

look for



# Understanding the WaterSense Label



Alicia Marrs  
WaterSense Program



# EPA and WaterSense: Why & What

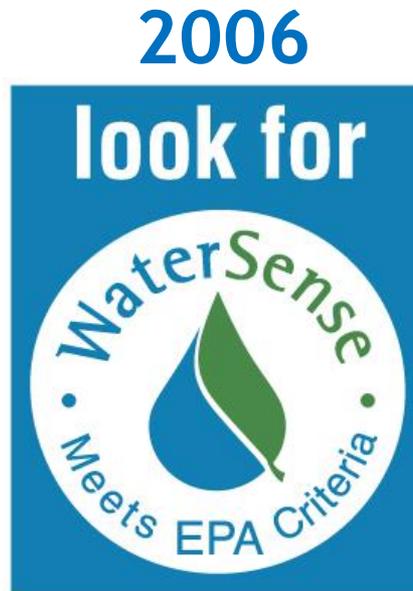


**Water shortages  
expected in 40 states**

Communities face  
major infrastructure  
investments

**Consumers challenged  
by rising utility bills**

Much of water used  
outdoors is wasted



Identify high-performing  
technology

Promote water efficient  
behavior/action

Help consumers  
save money

Reduce need to  
expand infrastructure  
capacity

Save water for  
critical needs

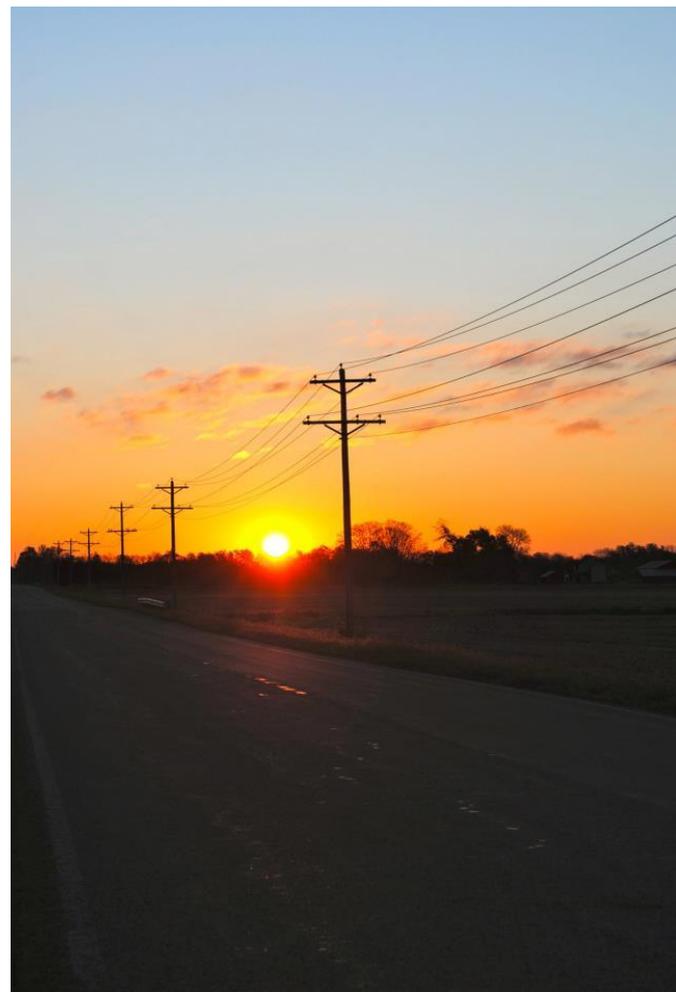


# Not Just About Water

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- Moving, treating, and heating water uses energy
  - Every gallon of water has an energy “footprint”
- Energy used by the Water sector
  - Nationally - ~3-4%
  - California - ~20%
  - Municipal level - can be > 40%
  - System level - energy is one of the highest utility costs





# What's Special About WaterSense?

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- A label with integrity
  - Third-parties independently certify that products and homes meet EPA criteria
  - Backed by the credibility of EPA
- Smart use of resources
  - EPA provides national standardization and outreach for water-efficiency
  - Manufacturers absorb product research, testing, and branding costs
  - Licensed certifying bodies certify the products and police the label's use



# Confidence in Labeled Products

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- WaterSense labeled products must meet EPA criteria for both water-efficiency *and* performance
  - In conjunction with industry, EPA defines measurable performance criteria
  - If necessary, EPA works with other organizations to develop performance criteria (SDOs, industry groups)
- WaterSense labeled products are certified by an accredited/licensed, independent third-party
  - Test products
  - Assess manufacturers quality management system
  - Conduct periodic surveillance (i.e., audits, retest products, police the use of the label)
  - Issue label



# Product Certification Process



- Manufacturer applies to a licensed certifying body
- Licensed certifying body conducts product evaluation
  - Assesses production process and quality management system
  - Samples and tests product's conformance to WaterSense specification
  - Certifies the product and provides list to WaterSense
- Licensed certifying body authorizes manufacturer to use the WaterSense label
- Licensed certifying body conducts ongoing conformity assessment
  - Annual product retesting
  - Annual assessment of production process and quality management system
  - Annual surveillance of label use in the marketplace



# 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



# “Low Flow” is a No Go



VS



# WaterSense Labeled Products



**Flushing  
Urinals**



**Lavatory  
Faucets**



**Irrigation  
Controllers**



**Pre-rinse  
Sprayers**



**Tank-Type  
Toilets**



**Showerheads**



**New Homes**

**More than  
14,000  
Labeled  
Product  
Models**

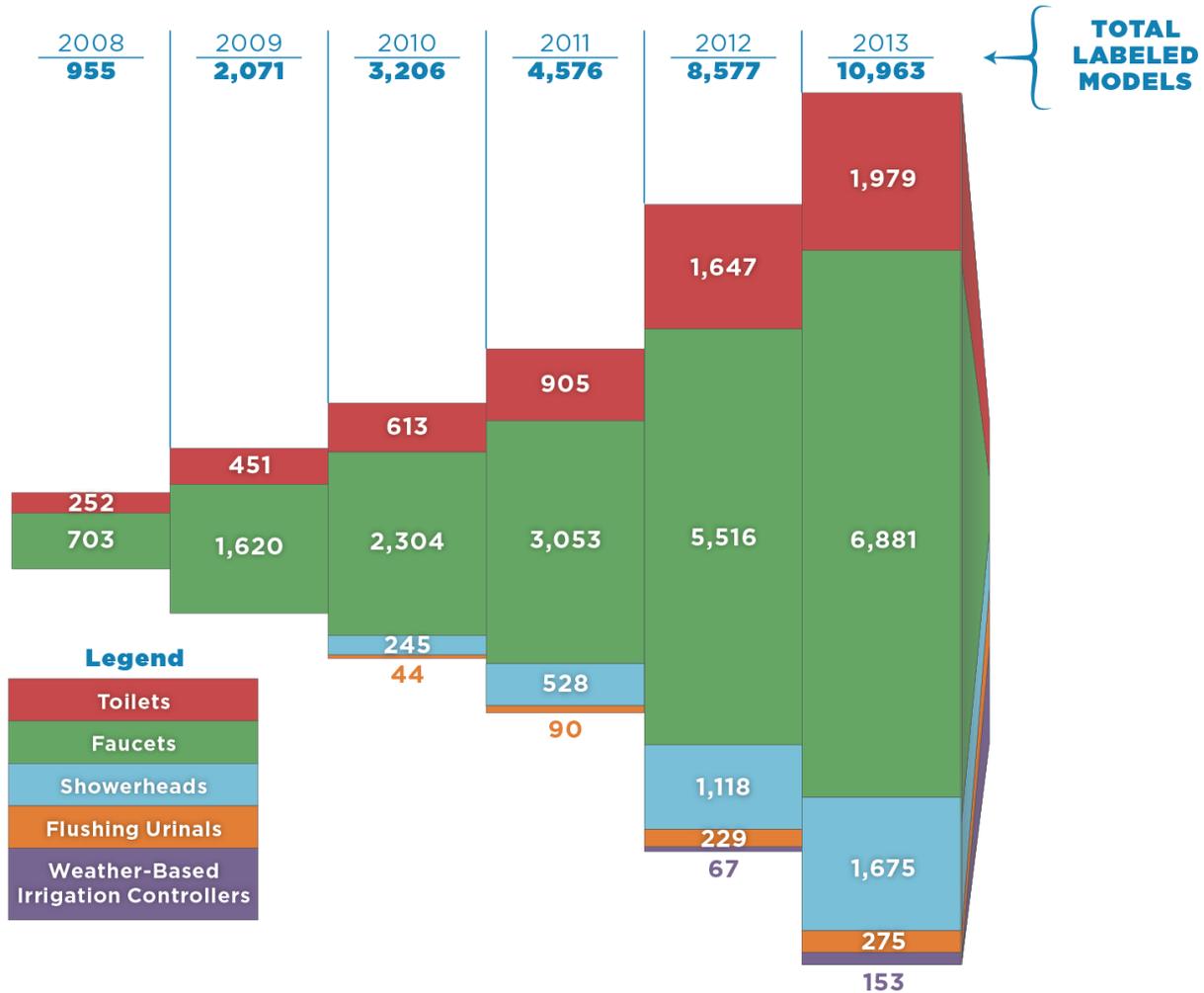


Water factors are also included in many ENERGY STAR qualified products



# 2013 WaterSense Accomplishments

## Products Labeled





# Schedule for Product Evaluation

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	<i>Complete</i>	<i>2013/2014</i>	<i>2014 and Beyond</i>
<b><i>Irrigation</i></b>	<i>Weather-based Controllers Professional Certification Programs</i>	<i>Soil Moisture-based controllers *</i>	<i>Irrigation Emission devices (sprinklers)</i>
<b><i>Residential Products</i></b>	<i>Toilets Faucets Showerheads</i>	<i>Water Softening Systems*</i>	<i>Water Treatment Systems Whole House Humidifiers Kitchen faucets</i>
<b><i>Commercial Products</i></b>	<i>Flush Urinals Pre-rinse Spray Valves</i>	<i>Flushometer Toilets*</i>	<i>Dipper Wells Autoclaves Glassware Washers Kitchen Equipment</i>
<b><i>Other</i></b>	<i>Single and multi- family Homes</i>		<i>Water Meters Additional Professional Certifications</i>



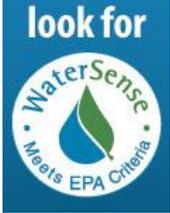
# Commercial Toilet Draft Criteria



- **WaterSense is considering setting a maximum flush volume of 1.28 gpf (4.8 Lpf)**
  - Matches currently accepted industry standards for high-efficiency toilets (HETs)
  - 258 high-efficiency flushometer-valve toilet combinations have been tested to **Maximum Performance (MaP) testing requirements**
- **Plumbing Efficiency Research Coalition (PERC) published a drainline carry study in November 2012.**
  - Investigated waste transport through drainline lengths up to 135 feet for flush volumes varying from 0.8 gallons to 1.6 gallons.
  - Media were successfully cleared from drainline apparatus for all 1.28 gallon test runs



# Confidence in Labeled Products



## High Efficiency Residential Toilets (HET)

### Conventional Toilets

- Maximum Water Use
  - 1.6 gallons per flush
- Performance Requirements
  - Must meet ASME A112.19.2 flushing requirements
    - Drainline transport of waste 12.2 ft

### WaterSense Labeled HETs

- Maximum Water Use
  - 1.28 gallons per flush
- Performance Requirements
  - Must meet ASME A112.19.2 flushing requirements
  - Must successfully remove at least 350 grams of waste

<http://watch.discoverychannel.ca/#clip1073134>



# Acceptance of WaterSense

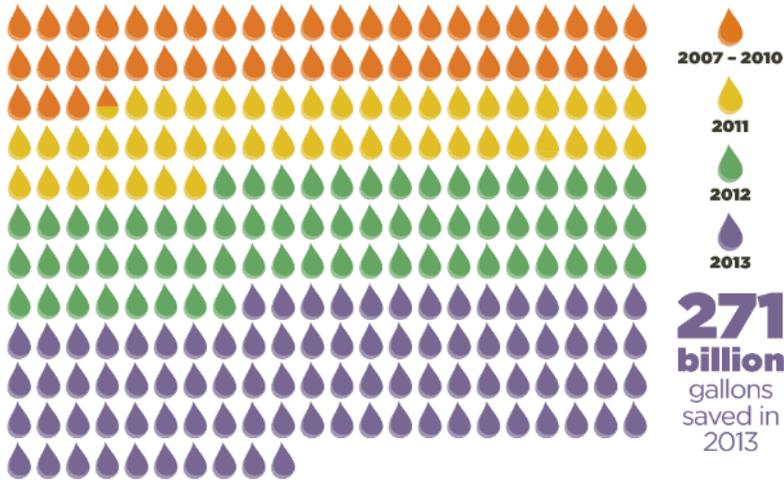


- The WaterSense label is recognized by other green programs
  - FEMP Designated Products
  - U.S. Green Building Council's LEED Rating Systems
  - Green Globes' Green Building Initiative
  - National Association of Home Builders' National Green Building Standard
  - International Code Council's International Green Construction Code
  - IAPMO Green Technical Supplement
  - States and Municipalities



# Savings Add Up! 2006-2013

**757 billion** gallons of water saved since 2006!



That's enough water to supply all the homes in the **United States** for **26 days!**

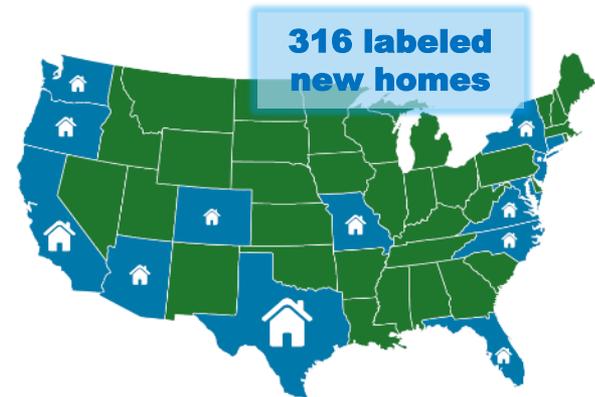
**WaterSense** has helped **reduce** the amount of **energy needed** to heat, pump, and treat water by

**101 billion**

**kilowatt hours**, enough to supply a year's worth of power to more than



WaterSense has **saved consumers** **\$14.2 billion** in water and energy bills.





# WaterSense at Work

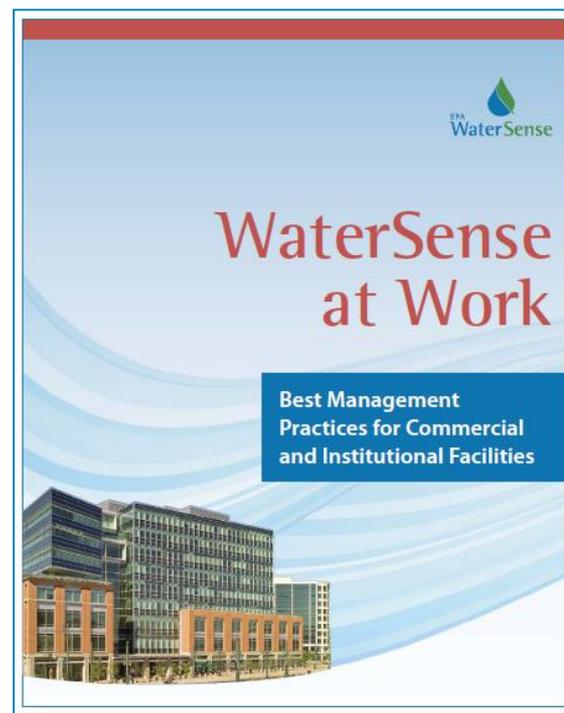
Released November 2012

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*WaterSense at Work* is a comprehensive set of water-efficiency best management practices created to help commercial and institutional facilities manage their water use. Best management practices (BMPs) include:

- Water management planning
- Water use monitoring and education
- Sanitary fixtures and equipment
- Commercial kitchen equipment
- Outdoor water use
- Mechanical systems
- Laboratory and medical equipment
- Onsite alternative water sources





# What's Included?

Each section incorporates WaterSense labeled products, water-efficient technologies, and water-saving techniques for both new and existing buildings:

- Overview of each practice or technology
- Operation, maintenance, and user education practices
- Retrofit options
- Replacement options
- Water, energy, and cost savings potential
- Additional resources

## 6.3 Cooling Towers

**Overview**

Cooling towers are used in a variety of commercial and institutional applications to remove excess heat. They serve facilities of all sizes, such as office buildings, schools, supermarkets, and large facilities, such as hospitals, office complexes, and university campuses. Cooling towers dissipate heat from recirculating water that is used to cool chillers, air conditioning equipment, or other process equipment. By design, they use significant amounts of water.

Cooling towers often represent the largest use of water in industrial and commercial applications, comprising 20 to 50 percent or more of a facility's total water use. However, facilities can save significant amounts of water by optimizing the operation and maintenance of cooling tower systems.<sup>4</sup>



Cooling towers work by circulating a stream of water through systems that generate heat as they function. To cool the system, heat is transferred from the system to the water stream. This warm water is then pumped to the top of the cooling tower, where it is sprayed or dripped through internal fill (i.e., a labyrinth-like packing with a large surface area). Fans pull or push air through the tower in a counterflow, crossflow, or parallel flow to the falling water. As some of the water is evaporated, the heat is removed.<sup>5</sup> The remaining cooled water is recirculated back through the systems to repeat the process.

The thermal efficiency and longevity of the cooling tower and its associated water loops depend upon the proper management of water recirculated through the tower. Water leaves a cooling tower system in four ways: evaporation, blowdown or bleed-off, drift, and leaks or overflows.

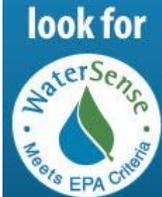
**Evaporation**

Evaporation is the primary function of the tower and is the method that transfers heat from the cooling tower system to the environment. The quantity of evaporation is not typically targeted for water-efficiency efforts, because it controls the cooling process (although improving the energy efficiency of the systems that use the cooling water will reduce the evaporative load on the tower). The rate of evaporation from a cooling tower is typically equal to approximately 1 percent of the rate of

<sup>4</sup> North Carolina Department of Environment and Natural Resources, et al. May 2005. *Water Efficiency Manual for Commercial, Industrial and Institutional Facilities*. Page 39. [www.watersense.org/Downloads.php](http://www.watersense.org/Downloads.php).  
<sup>5</sup> Ibid.

6-8 WaterSense at Work: Best Management Practices for Commercial and Institutional Facilities

# 2014 Commercial Focus



The screenshot shows the WaterSense website navigation menu with 'Commercial' selected. The dropdown menu includes 'Facility Types', 'H<sub>2</sub>Otel Challenge', 'Managing Water', 'Best Management Practices', and 'Resources'. Below the menu is a banner for the 'WaterSense H<sub>2</sub>Otel Challenge' featuring a hotel bell and icons of buildings and a tree. A navigation bar contains four buttons: 'HOME', 'TAKE THE PLEDGE', 'RECRUIT HOTELS', and 'TOOLS & TRAINING'. The main content area has the heading 'Take the Guest Work out of Saving Water!' and text: 'Launching in January 2014, the WaterSense H<sub>2</sub>Otel Challenge will encourage hotels to assess water use, learn about the best management practices for reducing water in hotels, and track their results.' Below this is the 'WaterSense H<sub>2</sub>Otel Challenge' logo and a paragraph: 'WaterSense partners will challenge hotels to learn about *WaterSense at Work: Best Management Practices for Commercial and Institutional Facilities* (BMPs), a comprehensive guide to commercial water efficiency. EPA and its partners will provide hotels with the tools to "ACT":'

- Raise awareness of WaterSense among hotel facility managers
  - Increase the use of WaterSense labeled products
  - Promote best management practices for water use reductions
  - Improve data quality by tracking progress
- Give WaterSense partners a framework to engage commercial and institutional customers
- Provide training and tools to assist hotel facility managers in saving water, energy, and money
- Educate hotel facility managers, employees, and guests about water efficiency

[www.epa.gov/watersense/challenge](http://www.epa.gov/watersense/challenge)



# Technical Webinars

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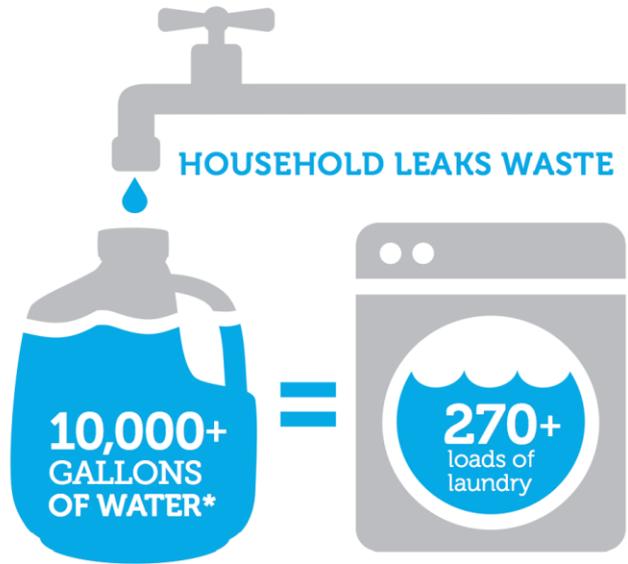
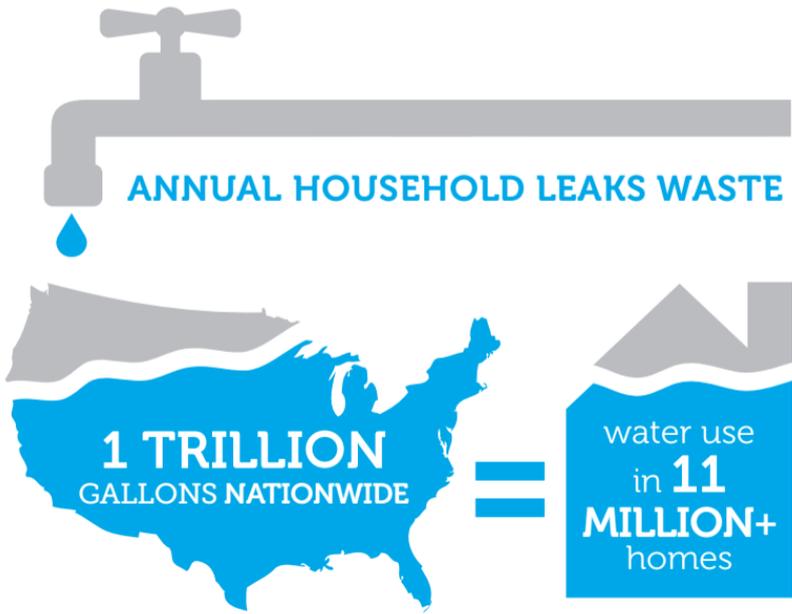


WaterSense will provide a series of technical webinars, each aimed at addressing major water use areas within a hotel:

- Take the Plunge: Introductory webinar
  - Assess, Track and Realize Payback
  - Washing 101: Laundry and Plumbing Primer
  - Make a Splash With Outdoor Water Savings
  - Water Assessment and Evaluation Tool
  - Minimize Water in Mechanical/HVAC Systems
  - Let's Talk About Education and Outreach
  - What's Cooking: Commercial Kitchen Savings
- 
- Registration will be through WaterSense website:  
<http://www.epa.gov/watersense/commercial/challenge.html>
  - All are/will be recorded/posted for future listening:  
<http://www.epa.gov/watersense/commercial/webinars.html>



# Why Fix a Leak Week?



\*Average U.S. family per year



Fix a Leak Week 2015

# Messaging Overview



## Fix a Leak Week: March 16–22, 2015

### 1. Check



Check for leaks. Look for dripping indoor and outdoor fixtures.

### 2. Twist



Twist and tighten pipe and hose connections, and twist on WaterSense labeled faucet aerators.

### 3. Replace

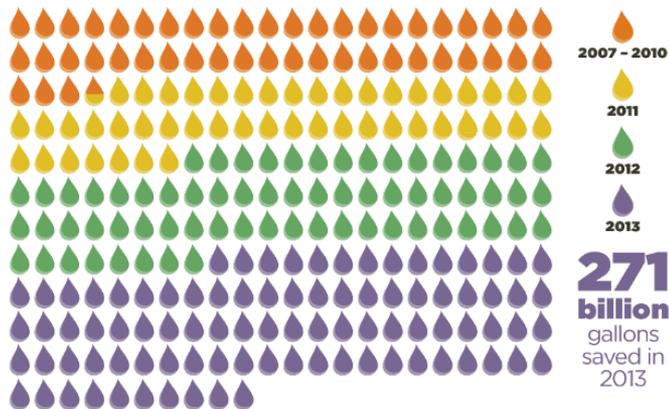


Replace the leaking fixture if necessary. Look for WaterSense labeled models!



# For More Information

**757 billion** gallons of water saved since 2006!



That's enough water to supply all the homes in the **United States** for **26 days!**

Website:

[www.epa.gov/watersense](http://www.epa.gov/watersense)

Lists of products

Partnership information – on line applications

Educational fact sheets and resources

Email: [watersense@epa.gov](mailto:watersense@epa.gov)

Toll-free Helpline:

(866) WTR-SENS (987-7367)