



WaterSense® Product Labeling Program



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EPA WaterSense
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Why WaterSense?

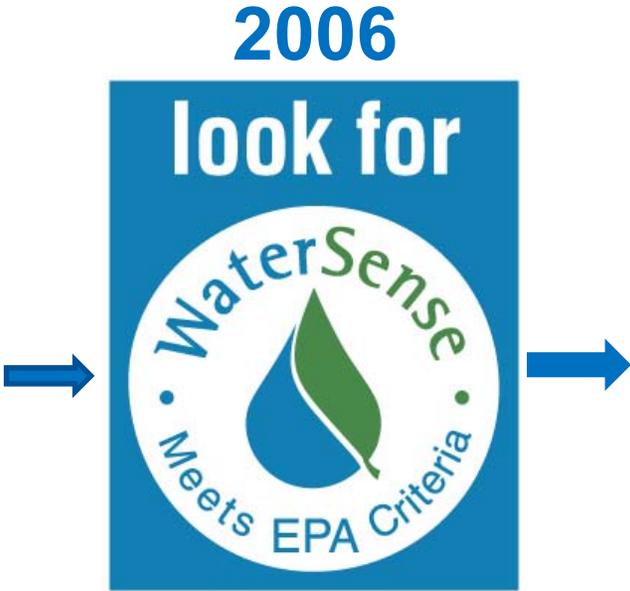
Water shortages expected in 36 states

Communities face major infrastructure investments

Consumers challenged by rising utility bills

Much of water used outdoors is wasted

No ENERGY STAR-like program for water



Identify high-performing technology

Promote water efficient behavior/action

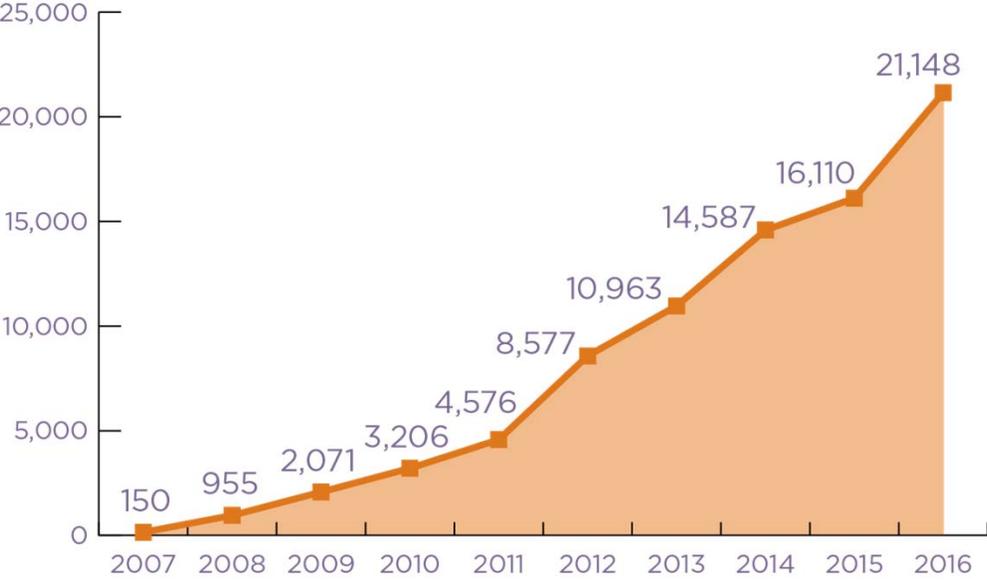
Help consumers save money

Reduce need to expand infrastructure capacity

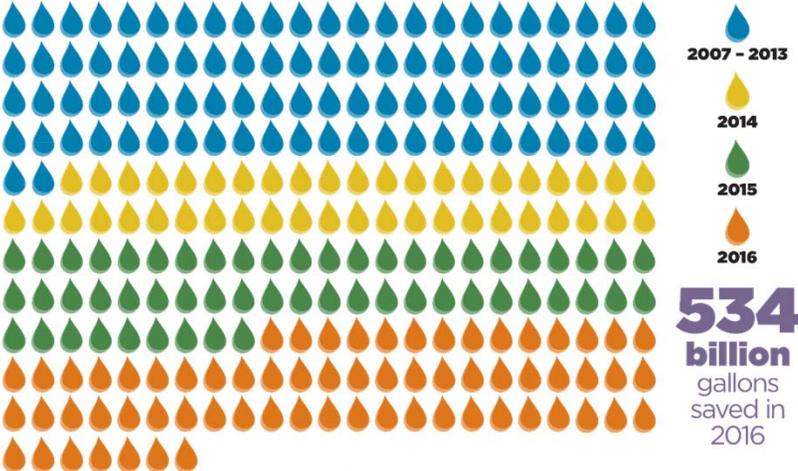
Save water for critical needs

Savings (through 2016)...

Total WaterSense Labeled Product Models



2.1 trillion gallons of water saved since 2006!



That's **more than** the amount of water used by **all** U.S. households **for 75 days!**

& more savings

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

284 billion

kilowatt hours,

enough to supply a year's worth of power to more than



WaterSense partners helped...



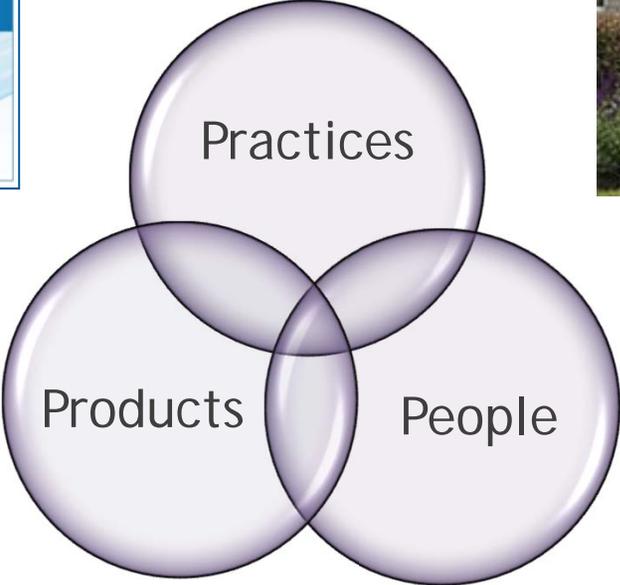
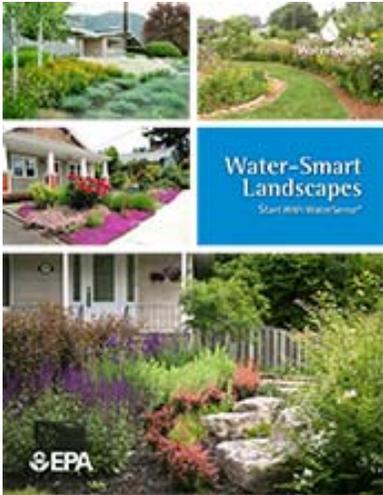
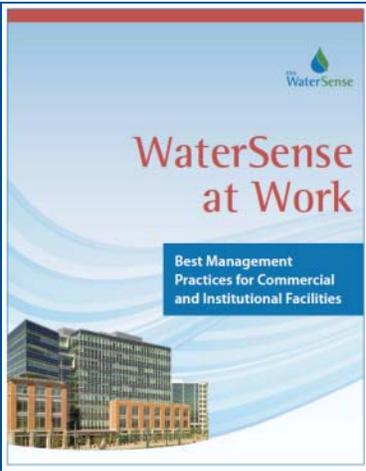
...**consumers**
save

\$43.6 billion

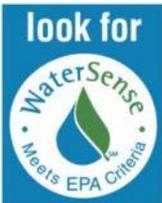
in water and energy bills

It's Not Just Products...

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



Fixtures and technologies save water

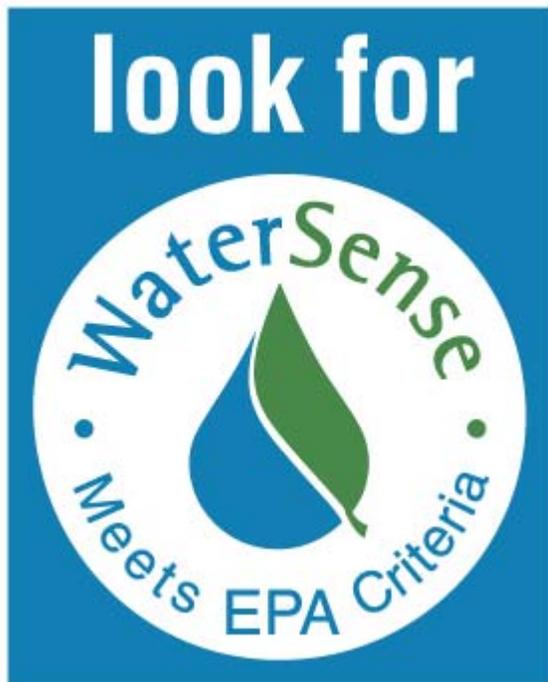


Partners reach users to change behavior



WaterSense Product Evaluation Factors

WaterSense uses the following factors in determining which products to label



Products must:

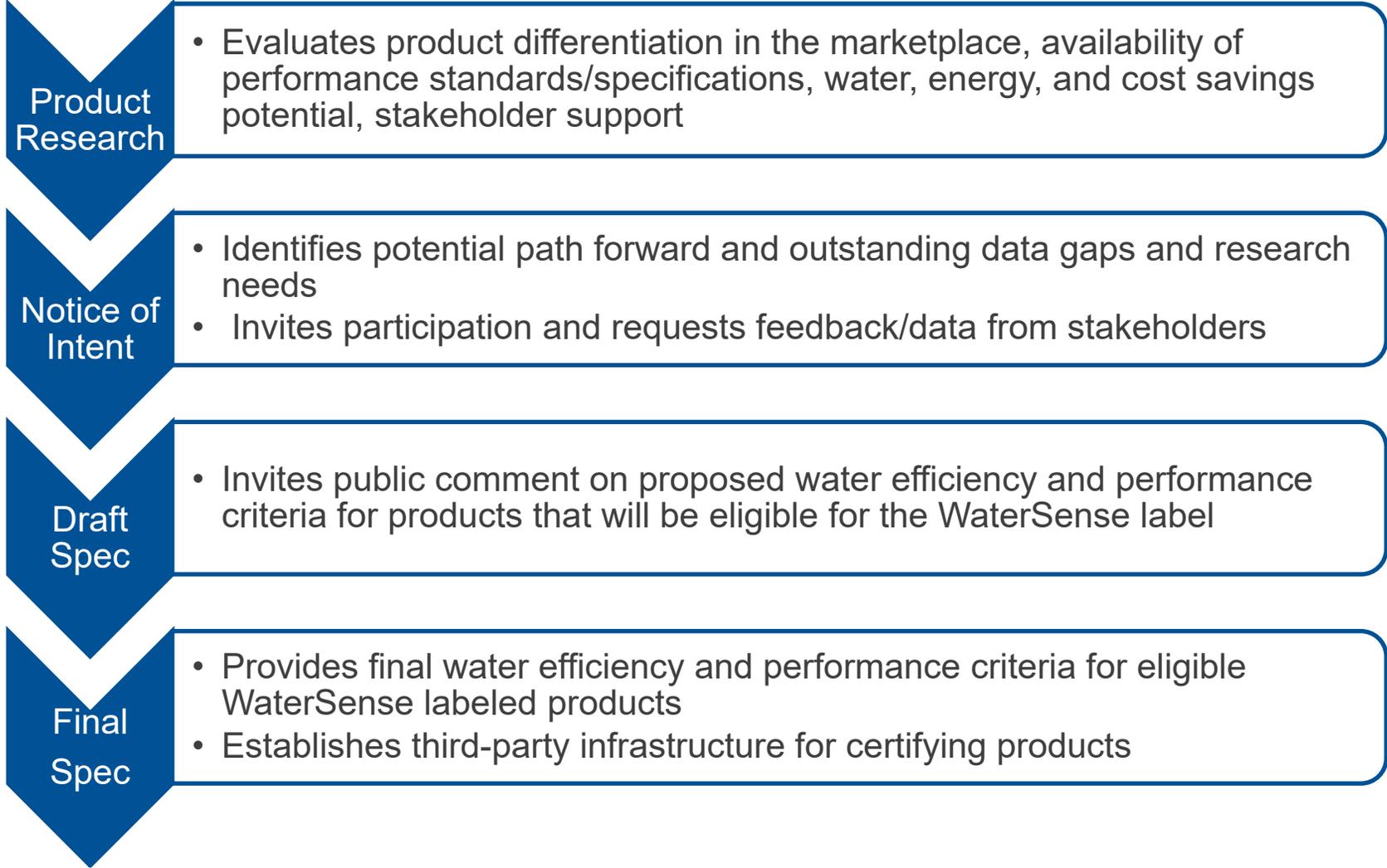
- Offer equivalent or superior performance
- Be about 20 percent more water-efficient than conventional models
- Realize water savings on a national level
- Provide measurable results
- Achieve water efficiency through several technology options
- Be effectively differentiated by the WaterSense label

What's Special About WaterSense?



- A label with integrity
 - Third-parties independently certify that products and homes meet EPA criteria
 - Backed by the credibility of EPA
- Simple to understand
 - Label tells consumer product is efficient
 - Manufacturers can compete on degree of efficiency or other features
- 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
 - EPA, manufacturers, retailers, and other partners help market/incentivize purchase of labeled products

Specification Development Process



Working with Standards Organizations



- Where feasible, EPA engages with existing standards committees as early in the process as possible
 - ASME/CSA – plumbing fixtures and fittings
 - ASABE – soil moisture sensors, weather-based irrigation controllers
 - ICC – landscape sprinklers
- Balanced standards committees give EPA access to input from testing laboratories, certifying bodies, manufacturers, water efficiency experts, utility partners, NGOs and other stakeholders
- EPA leverages resources of standards committees to:
 - Identify and evaluate appropriate performance measures (based on user needs)
 - Develop test methods for the performance measures that can be reliably evaluated in a laboratory
 - Conduct round robin testing to ensure test method repeatability
 - Get buy in of methods and requirements among manufacturer and certification community before publishing a draft specification

Defining Research Needs for Product Specifications



- Critical questions
 - What performance attributes are important?
 - Are there defined evaluation methods for the attributes of importance?
 - Do the evaluation methods produce consistent and reproducible results within an independent laboratory community?
 - Would greater water efficiency impact building systems or health and safety?
- Data gaps exist where these questions cannot be answered
- EPA works with stakeholders to fill data gaps through industry and utility sponsored research

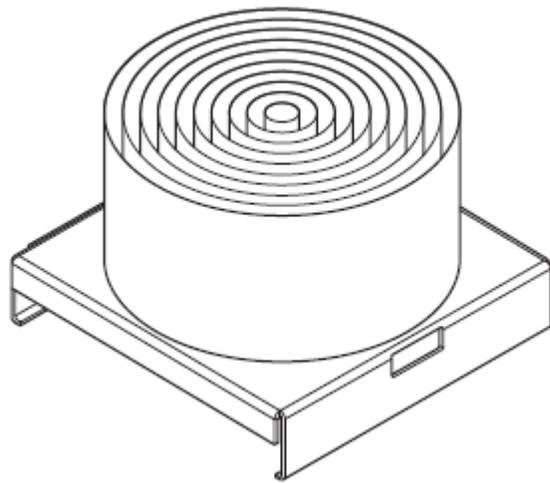
Example: Showerheads



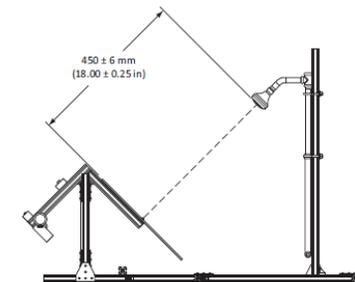
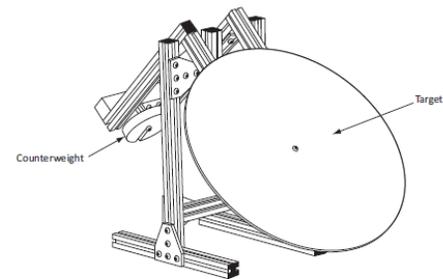
- What performance attributes are important to the end user?
 - Pressure compensation
 - Spray pattern/distribution
 - Spray force
- Are there defined evaluation methods for the attributes of importance?
 - WaterSense worked with the ASME Joint Harmonization Task Group to develop criteria and methods
 - Evaluation methods were correlated with user satisfaction
- Do the evaluation methods produce consistent and reproducible results?
 - Tested evaluation methods at multiple laboratories

Example: Showerheads

- Evaluation methods have since been adopted into the ASME A112.18.1/CSA B125.1 *Plumbing supply fittings* standard



Spray Coverage Test Apparatus



Spray Force Test Apparatus

Example: Showerheads

- Health and Safety Issues
 - WaterSense and ASME task force considered negative impacts of reducing flow rate on consumer satisfaction
 - Thermal shock and scalding identified as potential issues
- Collected data to determine extent of these issues and potential impact of lower flow rates
- Concluded that components such as water heaters and mixing valve design has a more significant impact on outlet water temperature
- Approach in Specification
 - Require product packaging to be marked with the minimum flow rate so that automatic-compensating mixing valves can be “matched” to flow rate.
 - Participated in efforts to harmonize the ASME/CSA standards and testing requirements for mixing valves and showerheads
 - Continue to educate consumers and program partners on the issue so consumers can make informed purchasing decisions.



WaterSense Product Certification

Independent third-party certification is the key to bringing labeled products to market and ensuring confidence in the WaterSense brand

- EPA established the *WaterSense Product Certification System* in March 2009 (revised in 2011)
- The system guides certification and labeling for all WaterSense labeled products and includes:
 - Eligibility and requirements for accreditation and product certifying bodies
 - Production inspection and testing requirements
 - Requirements for issuing the WaterSense label
 - Requirements for ongoing surveillance of labeled products
 - Procedures for handling label misuse

<https://www.epa.gov/watersense/certification-systems>

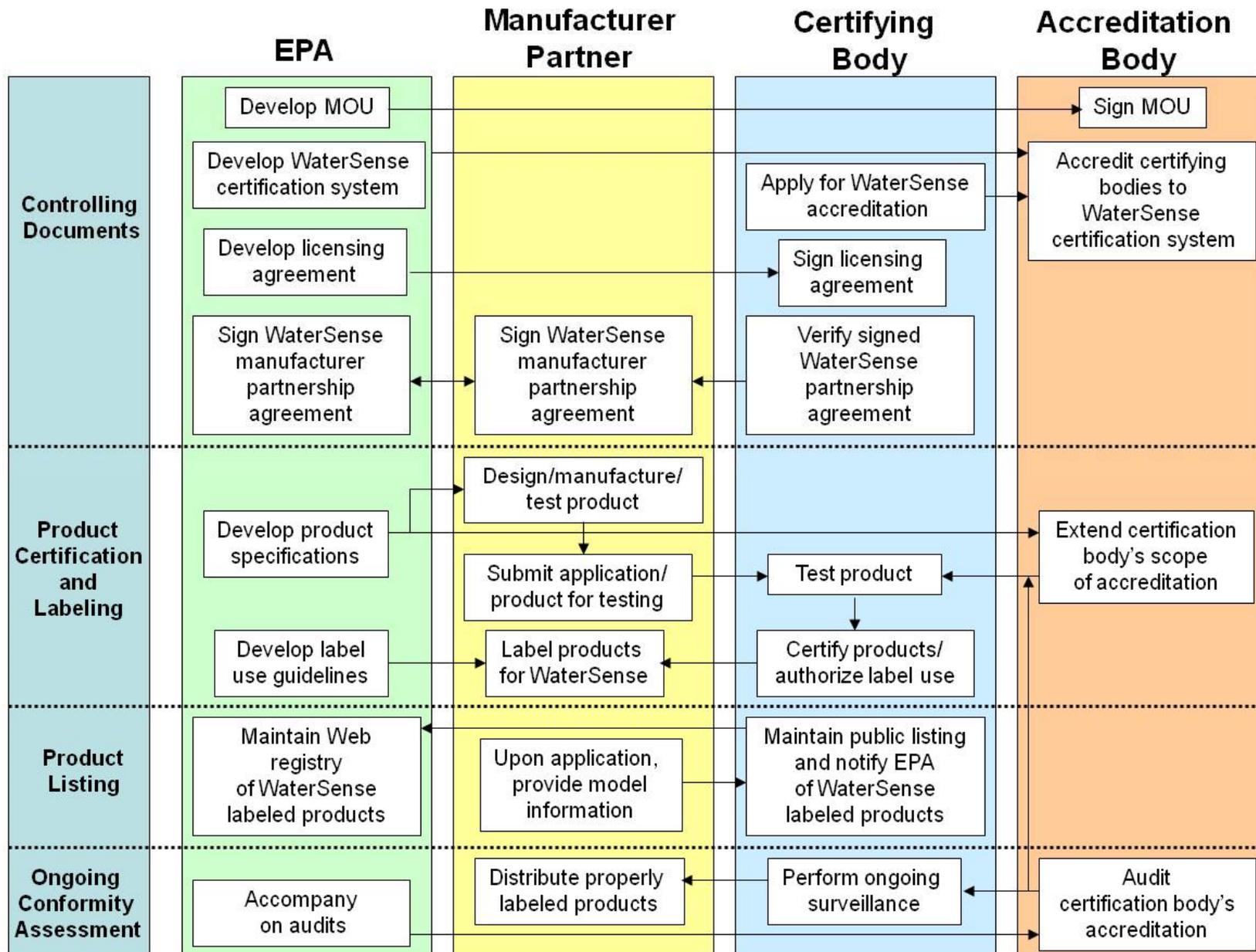


Benefits of Our Process

WaterSense relies on internationally recognized process and ISO/IEC standards and guidelines to establish its third-party certification infrastructure

- Focuses EPA resources on marketing and specification development
- EPA is in compliance with National Technology Transfer and Advancement Act (NTTAA)
- More rigorous, which is good from a marketing perspective
- Better policing of label and on-going surveillance of products
- Faster product approval times
- No limit on business relationships
- Increases consistency in product testing
- Instills confidence in WaterSense labeled products
- Reduces barriers to global trade

Product Certification Overview



Product Certification Overview

WaterSense Staffing

- Program total FTE 8
- Conformance management FTE (<.5)

Manufacturers

406 partners across **8** product categories, labeling **> 28,000** models

Accreditation Bodies (ABs): 3 Internationally recognized ABs

- A2LA
- ANSI
- IAS

Certifying Bodies (CBs): 7 Accredited and EPA licensed CBs

- CSA Group
- IAPMO R&T
- ICC Evaluation Service
- Intertek
- NSF International
- Truesdail Laboratories
- UL LLC

Certification Infrastructure

EPA WaterSense



- Roles and Responsibilities:
 - Develop and maintain WaterSense certification system requirements and specifications
 - Sign licensing agreements with CBs and MOU with ABs
 - Police label in marketplace and protect trademark
 - Market the label to consumers, utilities, designers

Certification Infrastructure

Manufacturers



- Roles and Responsibilities:
 - Design compliant products and submit them for testing and certification
 - Promote WaterSense labeled products in the marketplace
 - Abide by WaterSense logo and label use guidelines
 - Submit to ongoing product surveillance
- Credentials:
 - Sign a WaterSense partnership agreement
 - Contract with an accredited/licensed certifying body for certification services

Certification Infrastructure

Certifying Bodies

- Roles and Responsibilities:
 - Evaluate manufacturer's production process, test product conformance
 - Authorize the use of the WaterSense label to manufacturers of certified products
 - Maintain list of certified products and provide list to EPA
 - Conduct annual surveillance and product retesting
 - Police label use in the marketplace
- Credentials:
 - Operate product certification program in accordance with ISO/IEC Guide 65 and the WaterSense certification system
 - Accredited by an EPA approved accreditation body for each WaterSense product specification
 - Licensed by EPA to certify products



Certification Infrastructure

Accreditation Bodies



- Roles and Responsibilities:
 - Evaluate, accredit, and oversee certifying body capability and competence to certify products to the WaterSense certification system and specifications
- Credentials:
 - Operate accreditation program in accordance with ISO/IEC 17011 *General requirements for accreditation bodies accrediting conformity assessment bodies*
 - Offer accreditation services to ISO/IEC Guide 65
 - Peer evaluated and signatory to the International Accreditation Forum Multilateral Agreement for product certification
 - Approved by EPA and signatory to an MOU

Product Certification Process

Manufacturer partners with EPA and applies to CB for certification



CB conducts product evaluation (quality processes, production inspection, product testing) and certifies product



CB authorizes manufacturer to use the WaterSense label



CB notifies EPA of labeled products



EPA maintains online registry of labeled products



CB conducts ongoing conformity assessment (production inspection, label surveillance, product retesting)

WaterSense Labeled Products



Flushing Urinals



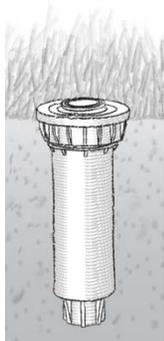
Showerheads



Lavatory Faucets



Irrigation Controllers



Spray Sprinkler Bodies



Tank-Type and Flushometer Valve Toilets



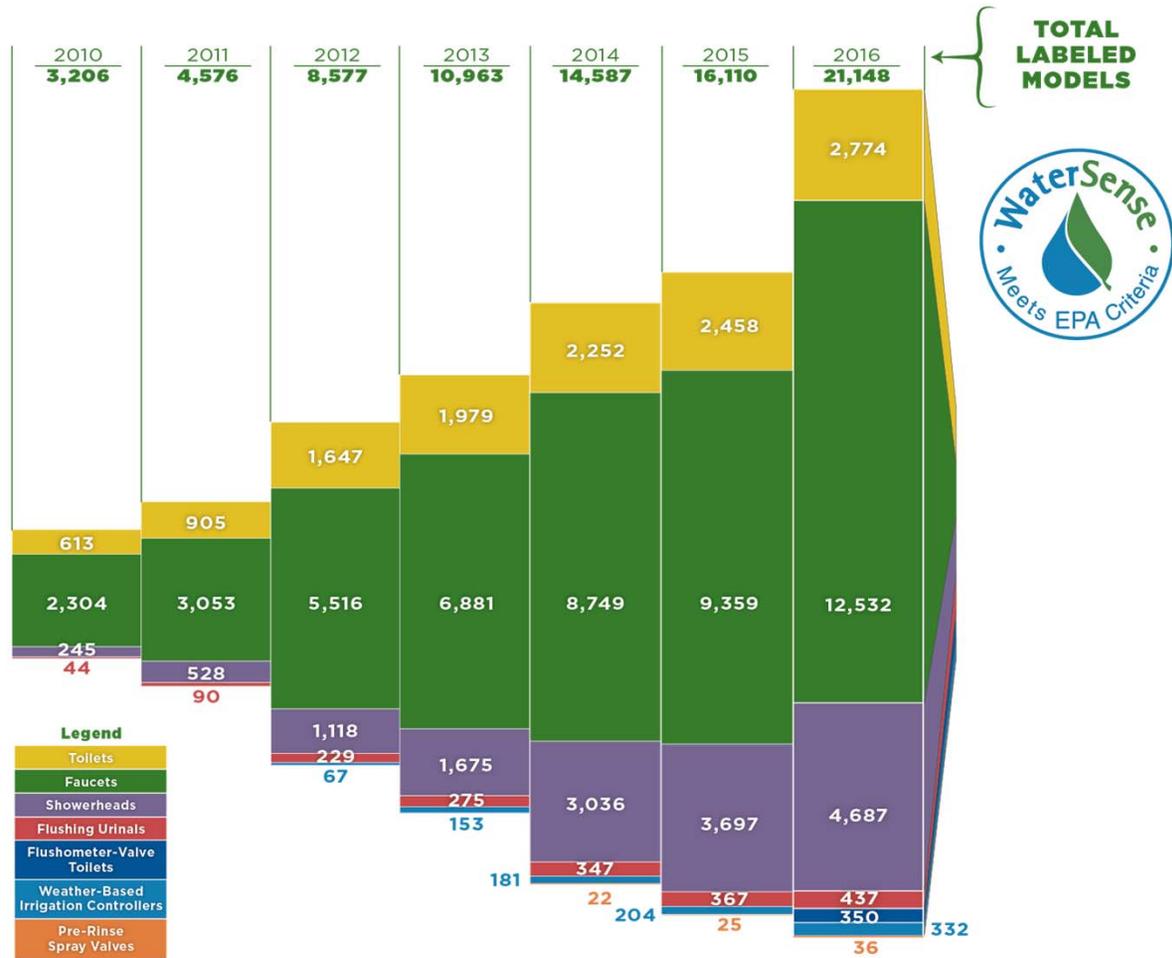
Pre-rinse Spray Valves

More than 28,000 product models have earned the label
Search tool at
epa.gov/watersense

Water factors are also included in many ENERGY STAR certified products

In the Marketplace

WaterSense Labeled Products



Manufacturers have reported more than 337 million products shipped through 2016

Acceptance of WaterSense



- The WaterSense label is recognized by other green programs.
 - Federal Energy Mgt Program (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 Supplement and WE-Stand
 - States and Municipalities (CA, TX, GA, CO, NY, Miami, etc)
 - Utilities (specify WaterSense labeled products for incentives)

External Evaluation

- EPA Inspector General conducted an evaluation of the program in 2016-17
 - Final report *EPA's Voluntary WaterSense Program Demonstrated Success* - released August 1, 2017
- Overall the findings were positive
 - Adequate controls for water and energy savings estimates
 - “WaterSense is a sound model for voluntary programs”
 - Estimates \$1,100 saved by consumers for every \$1 invested in the program
- Report and podcast available at:
<https://www.epa.gov/office-inspector-general/report-epas-voluntary-watersense-program-demonstrated-success>

WaterSense In the Future

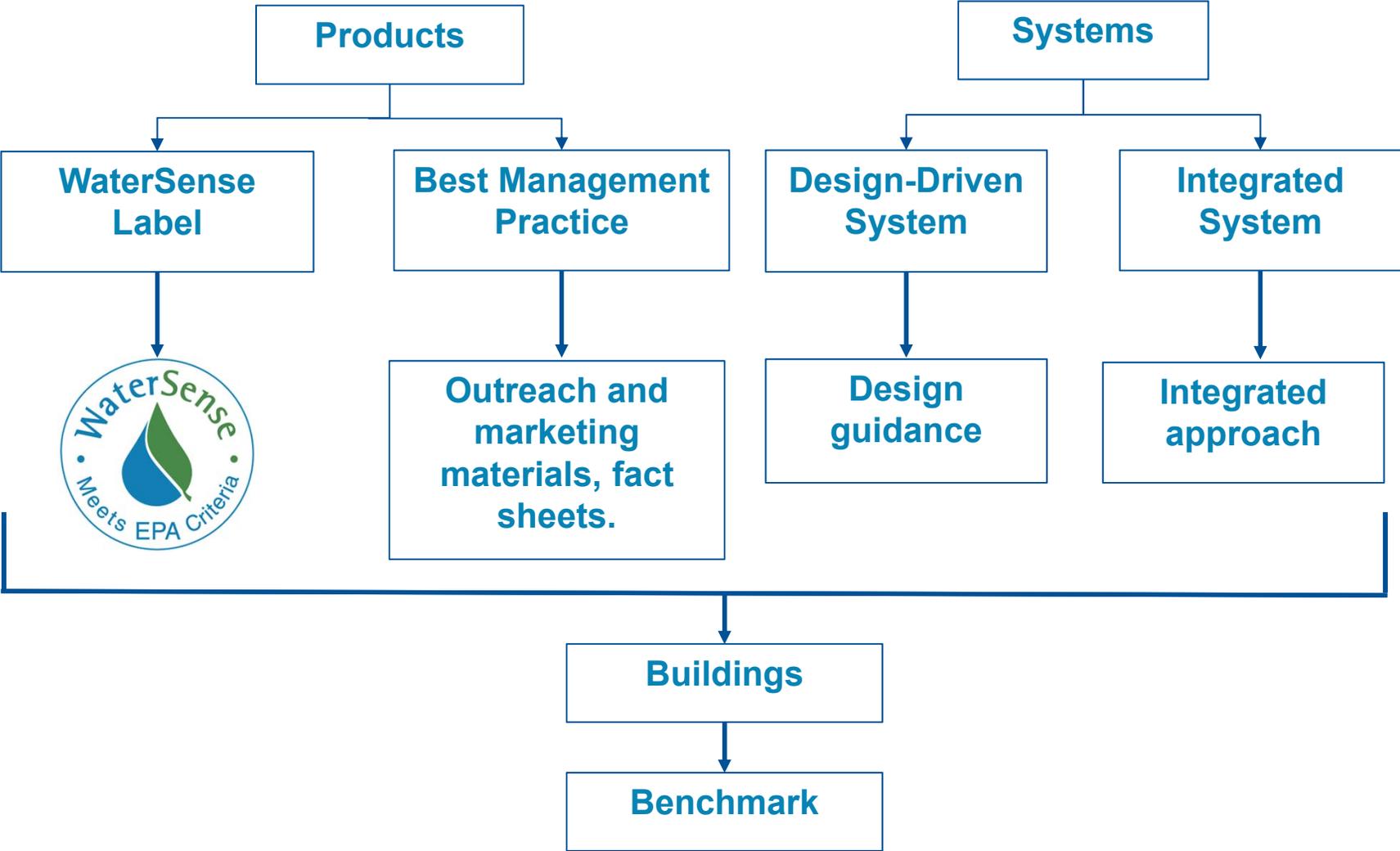
Encouraging research to identify solutions to issues raised for products for provide opportunities for savings (e.g., soil moisture sensors, cation exchange water softeners, tub spout diverters)

Evaluating minimum flush volumes and flow rates with plumbing standards committees – answer the question of how low flows can go before affecting performance or creating negative outcomes

Looking towards using a more holistic approach to savings via building benchmarking with the ENERGY STAR program – Water Score for Multifamily properties released in October 2017

Developing an integrated approach to balance water efficiency, health and safety, and viability of plumbing and building systems

Water Use Optimization Strategy



WaterSense Information



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Questions?

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