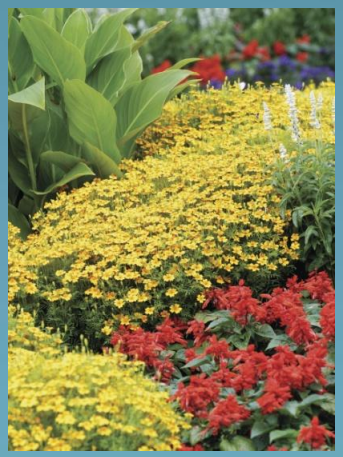
Landscape Irrigation Sprinkler & Emitter Standard

Overview and Update of the ASABE/ICC Standard 802-2014



What we'll cover

- Project Background
- Overview of Standards
- Overview of Draft Standard
- Implications for the Industry

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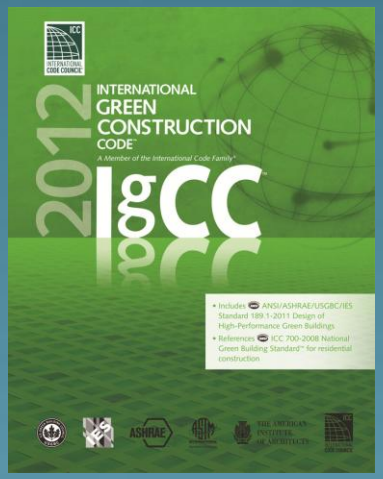
2008 EPA WaterSense® Partner of the Year

Chair, ASABE/ICC Irrigation and Emission Devices Committee (IS-IEDC)

Project Background

- ICC initiated projects in May, 2010 to develop ANSI consensus product standards for landscape irrigation sprinklers and emitters.



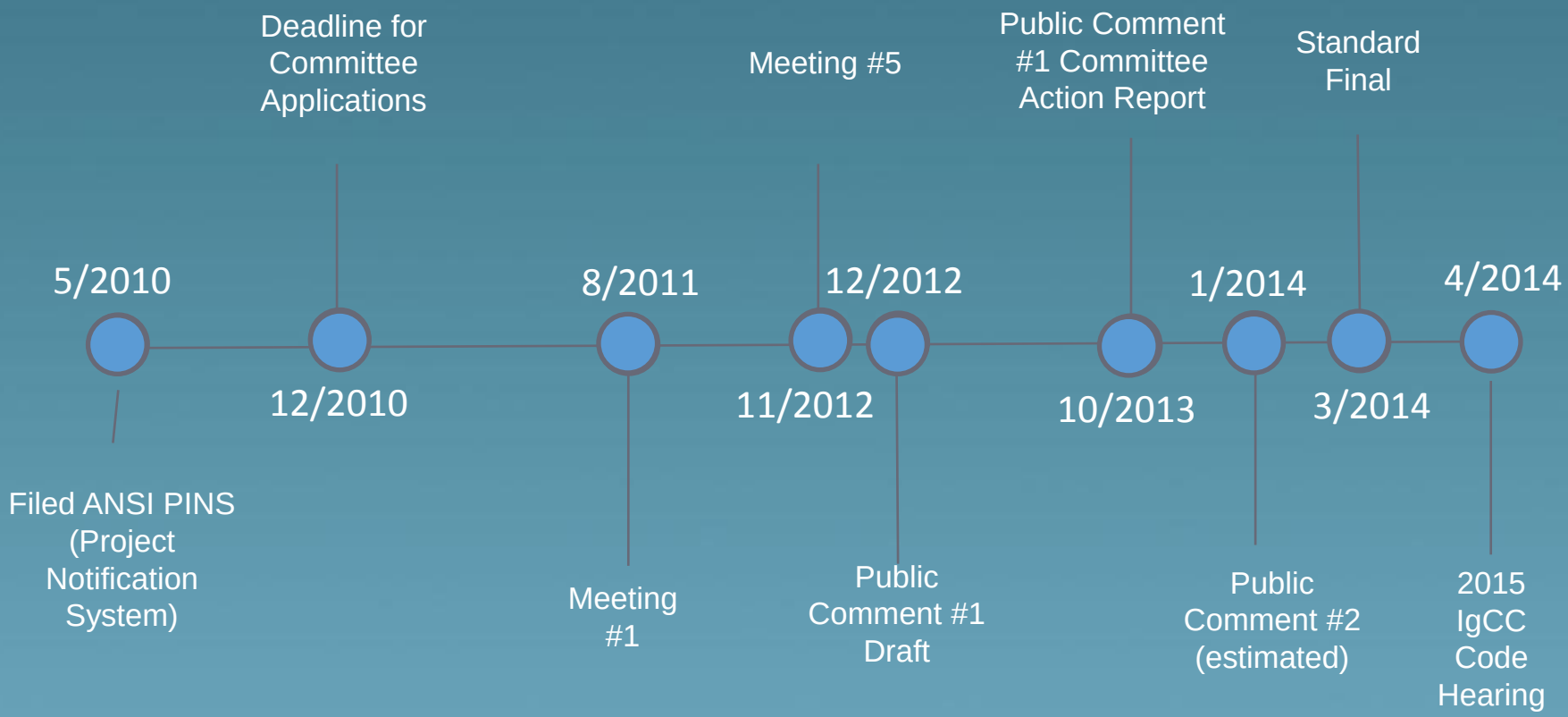
- Done in response to several industry issues:
  - Need for standards for reference in new green codes & standards with sections relating specifically to irrigation.
  - Increasing involvement of code officials in the inspection of landscape irrigation systems in some parts of the country.
  - Lack of basic minimum product design and performance requirements.
  - Lack of consistency among test methods for common performance factors.

Project Preparation

ICC Conducted a roundtable discussion on the projects with industry stakeholders at WSI 2010 and the 2010 Irrigation Show. Results included:

- Invited ASABE to partner on the standard. An excellent partnership that has helped to ensure consistency with existing standards and terminology.
- Decided to retain microirrigation in its own section within the document.
- Extended the application period for standard committee volunteers to ensure the widest possible participation pool.

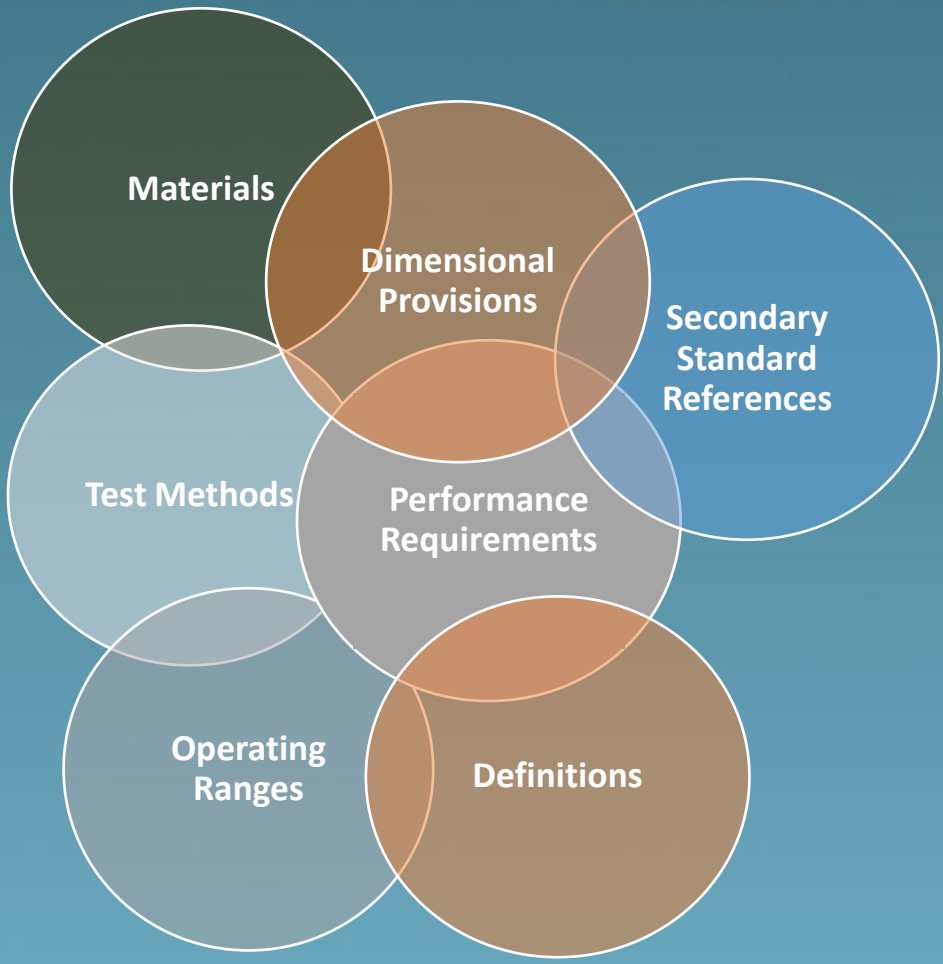
Standard Development Timeline



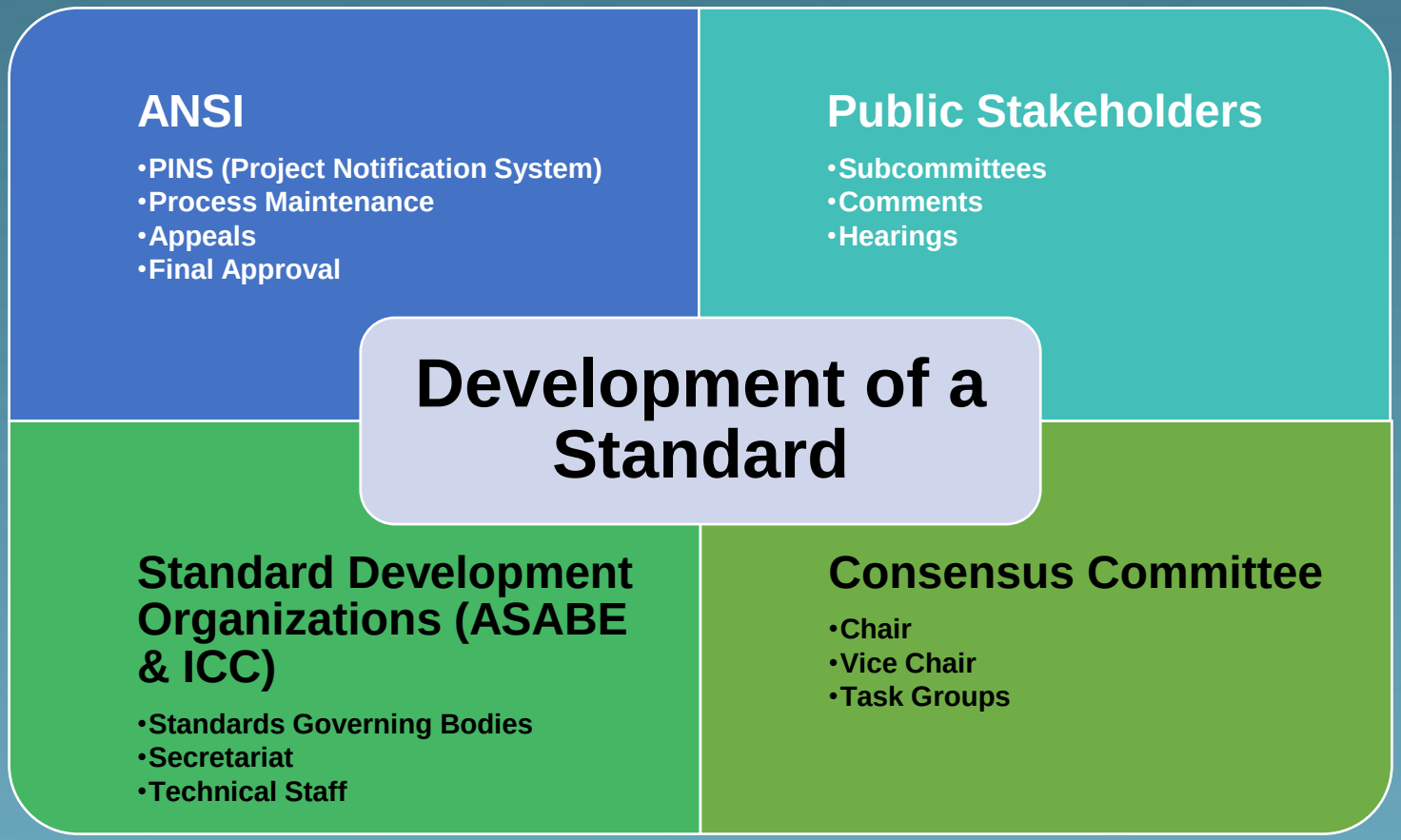
A Brief Overview of Standards

What's in a Product Standard?

- Provisions for the design, construction, performance and testing of products.
  - Must allow for innovation.
  - Emphasis on (minimum) performance provisions, not prescriptive design.
- Assure function of components within systems.
- Supports certification assessment (product testing and labeling)

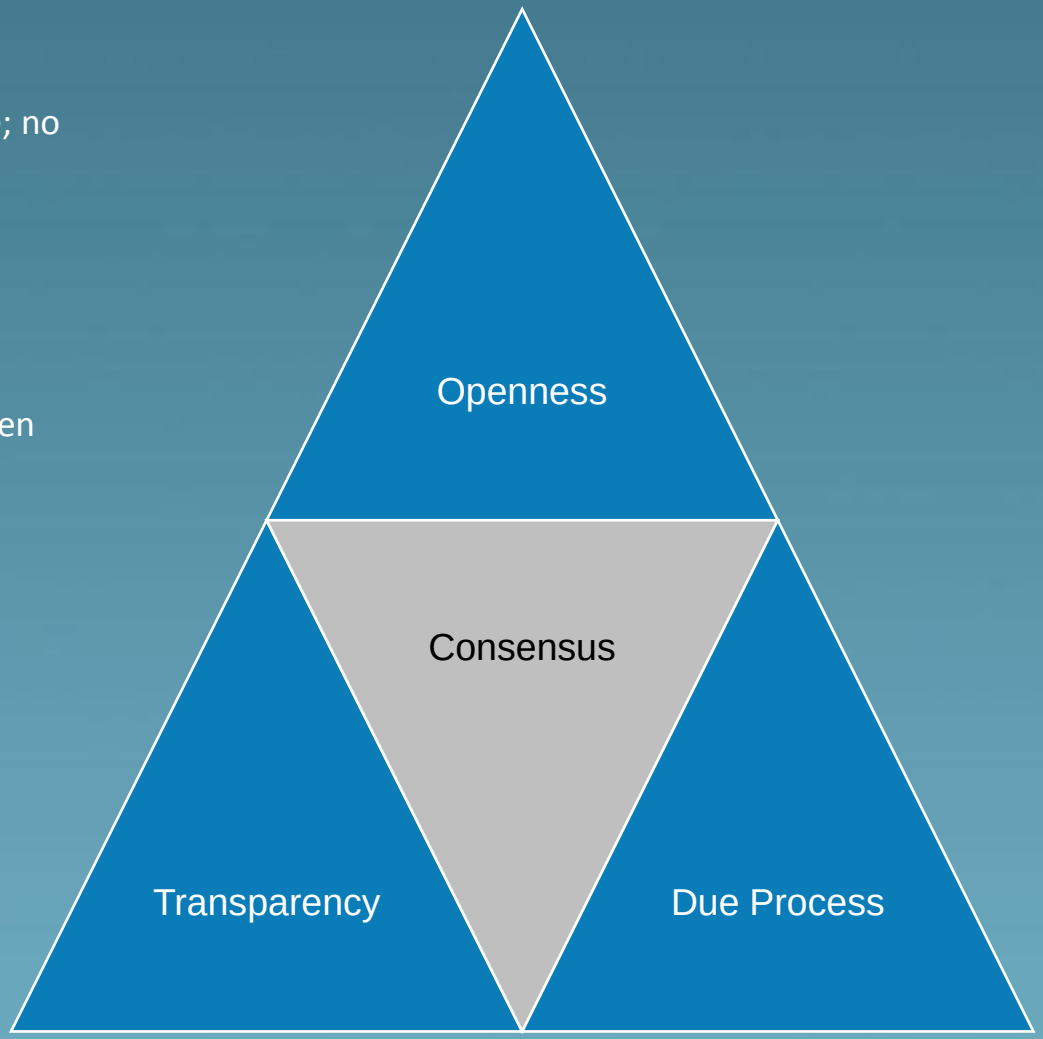


Who is involved?



ANSI Process - an Overview

- Openness
  - All stakeholders may participate; no single interest may dominate
  - Committee determines content (not ICC, ASABE or ANSI)
- Transparency
  - Nothing is hidden: Records, processes, deliberations are open and publicly available
- Due Process
  - Appeals mechanism
  - Process based on ANSI requirements.
- Consensus
  - Decisions require more than a majority but not unanimity; all viewpoints are considered



Consensus Committee Roster

- Leadership
  - Michael Dukes, PhD, University of Florida (Sprinkler Task Group Chair)
  - Travis Tsunemori, ASABE (Admin, Packaging & Marking Task Group Chair)
  - Brent Mecham, Irrigation Association (Vice Chair and Microirrigation Task Group Chair)
  - Tim Malooly, Water in Motion, inc. (Chair)
- Other Represented Organizations
  - Rain Bird Corporation
  - Hunter Industries
  - U.S. EPA WaterSense Program
  - Tampa Bay Water
  - Southern Nevada Water Authority
  - Alliance for Water Efficiency
  - City of Phoenix
  - CA Department of Water Resources
  - Iredell County, NC
  - City of Carrolton, TX

Additional Participants Included

- Dow Chemical
- The Toro Company
- QAI Laboratory
- Underwriters Laboratories
- ASIC members
- PLANET
- Irrigation Mart
- Consultants, designers and other practitioners

All meetings were open to the public and an extensive Interested Parties List is updated on all project developments.

Project website located at: www.iccsafe.org/is-iedc

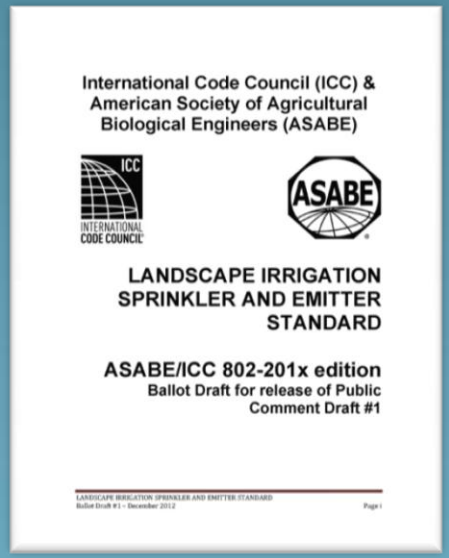
Overview of the ASABE/ICC Landscape Irrigation Sprinkler and Emitter Standard

Applicability – What Devices are Included?

- Sprinklers and emitters designed for use within landscape irrigation systems.
  - Excludes exclusively agricultural sprinklers and emitters and valve-in-head devices.
- Sprinklers
  - Sprays
  - Rotors, including MSMT
  - Bubblers
- Microirrigation
  - Drip emitters (point source, drip line, multiple outlet)
  - Microsprays

Public Comment Draft 1 Outline

- **CHAPTER 1 ADMINISTRATIVE PROVISIONS**
- **CHAPTER 2 DEFINITIONS**
- **CHAPTER 3 REQUIREMENTS FOR SPRINKLERS AND BUBBLERS**
  - General
  - Materials
  - Sprinkler and Bubbler Design Requirements
  - Sprinkler and Bubbler Performance Requirements and Test Methods
  - Sprinkler and Bubbler Product Marking
- **CHAPTER 4 REQUIREMENTS FOR MICROIRRIGATION EMITTERS AND MICROSPRAYS**
  - General
  - Materials
  - Microirrigation Emission Device Design Requirements
  - Microirrigation Emission Device Performance Requirements and Test Methods
  - Microirrigation Emission Device Product Marking
- **CHAPTER 5 REFERENCED STANDARDS**



Minimum Requirements

- Ambient Air Temperature: -40 to 140°F (-40 to 60°C)
- Operating Air Temperature: 40 to 140°F (5 to 60 °C)
- Dynamic Water Temperature: 40 to 85°F (5 to 36.4 °C)
- **Integral pressure regulation for sprays.**
- Resistance to UV degradation and oxidation (without impacting performance)
- Provide specific information by some publicly available means.

Test Specifications

- Sprinklers

- Flow rate
- Distance of throw
- Uniformity: Calculated using data from distance of throw.
- Hydrostatic burst pressure.
- Pressure regulation (mandated on sprays, optional elsewhere)
- Check valve head (if included)

- Microirrigation Devices

- Uniformity of flow rate
- Emitter flow rate as a function of pressure
- Deviation of mean flow rate from nominal flow rate
- Microspray distance of throw
- Emitter pull-out
- Water-tightness
- Coefficient of variation
- Check valve head

Sprinklers –Tests & Performance Requirements

	Sprays	Rotors	Bubblers
Flow Rate	X	X	X
Distance of Throw	X	X	
Uniformity (calculated)	X	X	
Burst Pressure	1.5xMax/150psi	1.5xMax/150psi	1.5xMax/150psi
Check Valve Head*	7' head	7' head	X
*Pressure Regulation**	X (required)	X	X

** Check valve head, pressure regulation test only required when feature is present.*

Microirrigation – Tests and Performance

	Point-Source	Line-Source
Uniformity of Flow rate	+/- 7% deviation of mean from nominal published	+/- 7% deviation of mean from nominal published
Flow rate as a Function of Pressure	+/- 7% published	+/- 7% published
Emitter Pullout	> 9 pounds	
Water-tightness	No Leakage	No Leakage
Emitter exponent*	< 0.2	< 0.2
Coefficient of Variation	< 7%	< 7%
Check valve head**	X	

**Emitter exponent only required for pressure-compensating emitters.*
*** Check valve head test only required when the feature is present.*

Microsprays

	Test & Performance
Microspray Flow Rate	+/- 7% published flow rate
Uniformity of Flow Rate	+/- 7% published flow rate
Microspray Distance of Throw	X
Check Valve Function	X
Coefficient of Variation	<7%

What are some of the implications of the standard on the industry?

Marking and Labeling

- All information to be provided in some publicly available location.
- Specific list of information to be provided, test method (if applicable) and units for each device type.
- Manufacturer name
- Connector type and size
- Pop-up height
- Presence of an integral flow shut-off, check valve and/or pressure regulating feature
- Instructions for installation and servicing

Benefits for Water Efficiency

- Integral pressure regulation required
- Consistent, more accurate test results
- Better information for designers and installers enabling better designs and product choices
- Sets the groundwork for additional standards and performance specifications
- Improves durability, reduces likelihood of leakage failures
- Provides a means for inspection, verification and quality control in the field

Thank You!

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