



EPA's WaterSense Label for New Homes

The 2008 Forum on Water Heating and Use
ACEEE Sacramento



Presentation Outline

- Introduction to WaterSense
- WaterSense New Homes
- Overview of efficiency criteria
- Hot water distribution criteria
- Program timeline



What Is WaterSense?

A partnership program
sponsored by the U.S. EPA

Mission

To promote the value of water and help
Americans make smart decisions regarding
water use and water-using products

To increase the adoption of water-efficient
products and services by consumers and
organizations

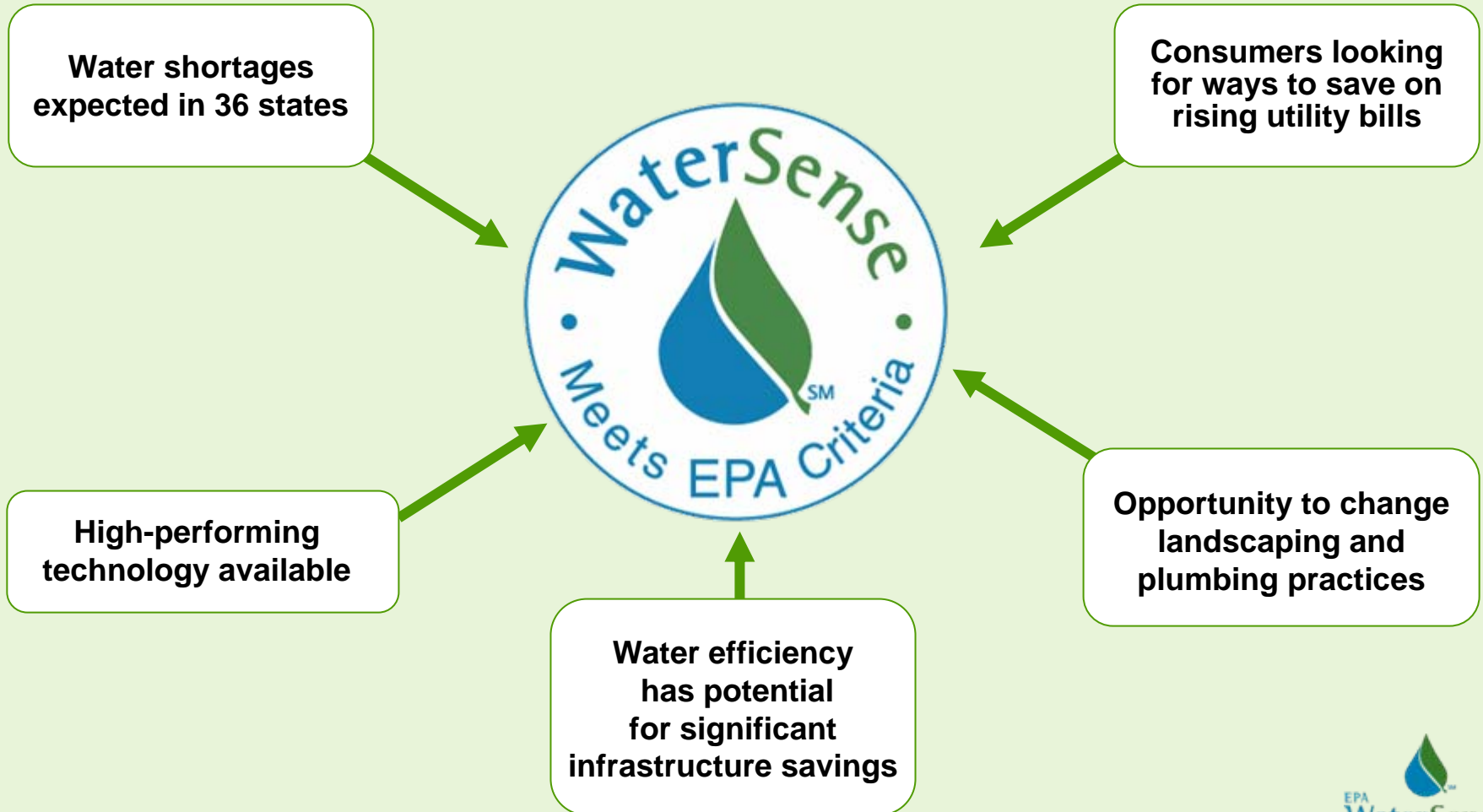


Strained Resources



- Updating infrastructure could cost nearly \$500 billion.
- Water efficiency could help delay these costly projects and save energy associated with pumping and treating water.

Need for Water Efficiency





WaterSense Product Evaluation Factors

WaterSense uses the following factors in determining which products to label. Products must:

- Offer equivalent or superior performance.
- Be about 20 percent more water-efficient than conventional models.
- Realize water savings on a national level.
- Provide measurable results.
- Achieve water efficiency through several technology options.
- Be effectively differentiated by the WaterSense label.
- Be independently certified.



Look for the WaterSense Label

■ Toilets

- More than 120 labeled models
- List available online at:
www.epa.gov/watersense/pp/het.htm

■ Faucets

- More than 30 labeled models
- List available online at:
www.epa.gov/watersense/pp/bathroom_faucets.htm

■ Showerheads

- Under development



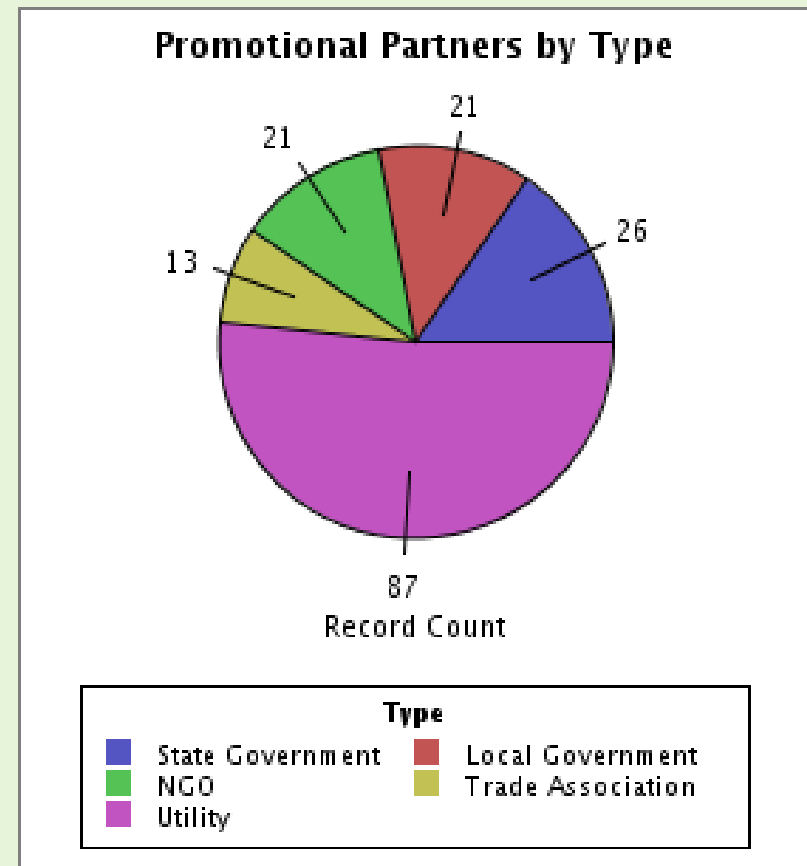
Schedule for Evaluating WaterSense Products & Programs

	<i>Completed: 2006/2007</i>	<i>Planned: 2008 and Beyond</i>
<i>Irrigation</i>	<i>Certification for Irrigation Professionals</i>	<i>Moisture Sensors Drip Micro Technology Smart Controllers</i>
<i>Residential Plumbing</i>	<i>Toilets Faucets</i>	<i>Showerheads Water Softening Systems</i>
<i>Commercial Plumbing</i>		<i>Toilets Pre-rinse Spray Valves Urinals</i>
<i>Other</i>		<i>New Homes Autoclaves Medical Vacuums Additional Professional Certifications</i>

WaterSense Promotional Partners

Partners:

- 30 Manufacturers
- 179 Promotional Partners
 - 90 utilities in 27 states
 - 28 state agencies
 - 23 local governments
 - 22 NGOs
 - 16 trade associations
- 4 Certifying Organizations
- 20 Retailers/Distributors
- 296 Certified Irrigation Professionals





Program Benefits—Energy



- Water savings also translate to energy savings.
- Approximately 80% of municipal water processing and distribution costs are for electricity.
- Nationwide, drinking water and wastewater systems use 50 billion kilowatt-hours per year—enough electricity to power more than 4.5 million homes for an entire year.



Program Benefits— Global Climate

- Reduces greenhouse gas emissions associated with energy needed to pump, treat, and heat water
- Helps minimize risks associated with uncertain future climate impacts
- If only one out of every 100 American homes retrofitted with water-efficient fixtures, we could avoid 80,000 tons of greenhouse gas emissions—equivalent to removing nearly 15,000 automobiles from the road for a year!



WaterSense New Homes





A New WaterSense Program

- EPA is developing a new program that will address water efficiency in New Homes.
- It will use existing WaterSense criteria for products and irrigation professionals and additional criteria for other water-related products and designs.
- Builders who meet the specification can differentiate their homes as WaterSense labeled
- EPA intends to develop a third-party certification program for WaterSense labeled New Homes using the RESNET model



Why New Homes?

- As many as 14 million new homes needed by 2015.
- One half of the homes that will exist in 2030 have yet to be built.
- Water use in new homes may be increasing.
- Homes with highly efficient technology can save about 30% or more in water use.
- If all new homes used high efficiency technology, about 1 billion gallons of water per day could be saved by 2015.



WaterSense New Homes Program Design

- Stand-alone program under the WaterSense mark (possible nesting in other programs)
- Single-level efficiency designation
- Efficiency criteria (pass/fail)
 - Indoor – mostly prescriptive
 - Outdoor – prescriptive or performance-based
- Homes designed to use at least 20% less water than “conventional homes.”
- Third-party certification



Overview of Draft Specification

- Indoor criteria
 - Service pressure
 - Plumbing fixtures
 - **Hot water distribution**
 - Appliances (if installed)
 - Other equipment (if installed)
- Outdoor criteria
 - Landscape Design
 - Irrigation (if installed)
- Homeowner's manual





Draft Specification - Indoor...

WaterSense plumbing fixtures where applicable.

- **Toilets** – WaterSense labeled (1.28 gpf)
- **Bathroom Faucets** – WaterSense labeled (1.5 gpm)
- **Kitchen Faucets** – existing national standard - 2.2 gpm (no water efficiency criteria)
- **Showerheads** – existing national standard 2.5 gpm (WaterSense notice of intent to label); limit of 2.5 gpm per 2500 sq. in
- **Service Pressure** – 60 psi (affects flow, leaks)



Draft Specification - Indoor Optional Items...

Appliances – Energy Star labeled

- If offered, financed, installed, or sold as upgrades:
 - Dishwasher – Dishwashers shall be ENERGY STAR® labeled.
 - Clothes washer – Clothes washers shall be ENERGY STAR® labeled with a water factor of 6.0 or less.



Draft Specification - Indoor Optional Items

Other Equipment – precludes use of water wasters

- If offered, equipment such as the following shall meet applicable water use criteria:
 - Evaporative coolers
 - Water softeners
 - Drinking water treatment systems



Hot Water Delivery System...

Hot Water Delivery System –

- All hot water pipes, both above and below ground, shall be insulated to a minimum of R4.
- Each home shall be equipped with at least one of the features described below to minimize water loss in delivering hot water. Compliance will be measured through performance testing. The features described below can be combined as appropriate.
 - Demand-initiated hot water recirculating system
 - Whole house manifold system
 - Core plumbing system



Hot Water Delivery System

- Demand-initiated hot water recirculating system - System should optimize both water and energy efficiency and shall be designed such that less than 0.13 gallons (0.49 liters) of water are in the piping between the recirculating loop and any hot water fixture.
- Whole house manifold system – System shall be designed such that less than 0.38 gallons (1.44 liters) of water are in the piping between the hot water source and any hot water fixture.
- Core plumbing system – System shall minimize pipe volume between the hot water source and any hot water fixture to 0.38 gallons (1.44 liters) or less.



Definitions

- Core plumbing system – Hot water distribution system where water volumes in the pipes are reduced by a combination of smaller pipe diameters and shorter pipe runs due to a centrally located water heater.
- Demand-initiated recirculating hot water delivery system – In this system, a recirculating pump rapidly pulls hot water from a water heater to an end use while simultaneously sending cooled-off water from the hot water lines back to the water heater to be reheated.
- Manifold system – Also called parallel pipe or home run system has a manifold connected after the water heater from which individual pipes are connected to each water fixture.



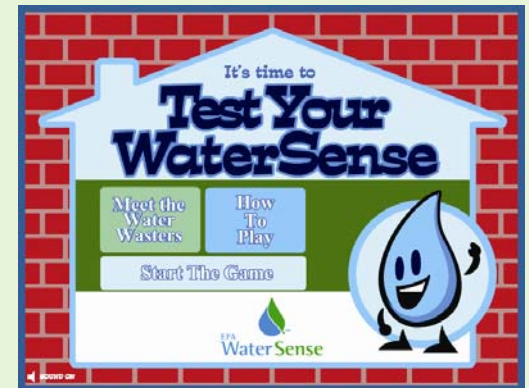
2008 Program Timeline

Issue draft spec for public comment	May
Hold public meeting/webinar	Jun
Receive comments	July
Finalize program materials	Sep
Devise marketing and recruiting plan	Sep
Prepare marketing materials, partner services	Oct
Determine label format; revise guidelines	Oct
Develop interim certification scheme	Nov
Issue final specification	Nov
Launch program on geographically-limited basis	Dec

More Information

■ WaterSense Information

- Web site: www.epa.gov/watersense
 - List of products
 - Partnership information
 - Test Your WaterSense Quiz
 - Fact sheets and other resources
- WaterSense New Homes Information
 - Web page: www.epa.gov/watersense/specs/homes.htm
- E-mail: watersense@epa.gov
- Toll-free Helpline: (866) WTR-SENS





EPA
WaterSense

Every drop counts.