

WaterSense®

# Outdoor Water Efficiency and Program Overview

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May 2019

# Agenda

- WaterSense Background
- WaterSense Outdoors
  - Programs
  - Products
  - Additional strategies
- WaterSense Labeled Homes
- Commercial Water Efficiency



Photo: Judith Chaddock





# WaterSense Background

# What is WaterSense?

WaterSense is a voluntary partnership program launched by EPA in 2006 that provides a simple way to identify water-efficient:

- Products
- Programs
- Practices
- Homes



Products are independently certified for water efficiency **and** performance

- Beginning in the early 2000s, stakeholders asked for a program focused on water
  - "...request the Environmental Protection Agency establish a voluntary water-efficient product labeling program modeled after the highly successful ENERGY STAR program"
- Individual water utilities had inconsistent requirements for water-efficient products
  - Created a barrier to product innovation for manufacturers





# The WaterSense Vision

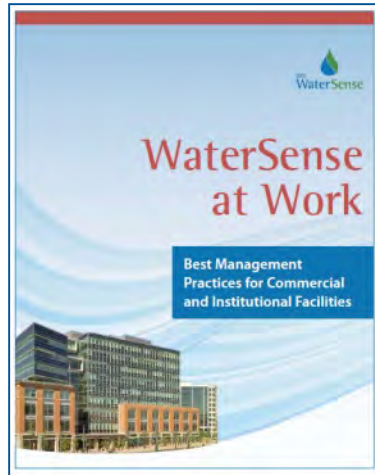
- WaterSense offers people a simple way to use less water
- Our vision is that all Americans will understand the importance of water efficiency and take actions to reduce their water use—in their homes, outdoors, and at work

## How will we achieve it?

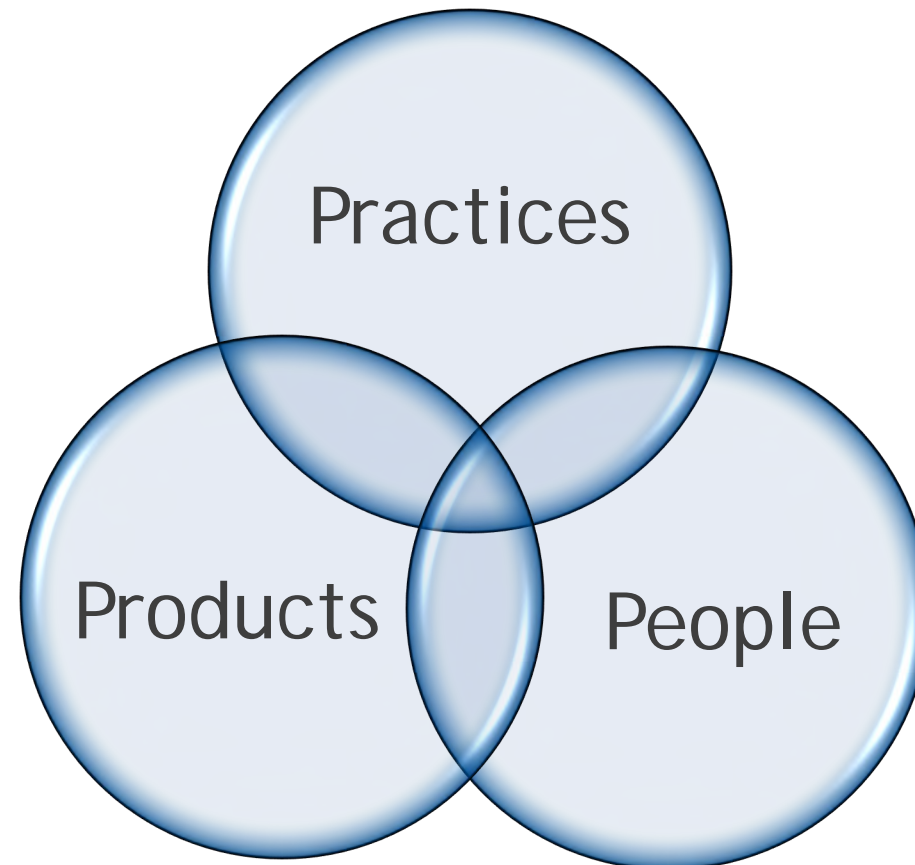
- By transforming the marketplace for products and services that use water
- By promoting a nationwide ethic of water efficiency to conserve water resources for future generations and reduce water infrastructure costs



# WaterSense Program Overview



Actions can be taken to  
reduce water use—at home,  
outdoors, and at work



Fixtures and  
technologies  
save water



Partners reach  
users to change  
behavior



# WaterSense Labeled Products



## Lavatory Faucets

Labeled since 2007  
16,500 labeled models



## Weather-Based Irrigation Controllers

Labeled since 2011  
800 labeled models



## Tank-Type Toilets

Labeled since 2007  
3,400 labeled models



## Flushometer-Valve Toilets

Labeled since 2015  
1,100 labeled models



## Flushing Urinals

Labeled since 2009  
700 labeled models



## Pre-Rinse Spray Valves

(Recently Sunset)

Labeled from 2013 to 2018  
30 previously labeled models



## Showerheads

Labeled since 2010  
8,300 labeled models



## Spray Sprinkler Bodies

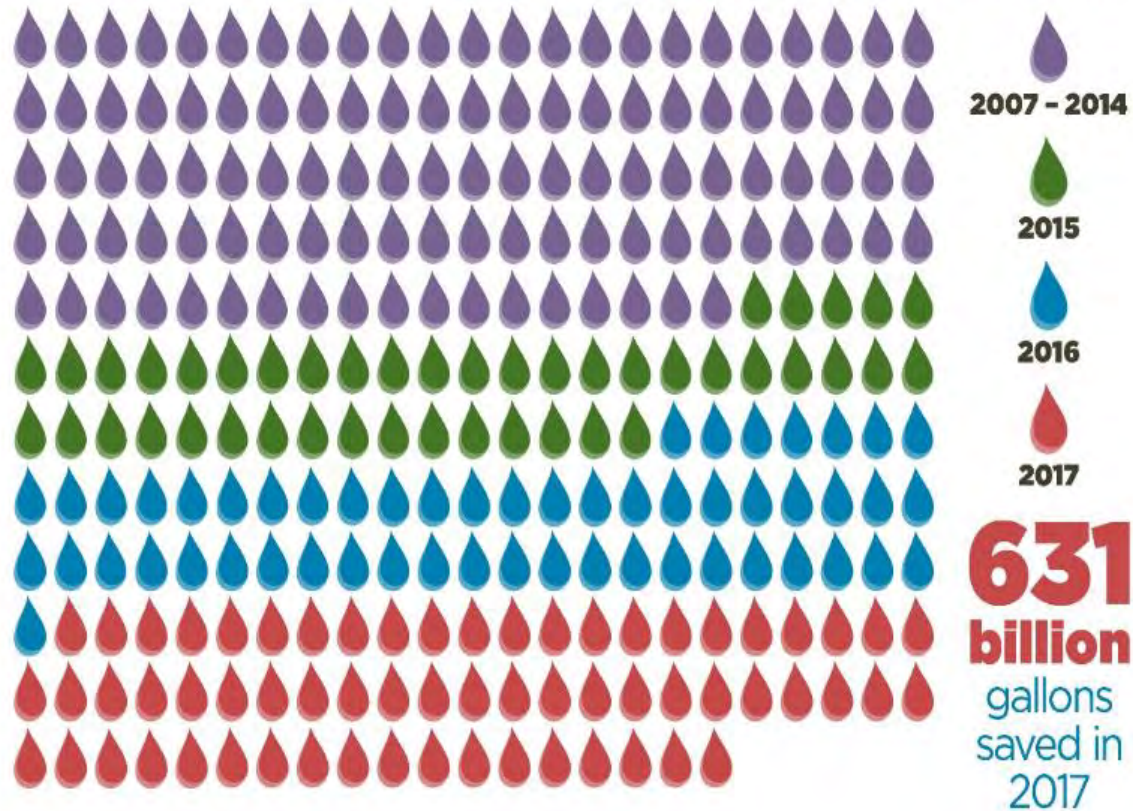
Labeled since 2017  
100 labeled models

\*Data as of April 2019



# Accomplishments

**2.7 trillion** gallons of water saved since 2006!



WaterSense partners helped...



...**consumers**  
**save**

**\$63.8 billion**  
in water and energy bills



# *The America's Water Infrastructure Act of 2018*

- Formally authorized the WaterSense program
- Directed EPA to:
  - Enhance awareness of the label
  - Preserve the integrity of the WaterSense label
- Defined the scope of products and systems that could be included in the program
- Provided direction on the frequency and process for revision of product specifications
- Directed WaterSense to institute a comprehensive review of products specifications developed before 2012





# WaterSense Outdoors



# Professional Certification Programs

- In 2006, WaterSense released three specifications for professional certification programs covering:
  - Irrigation system designers
  - Irrigation system auditors
  - Irrigation system installation and maintenance professionals



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

# Professional Certification Programs

- Programs range from local to national:
  - Auditor: 6
    - (plus 13 that have adopted QWEL)
  - Installation and maintenance: 1
  - Design: 1
- Over 2,800 irrigation professionals certified by a WaterSense labeled program

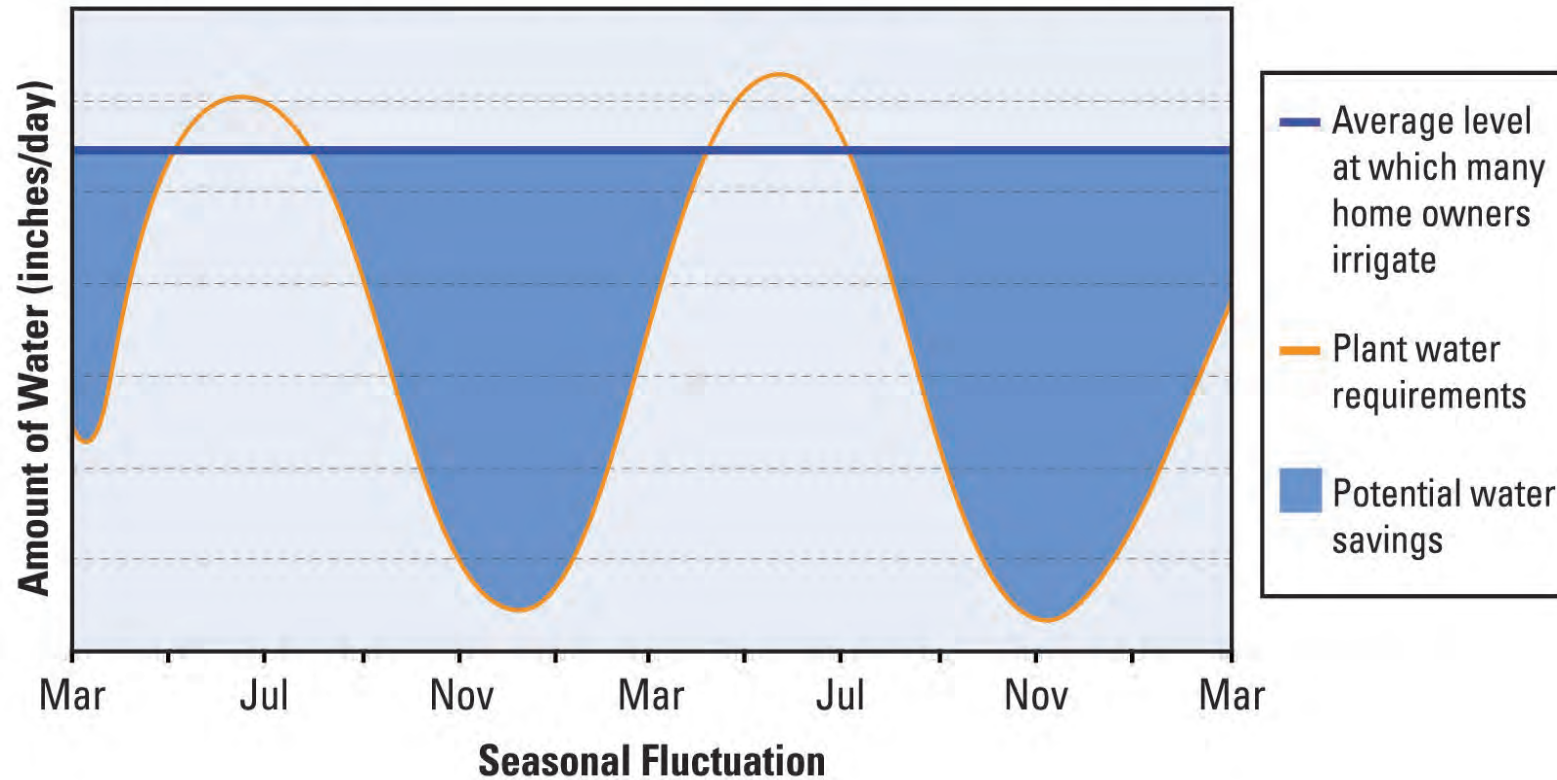


[www.epa.gov/watersense/find-pro](http://www.epa.gov/watersense/find-pro)



# Irrigation Control Technologies

**Typical Irrigation Levels and Plant Water Needs**



**Potential Water Savings From Adjusting Irrigation Scheduling Based on Landscape Water Needs**

# Weather-Based Irrigation Controllers

- Weather-based irrigation controllers
  - Use local weather and landscape conditions to tailor watering schedules to actual conditions on the site, instead of irrigating using a controller with a clock and a preset schedule
  - Specification released in 2011
  - To date, there are approximately 800 labeled models (30 brands)
  - ~35 water providers have indicated to WaterSense they provide rebates to these products
- EPA is currently reviewing this specification to determine if it should be revised



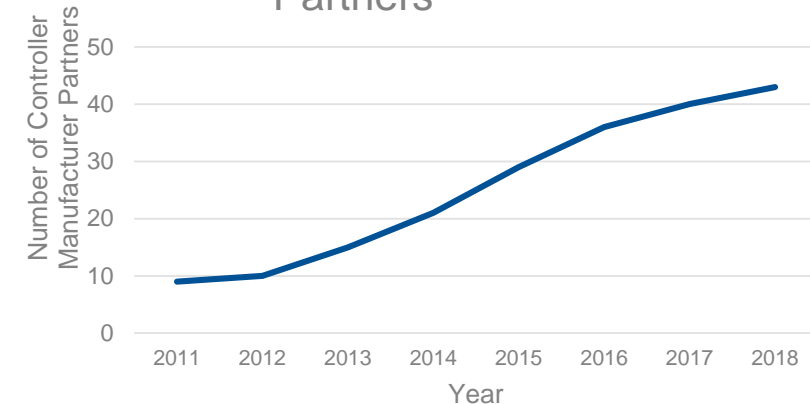
Image courtesy of Rachio



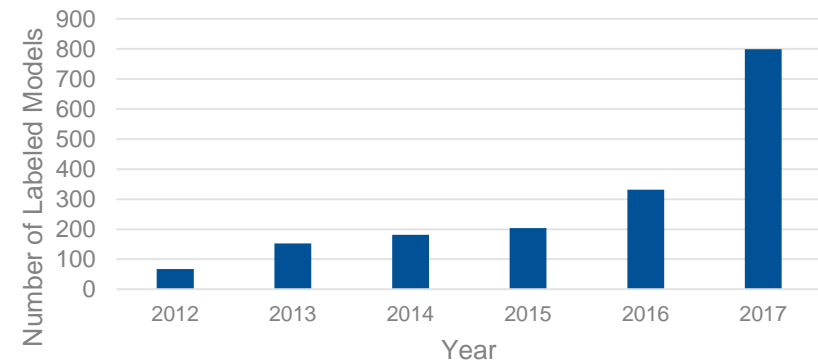
# Weather-Based Irrigation Controllers

- Considerations for specification revision
  - Market
    - Significant increase in number of brands and number of models
    - Market shift to app-based products
  - Test method and performance thresholds
    - Should the test differentiate products that incorporate predicted rainfall?
    - Must balance performance with cost and market uptake
- Are supplemental capability requirements still appropriate?

Number of Controller Manufacturer Partners



Number of Labeled Controller Models



# Soil Moisture-Based Controllers

- Soil Moisture-Based Control Technologies
  - Conducted research and worked with manufacturers to identify test protocols from 2007 to 2013
  - Issued a Notice of Intent (NOI) in May 2013
  - Working with ASABE X633 committee on a test method
    - Method tests sensors in a box of soil with a known depletion
    - Two soil types, two salinities, three depletions
  - Performance testing at the University of Florida projected to be complete in the summer of 2019
  - EPA is aiming to released a draft specification in late 2019



Image courtesy of Hunter Industries, Inc.



# Landscape Irrigation Sprinklers

- Spray Sprinkler Bodies
  - Specification released in 2017
  - WaterSense labeled spray sprinkler bodies include integral pressure regulation, which can reduce water waste by providing a constant flow at the sprinkler nozzle
  - To date, there are approximately 100 labeled models (5 brands)
  - ~10 water providers have indicated to WaterSense they provide rebates to these products
- Vermont adopted WaterSense labeled spray sprinkler bodies into regulation in 2018 (effective 2020)
- A proposed regulation in California references the WaterSense specification as the basis for its spray sprinkler body requirements



# Additional Outdoor Strategies



**It's Spring!**  
Time to Spruce Up Your Sprinkler System in Four Simple Steps

**INSPECT**  
sprinkler heads. A broken one can waste **25,000 gallons** of water in six months!

**CONNECT**  
hoses and pipes well. A leak as small as the tip of a pen can waste **6,300 gallons** of water per month!

**DIRECT**  
spray on landscapes, not pavement.

**SELECT**  
a WaterSense® labeled irrigation controller and water smarter.

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

**STEP 1** Location and Area   **STEP 2** Plants and Irrigation   **STEP 3** The Results

Fill out the chart below with all the appropriate information to calculate your landscape's water needs.

Zone	Area (sq. ft.)	Plant Type / Landscape Feature	Water Demand	Irrigation Type	Impact on Water Use	Required Water (gal/month)
1	10000	Nonvegetated Softscape	NA	NA		0
2	10000	Permeable Hardscape	NA	NA		0
3	10000	Turfgrass	Low	Rotor	●●●●●●●●	35208
4	10000	Groundcover	Low	Drip (Standard)	●●●	11736
5	10000	Trees	NA	No Irrigation		0
6						
<b>Total: 50000</b>						
+ add zone						

**0**  
Remaining Area (sq. ft.)

**143,764**  
Water Allowance (gal/month)

**46,944**  
Total Water Requirement for the Site (gal/month)

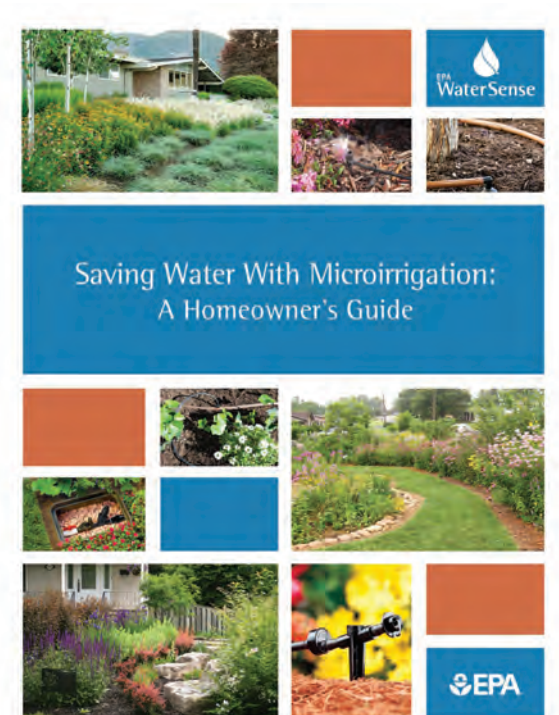
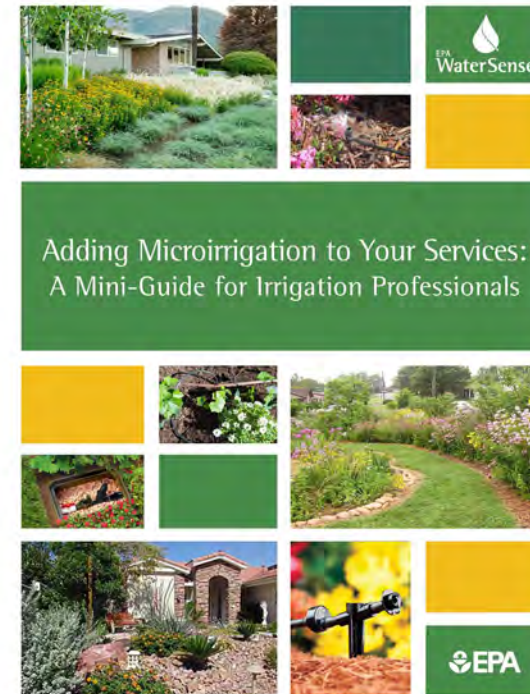
**96,820**  
Below Allowance (gal/month)

NEXT STEP >



# Microirrigation Guides

- Published in May 2018
  - Adding Microirrigation to Your Services: A Mini-Guide for Irrigation Professionals*
  - Saving Water With Microirrigation: A Homeowner's Guide*
- Both guides explain microirrigation, where it is best used, and the benefits
- The professional's version includes tips on efficient design, installation, maintenance, and scheduling
- The homeowner version includes less technical content and provides tips for homeowners when speaking with contractors







# WaterSense Labeled Homes

# Specification History

- The WaterSense New Home Specification was first released in 2009 and then updated in 2012 and 2014
- In February 2018, EPA released a Notice of Intent to revise the requirements and certification of WaterSense labeled homes
- On April 18, 2019, EPA released a draft Version 2.0 specification and certification system for public comment
- WaterSense's goal is to make the specification more flexible and widely-applicable in the housing market today



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

# Current Requirements for WaterSense Labeled Homes





# Challenges With Current Program Technical Structure

- Lack of flexibility
- Regional variation
- Variable value proposition
- Lack of a specific designation for WaterSense training
- Inconsistent accessibility/high barrier of entry
- Inability for additional providers to participate or administer the program



# Objectives for Version 2.0

- Provide flexibility in the technical requirements
- Maintain baseline quality performance
- Streamline certification process/encourage broader participation
- Quantify savings and demonstrate value
- Accommodate regional variation
- Improve collaboration with existing green building certification programs

# Summary of Revised Specification

## Version 2.0

- Requires that homes meet a minimum water-efficiency standard (via a mandatory checklist)
- Requires that homes meet an efficiency requirement (set at 30 percent more water-efficient than a home built using typical construction practices to national level codes, standards, and common landscape practices)
- EPA will recognize credible certification programs (or Home Certification Organizations) that have valid approaches to demonstrate compliance with the water efficiency requirements above
- Outdoors
  - No landscape or irrigation requirements in the mandatory checklist
  - A technical evaluation will be used to determine the “efficient” home’s water use compared to that of a “standard” home



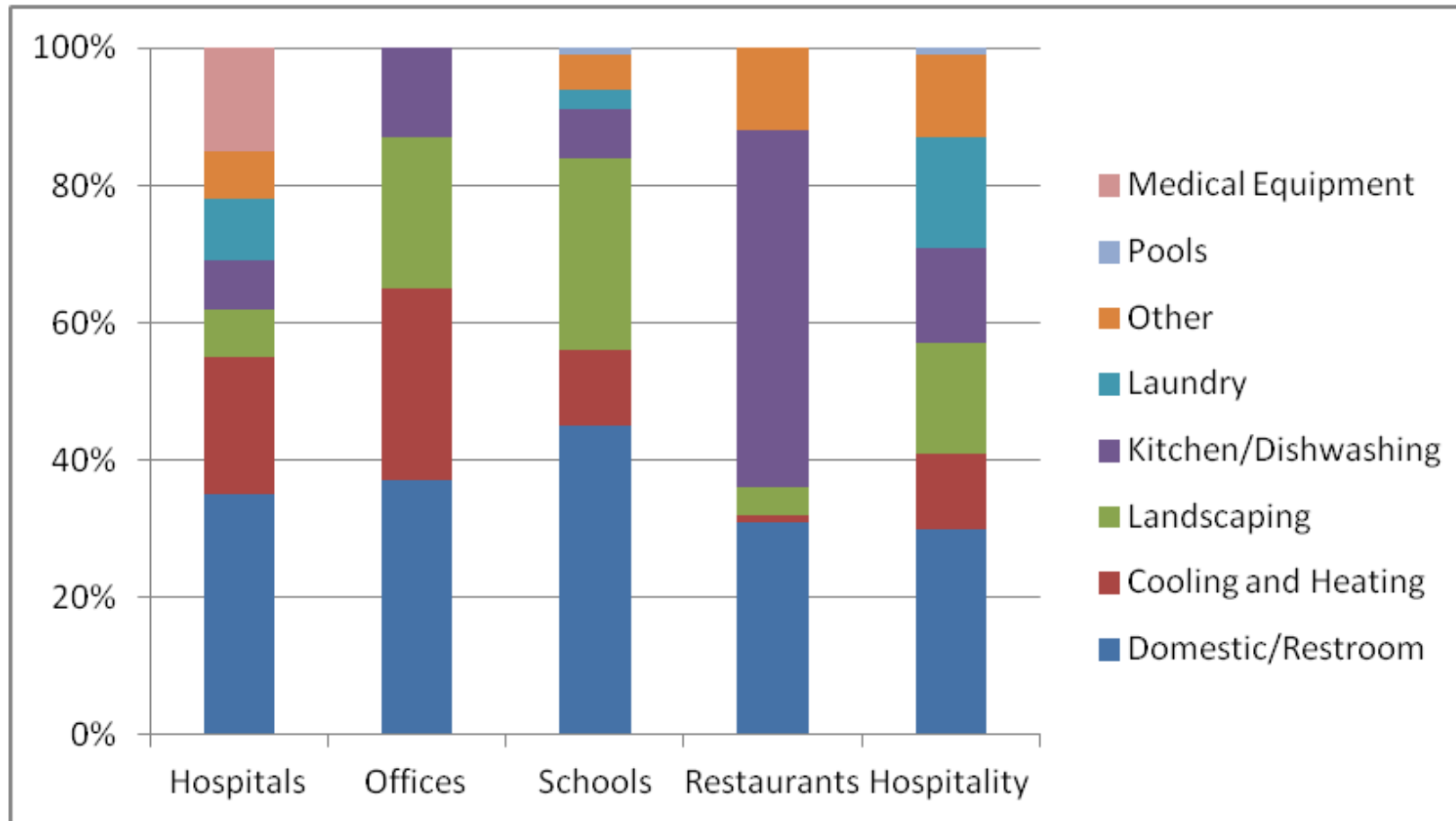
# Timeline for Labeled Homes Program Revision





# Commercial Water Efficiency

# Water Use Profiles of Commercial Facilities



Created by analyzing data from: New Mexico Office of the State Engineer, American Water Works Association (AWWA), AWWA Research Foundation, and East Bay Municipal Utility District



# Why Look at Outdoor Water Use?

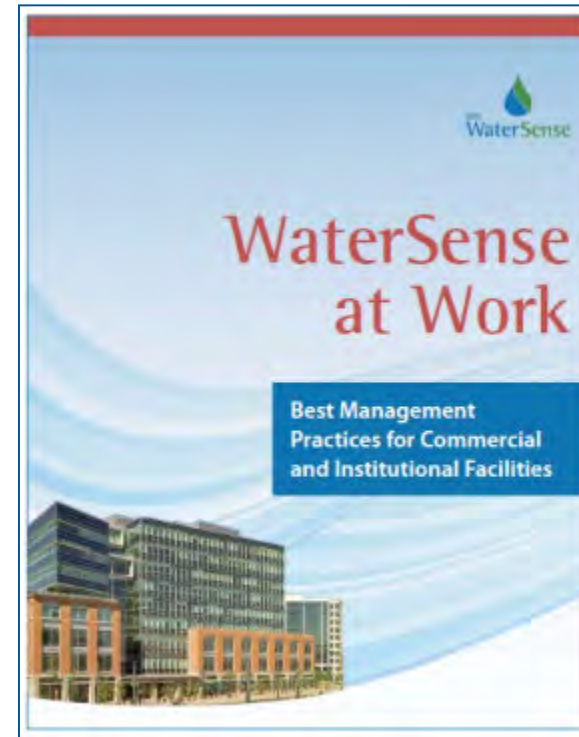
- Up to 30 percent of commercial water can be used outdoors
  - Amount dictated by size and design of landscape, supplemental irrigation needed, and management of pools
- Outdoor water use is a primary driver of “peak” use
  - Makes an appealing target for utilities reducing demand
  - Can be the first use to be restricted during droughts or other shortages
- Outdoor water use is visible and easy to police
  - It is easier to enforce outdoor watering restrictions than it is to regulate the interior of a building
- Extra volume can be much more expensive
  - Higher volume of water use, higher water rate tier



# Water Efficiency Best Management Practices

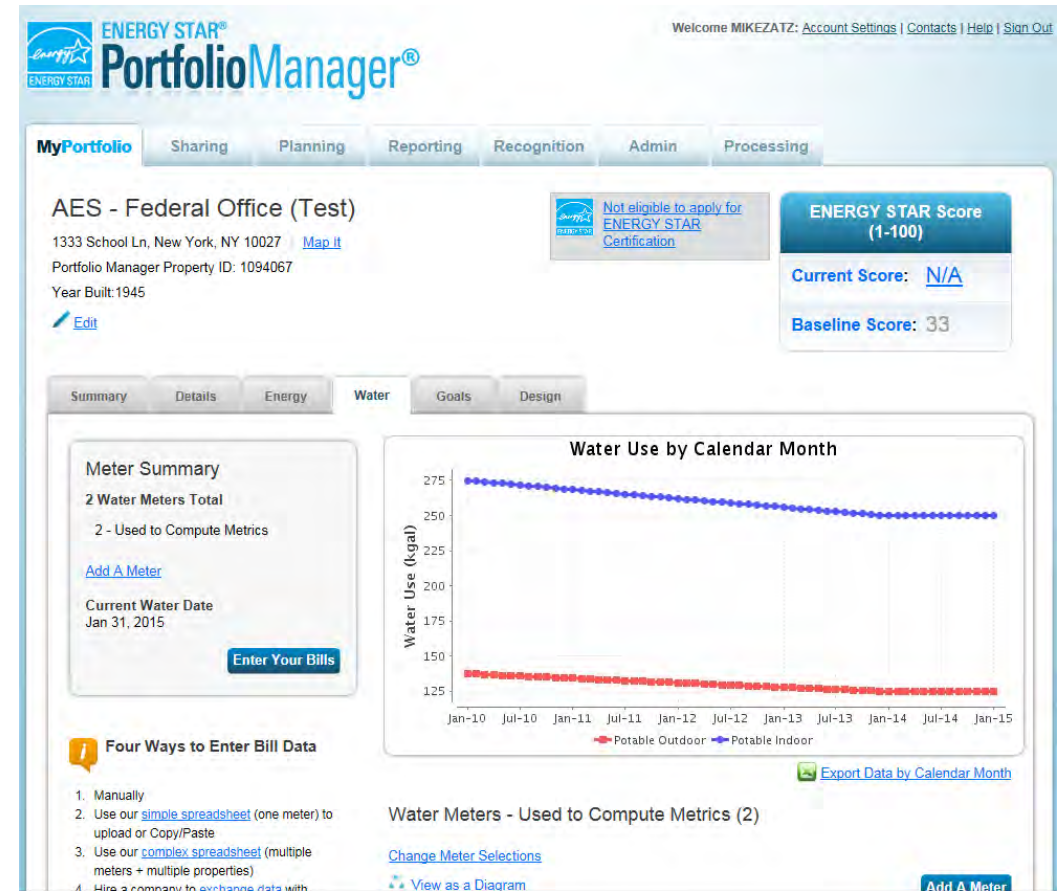
*WaterSense at Work* is an online guide facilities can use to manage water use:

- 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 sources of water



# EPA Water Score

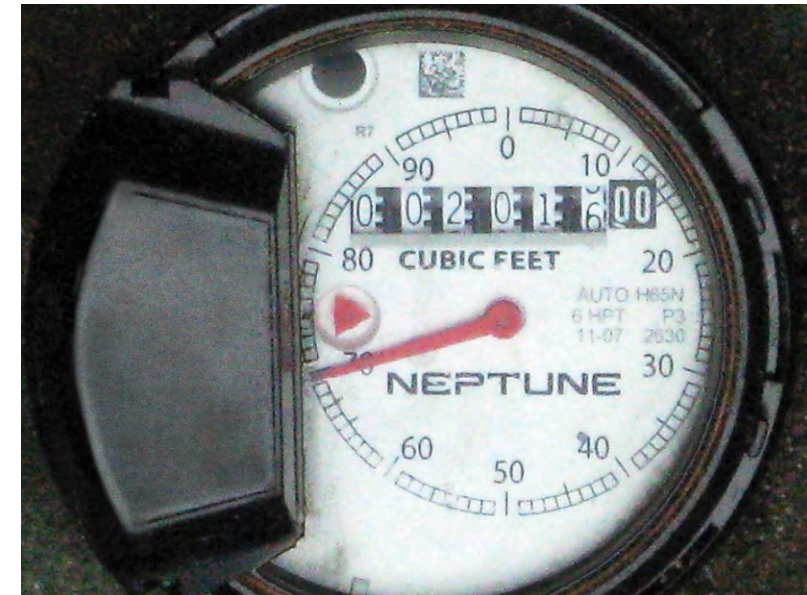
- EPA released a Water Score for multifamily properties in 2017
  - Generated by ENERGY STAR Portfolio Manager and supported by WaterSense
  - 1-100 rating of how a building uses water compared to similar properties nationwide
- Water Score multifamily resource guides
  - Bathrooms
  - Residential kitchen and laundries
  - Landscapes and irrigation
  - Mechanical systems
- Multifamily water assessment worksheets





# Tools, Webinars, and Case Studies

- C&I water assessment tools
  - Simple water assessment checklist for many commercial and institutional facility types
  - Water assessment worksheets and tools for many C&I facility types
  - Water assessment tools specifically for hotels
- Webinars
  - Series of webinars co-hosted by ENERGY STAR and WaterSense on a variety of C&I topics
- Case studies
  - Case studies for facilities that have implemented water efficiency best practices
  - Universities, hotels, restaurants, office buildings, laboratories



# Contact Us



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