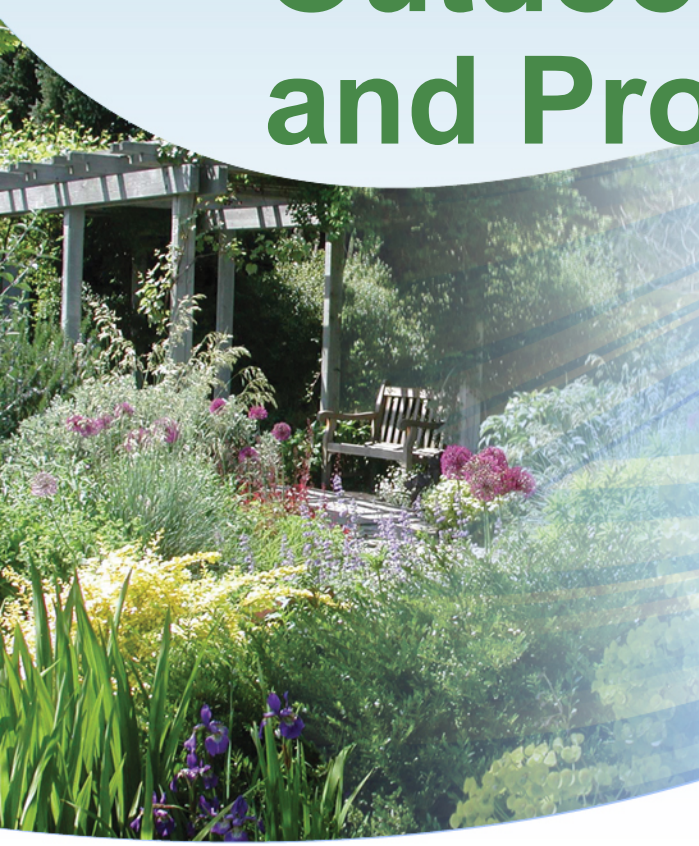
WaterSense®

Outdoor Water Efficiency and Program Overview



Joanna Kind, Senior Environmental Scientist
Eastern Research Group, Inc. (ERG)

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

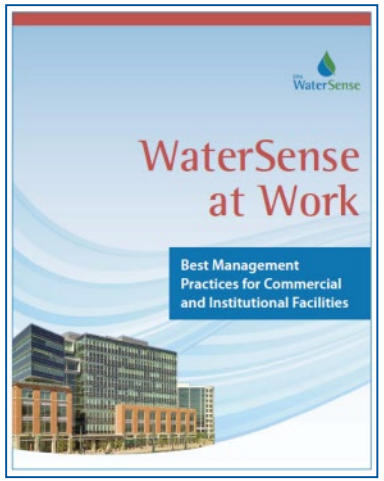
The WaterSense Vision

- 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

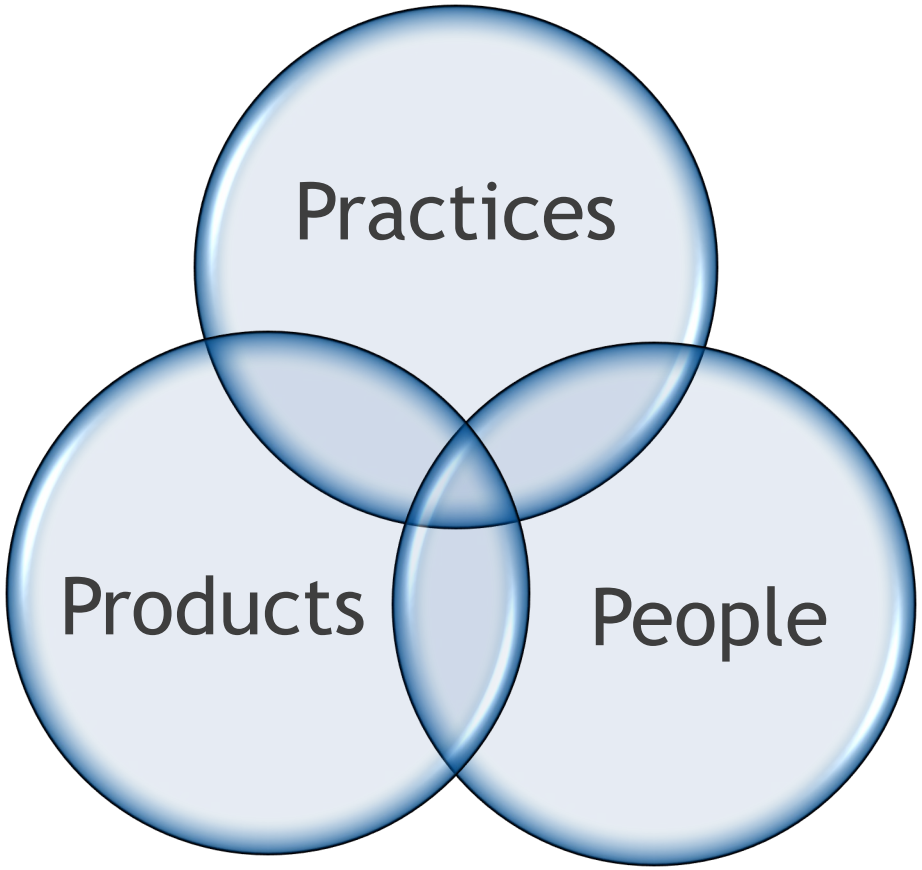
How will we achieve it?

- 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

Tank-Type Toilets
Labeled since 2007
3,400 labeled models

Flushing Urinals
Labeled since 2009
700 labeled models

Showerheads
Labeled since 2010
8,300 labeled models

Weather-Based Irrigation Controllers
Labeled since 2011
800 labeled models

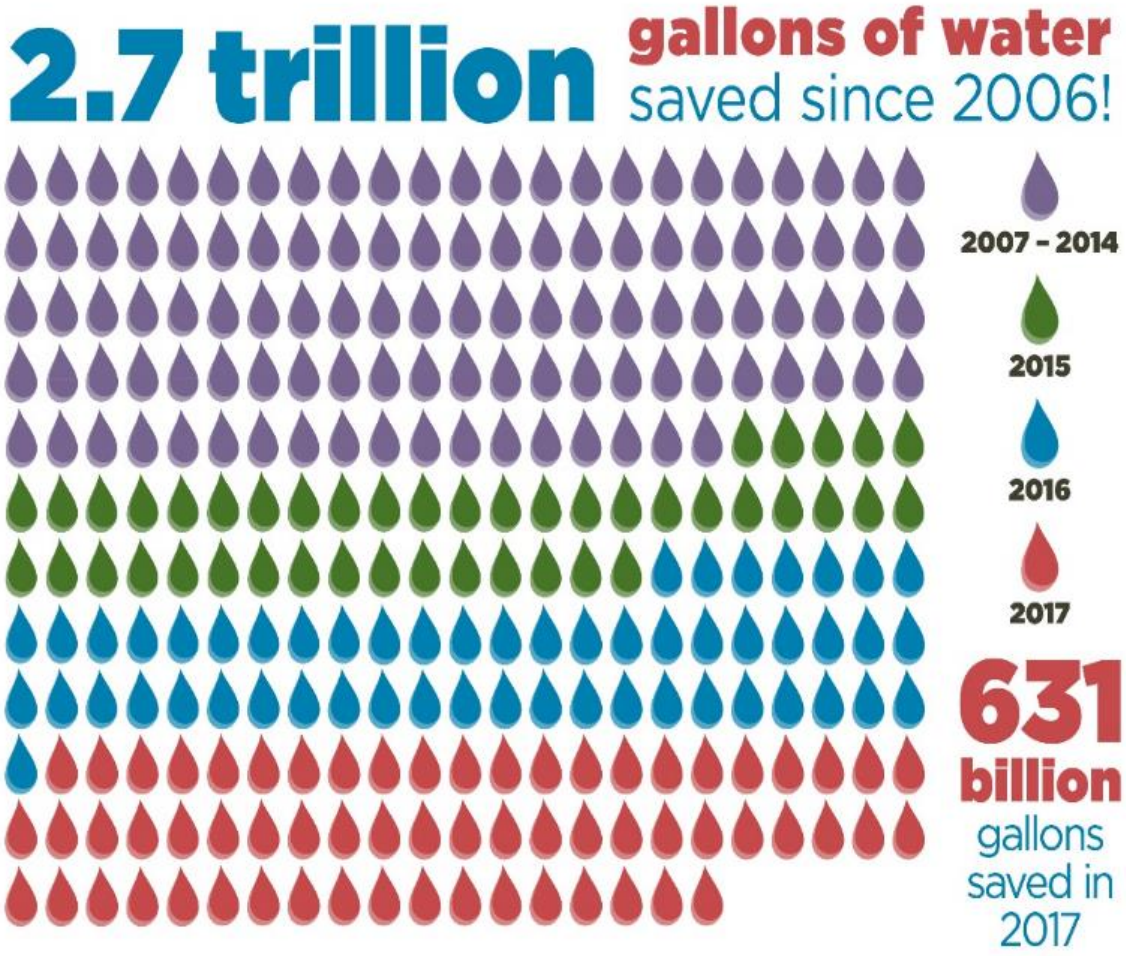
Flushometer-Valve Toilets
Labeled since 2015
1,100 labeled models

Pre-Rinse Spray Valves
(Recently Sunset)
Labeled from 2013 to 2018
30 previously labeled models

Spray Sprinkler Bodies
Labeled since 2017
100 labeled models

*Data as of April 2019

Accomplishments



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

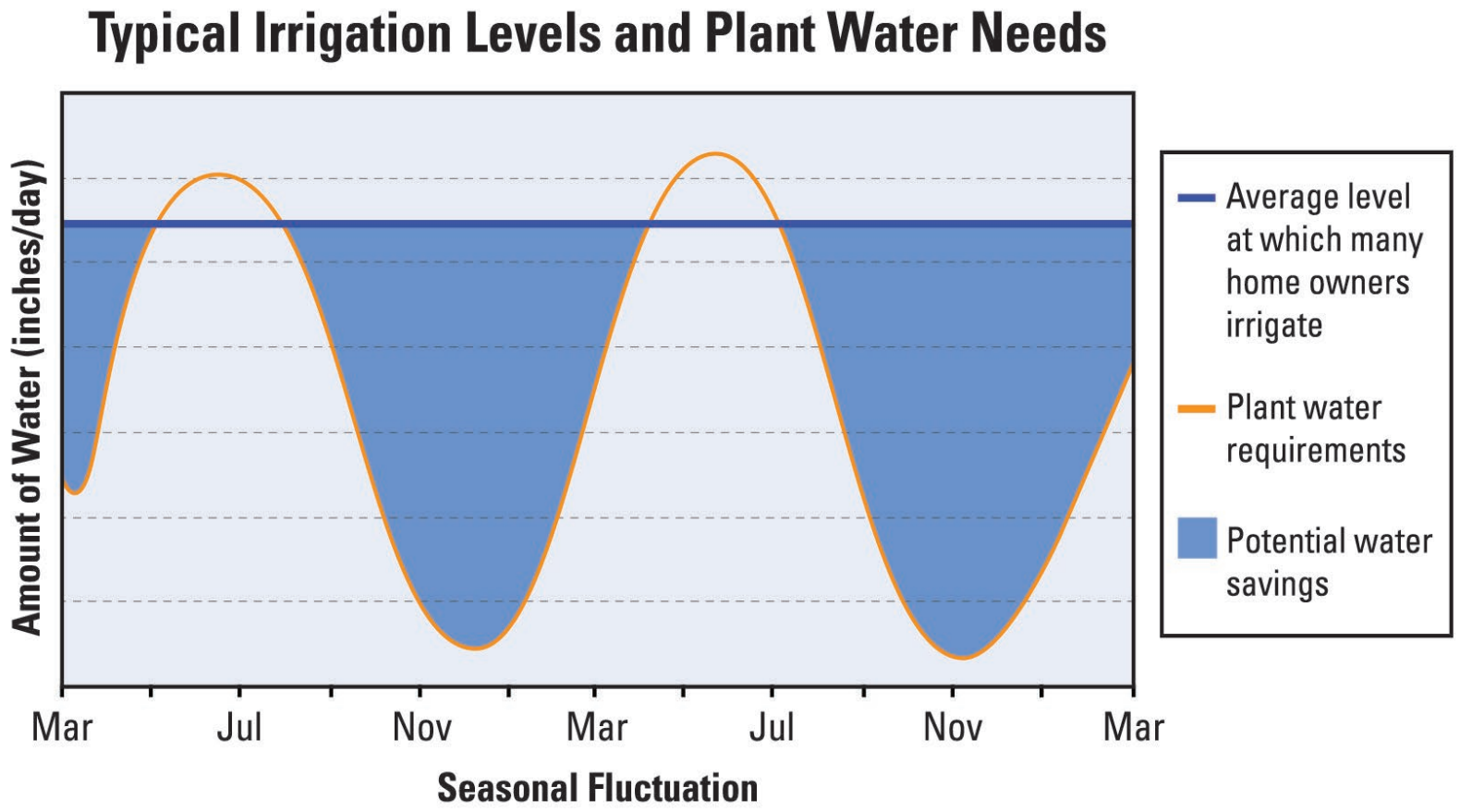
www.epa.gov/watersense/professional-certification

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

Irrigation Control Technologies



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

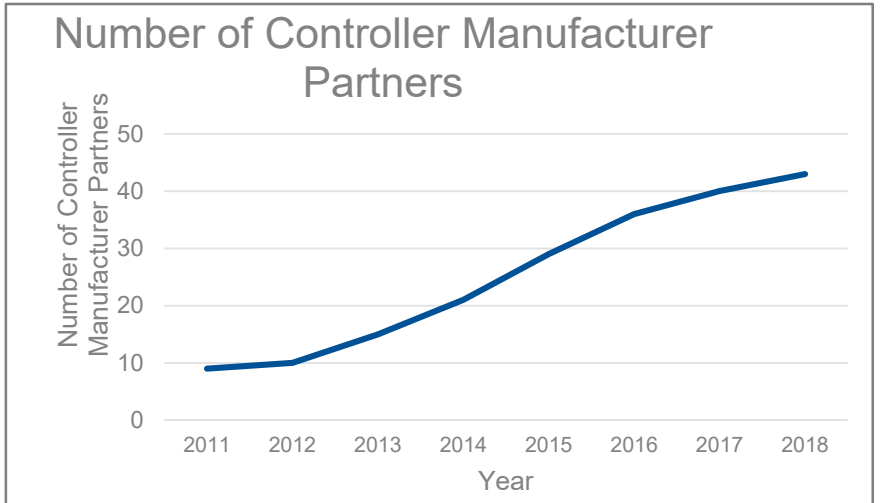
Weather-Based Irrigation Controllers

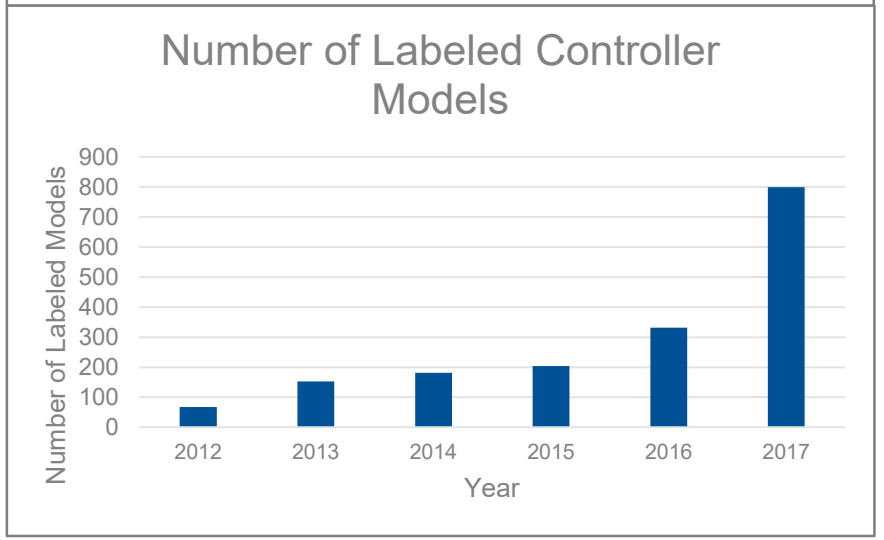
- Weather-based irrigation controllers
  - Use local weather and landscape conditions to tailor watering schedules to actual conditions on the site, instead of irrigating using a controller with a clock and a preset schedule
  - Specification released in 2011
  - To date, there are approximately 800 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?





Soil Moisture-Based Controllers

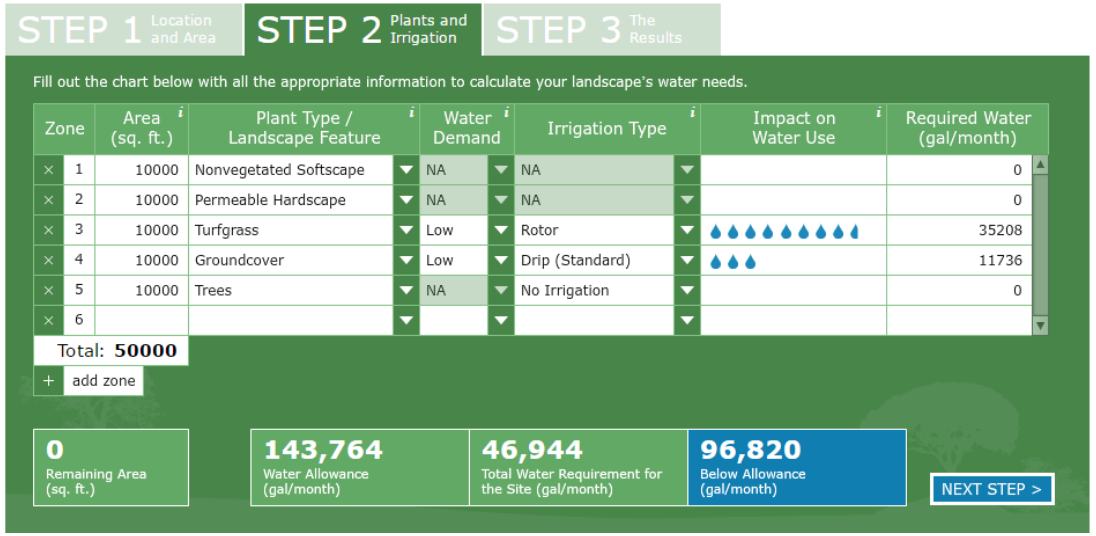
- Soil Moisture-Based Control Technologies
  - Conducted research and worked with manufacturers to identify test protocols from 2007 to 2013
  - Issued a Notice of Intent (NOI) in May 2013
  - Working with ASABE X633 committee on a test method
    - Method tests sensors in a box of soil with a known 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

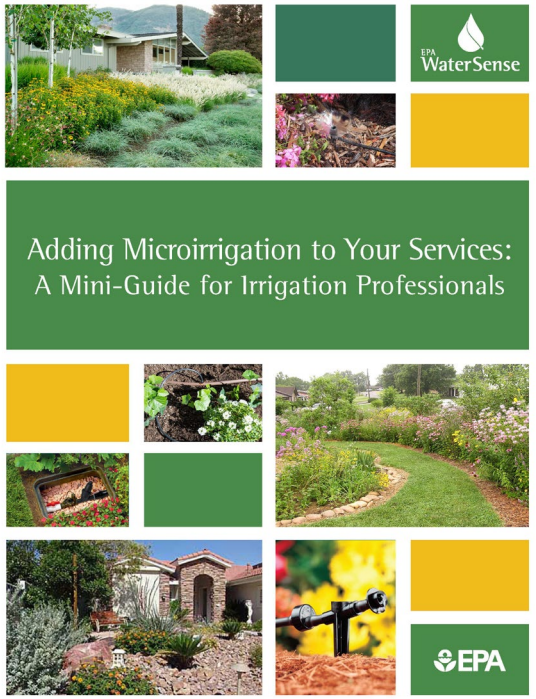
- Spray Sprinkler Bodies
  - Specification released in 2017
  - WaterSense labeled spray sprinkler bodies include integral pressure regulation, which can reduce water waste by providing a constant flow at the sprinkler nozzle
  - To date, there are approximately 100 labeled models (5 brands)
  - ~10 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

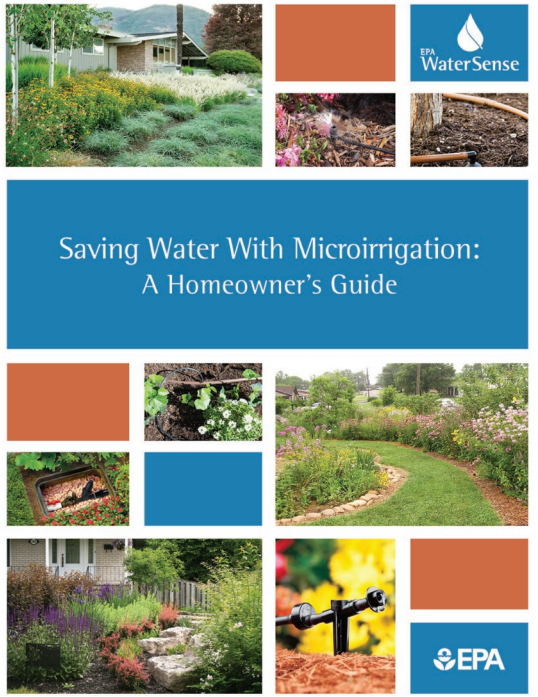
Additional Outdoor Strategies



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

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

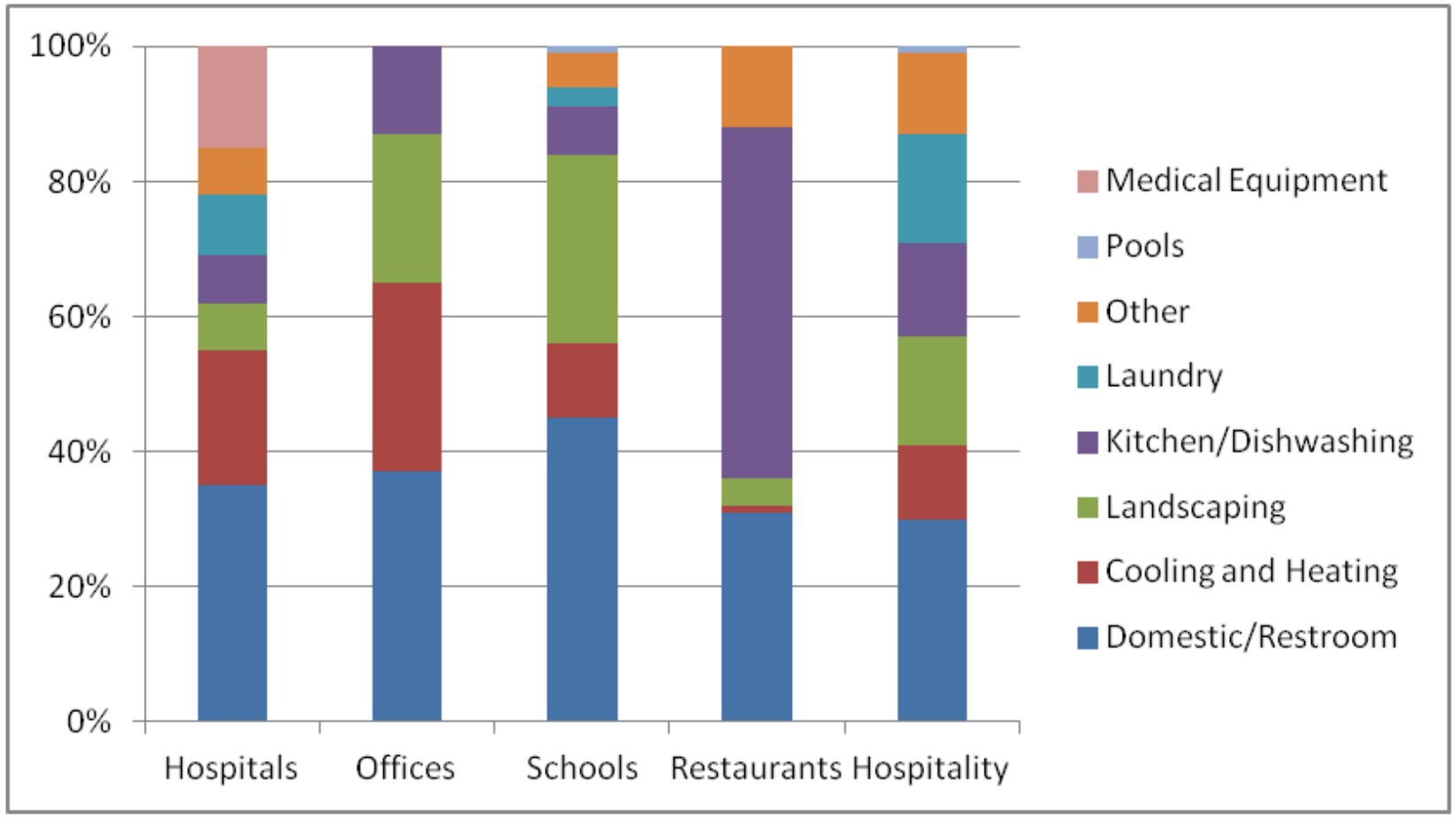
Version 2.0

- 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

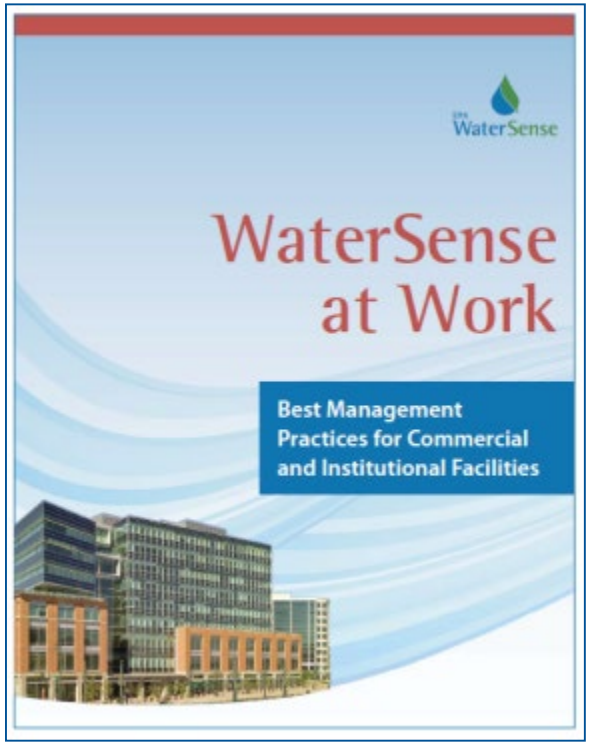
Why Look at Outdoor Water Use?

- 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



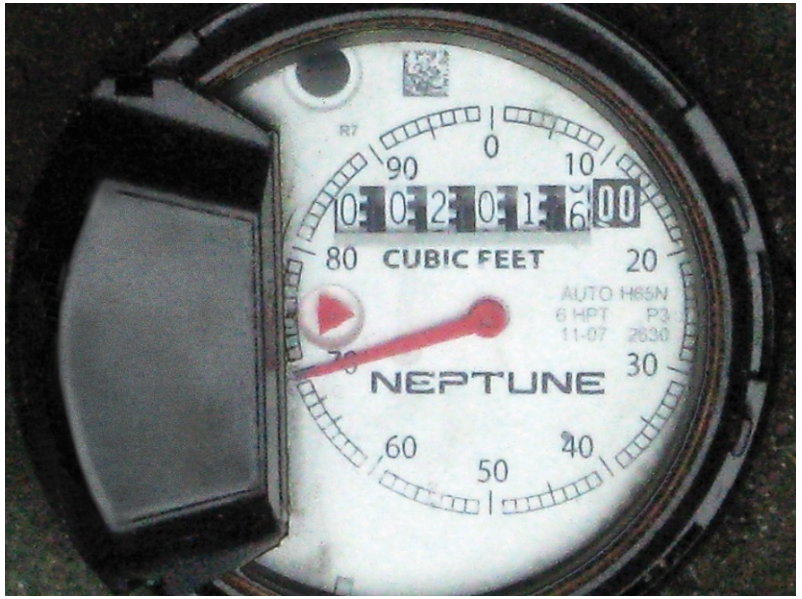
EPA Water Score

- 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

www.epa.gov/watersense/water-score-multifamily-housing

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



www.epa.gov/watersense/tools-ci-facilities

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