relations," McKinney says "and to confirm our commitment to water

efficiency and draw attention to the overall ongoing need for water conservation on a continual basis."

Think consumers still need a reason to switch? Each home using WaterSense-labeled showerheads will be able to save as much as \$50 in utility bills and more than 2,300 gal of water per year—which translates to enough electricity to power a television for about a year. That's a lot of *Seinfeld* reruns.

### ABOUT THE AUTHORS



*Stephanie Thornton (to whom correspondence should be addressed) is Outreach Specialist for Residential Products for the US Environmental Protection Agency (USEPA), 1200 Pennsylvania Ave., N.W., 4204M, Washington, DC 20460; thornton.stephanie@epa.gov.*

*Thornton received the USEPA Bronze Medal for Collaborative Problem Solving and the USEPA Gold Medal for Exemplary Service. Thornton received her bachelor's degree in political science from the Ohio University, Athens, and her master's degree in communication from Johns Hopkins University in Baltimore, Md. Stephanie Tanner directs water efficiency and performance specification development for the WaterSense program at the USEPA. A graduate of the US Merchant Marine Academy in Kings Point, N.Y., (BS degree) and of George Washington University in Washington, D.C., (MS degree), Tanner is the recipient of USEPA's Bronze Medal and a Gold Medal Team Award.*

To learn more about the draft WaterSense showerhead specification, please visit [www.epa.gov/watersense](http://www.epa.gov/watersense).