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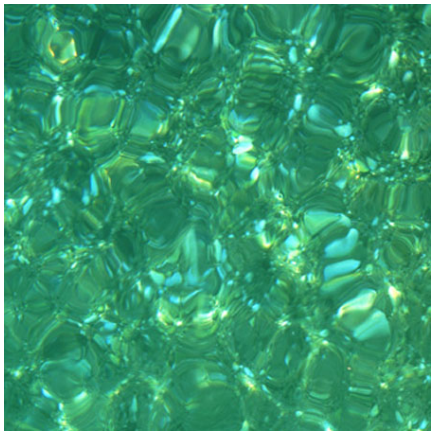
Using Codes to Save Water in Your Community



Water Efficiency in the 2012 IgCC

October 4, 2012

Shawn Martin
International Code Council

ICC INTERNATIONAL CODE COUNCIL®

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Using Codes to Save Water in Your Community

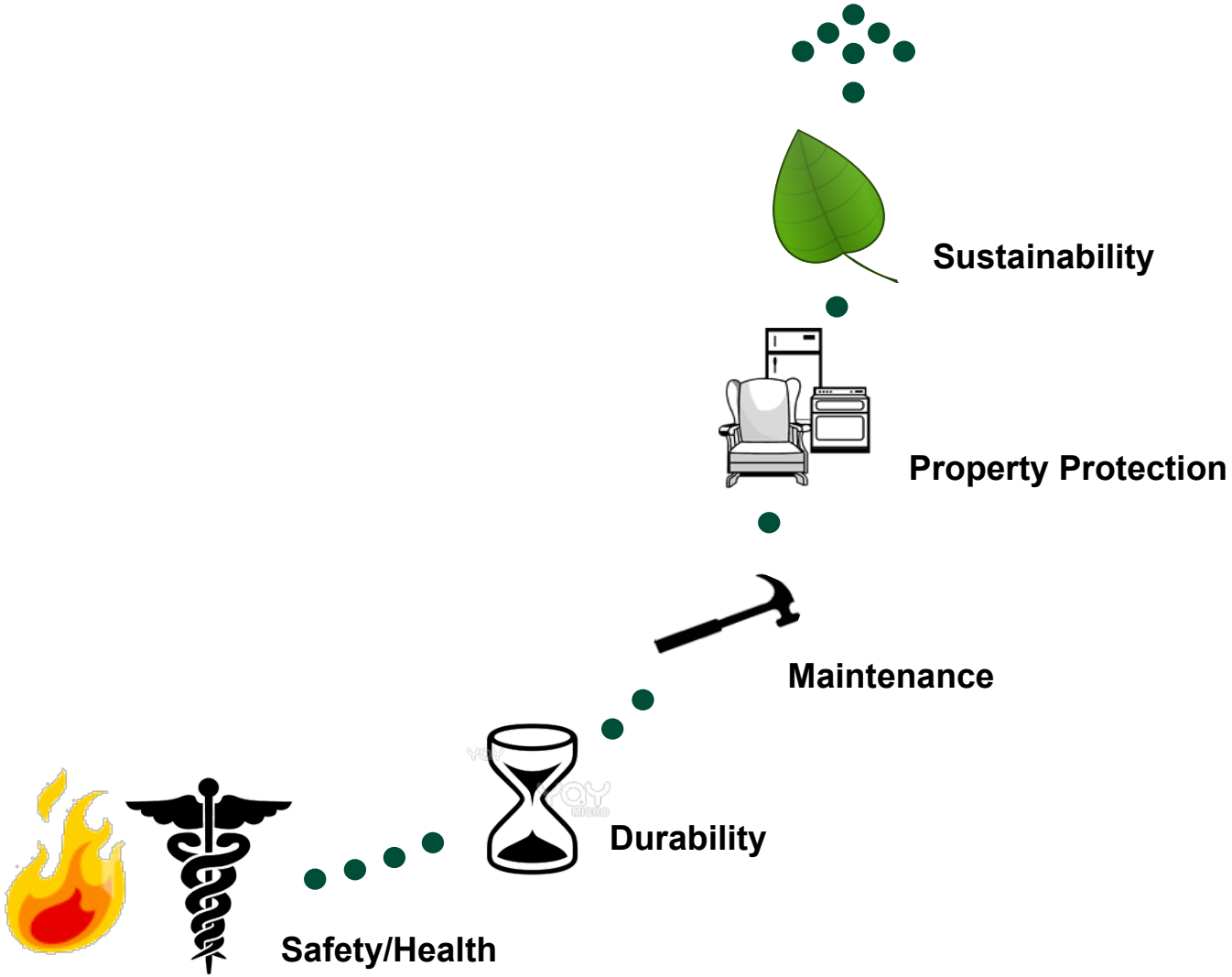
What are Codes?

Code: Collection of requirements that pertain to a specific subject and regulate specific practices.

Minimum requirements for:

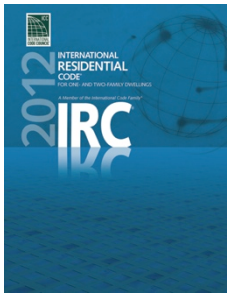
- WHAT can be built
- WHAT can be used to build it
- HOW it must be built

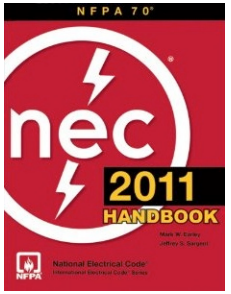
Model Code Layers and Evolution

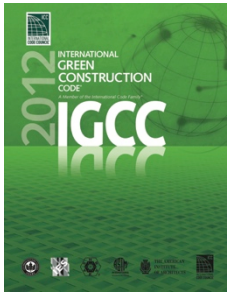


Flavors of the Code

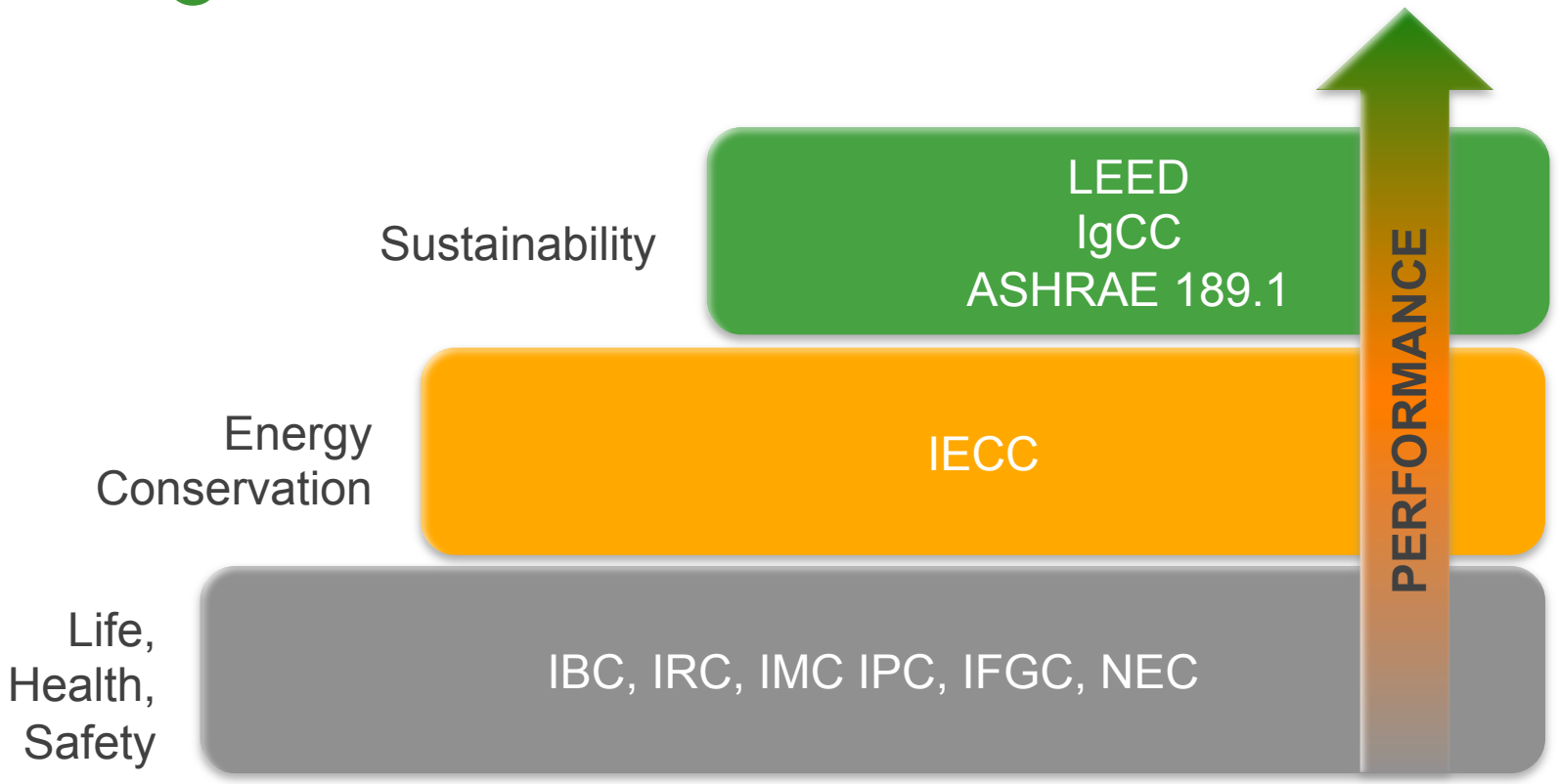
- Building Codes
- Fire Code
- Electrical Code
- Plumbing Code
- Mechanical Code
- Zoning Codes
- Green Codes
- Health Codes
- Swimming Pool Codes





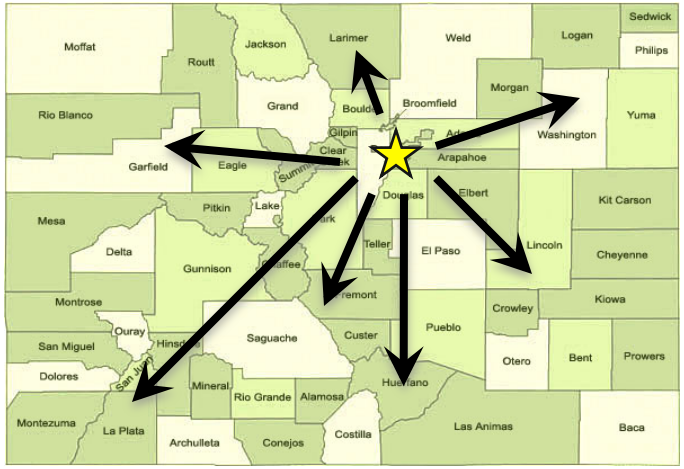


Tiered Approach to Performance Regulation

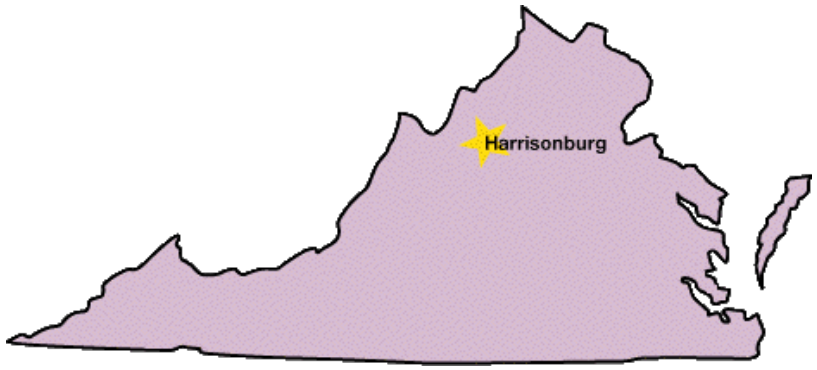


Adopting a Code Locally

COLORADO



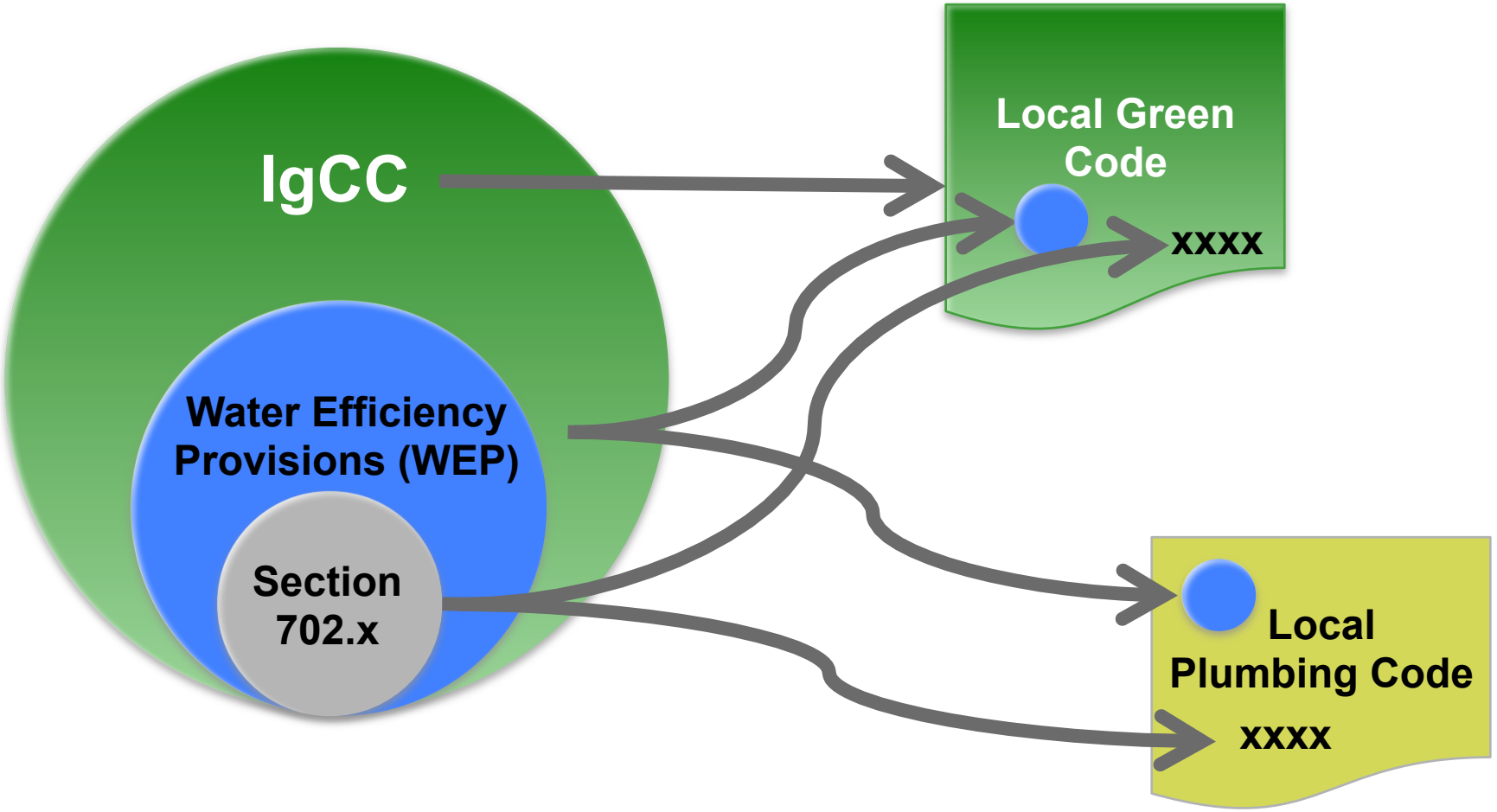
VIRGINIA



Individual states either adopt a state plumbing code or delegate the responsibility downward.

- No two states are alike
- Can be pre-empted and delegated
- 40,000+ political subdivisions enforce codes

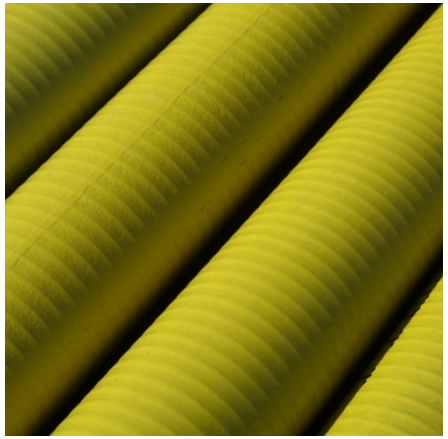
Adopting Water Efficiency Code Provisions



Water Efficiency and Conservation in the IgCC

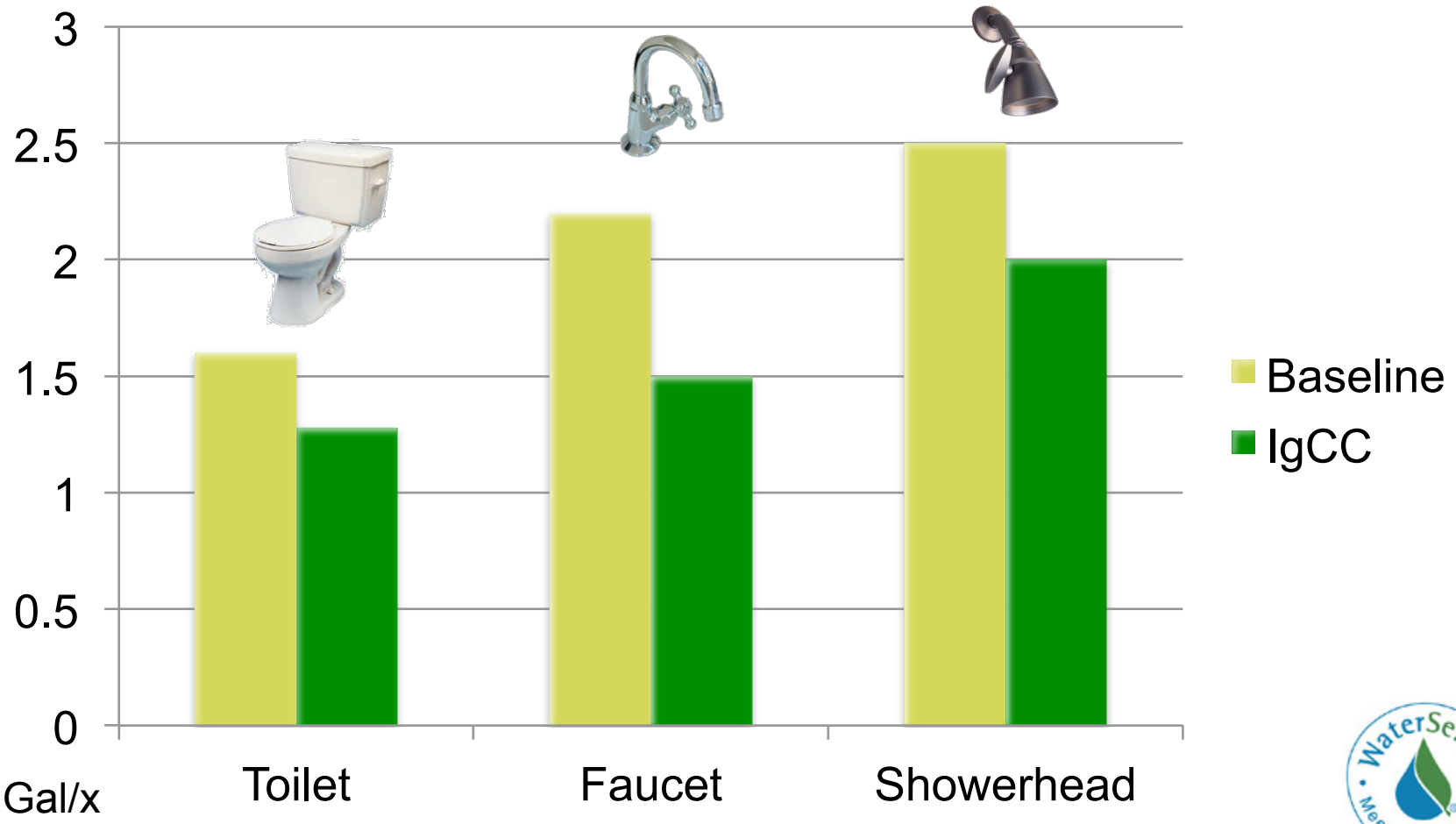
IgCC Subject Areas

- Energy efficiency and alternative energy sources
- **Water efficiency and alternate water sources**
- Materials and resource use
- Indoor environmental quality
- Global impact
- Site design and impact of land development
- Operation and maintenance



Plumbing Fixtures

Water consumption for many common plumbing fixtures/ fittings prescriptively limited by type



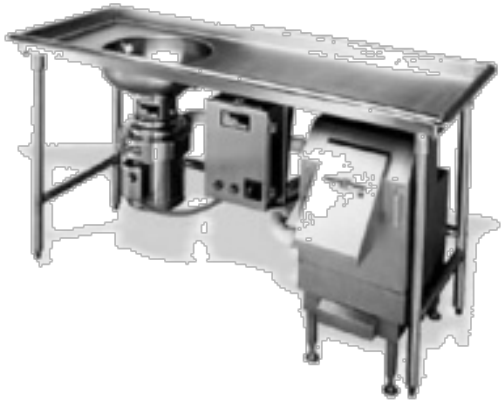
Plumbing Fixtures

Fixture or Fitting Type	Maximum Flow
Showerhead	2.0 gpm & WaterSense®
Lavatory Faucet – Private	1.5 gpm
Lavatory Faucet – Metered Public	0.25 gpc
Lavatory Faucet – Nonmetered Public	0.5 gpm
Kitchen and Bar Sink Faucets	2.2 gpm
Urinal	0.5 gpf &WaterSense®; or non-water
Water Closet - Public	1.6 gpf (1.28 gpf, if non-remote)
Water Closet - Private	1.28 gpf, WaterSense
Prerinse Spray Valves	1.3 gpm
Manual Drinking Fountain	0.7 gpm
Metered Drinking Fountain	0.25 gpc

Appliance Water Use

	Clothes Washers	EnergyStar, WF < 6.0, MEF < 2.0
	Ice Makers	No water cooling. 25 gal/100# for flake, nugget, continuous
	Food Steamers	< 2.0 gph in any mode
	Dishwashers	Table per type (rackless/utensil) or EnergyStar
	Combination Oven	< 10.0 gph in any mode
	Commercial Food Waste Disposer	< 1.0 gpm no-load and < 8.0 gpm full-load

Miscellaneous Devices & Systems



- Commercial food waste disposers
- Food service handwashing stations
- Carwashes
- Autoclaves/Sterilizers
- Trap primers
- Water-powered pumps
- Film processors

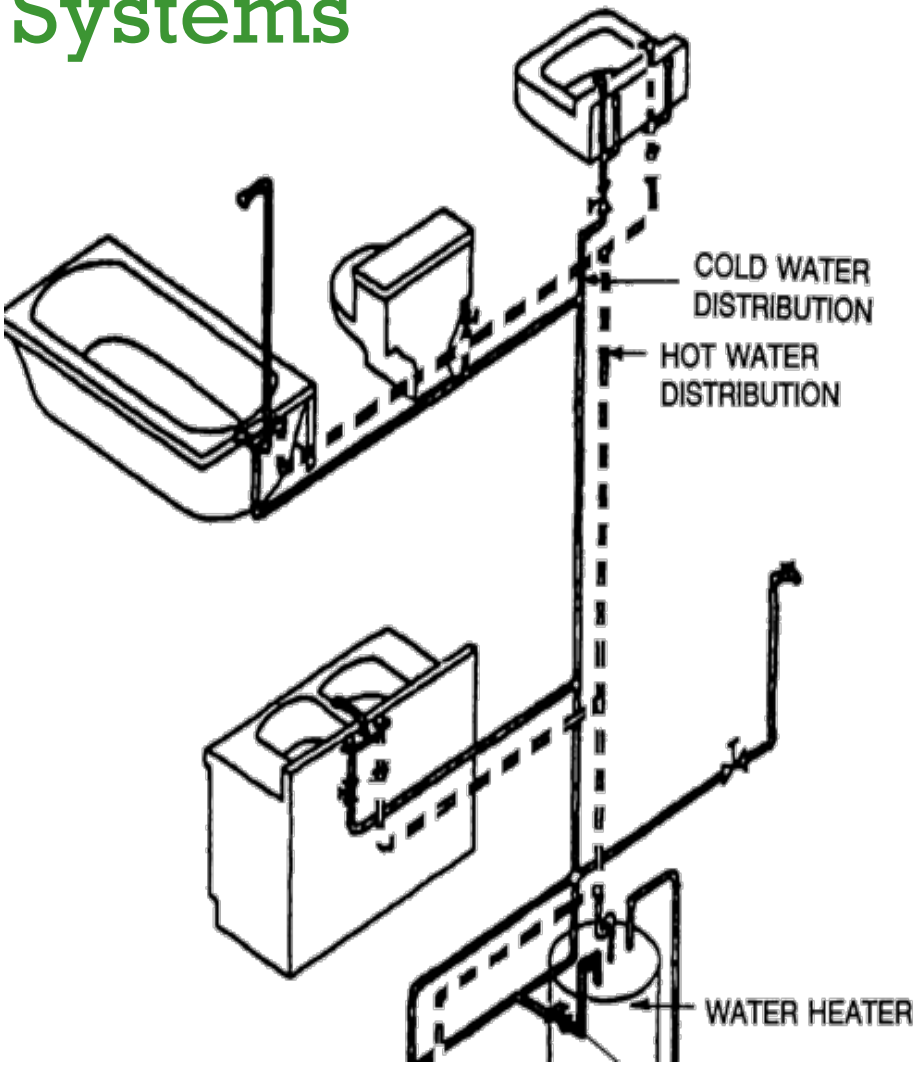
HVAC & Water Treatment

- HVAC equipment water use
  - Hydronic heating & cooling
  - Condensate cooling
  - Cooling towers
- Water treatment devices (softeners, RO)

- Conductivity Controllers
- Overflow Alarms
- Drift reduction

- Demand initiated regeneration
- Salt efficiency
- Automatic shutoff

Efficient Hot Water Delivery Systems



Reduces water and energy waste by adding insulation and limiting the total volume in hot water pipes.

Methods:

- Volume limit

OR

- Maximum pipe length

Alternate Nonpotable Water Systems

Detailed requirements for alternate supply systems that integrate with plumbing codes.

Onsite

- Rainwater collection and distribution systems
- Graywater reclamation and reuse systems
- Other

Central

- Reclaimed water systems (aka:“recycled)

Nonpotable Water Applications

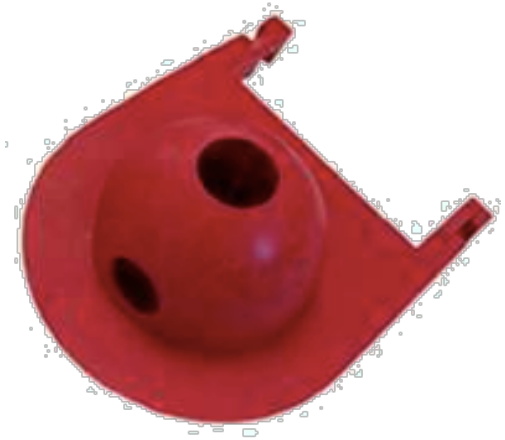
Applications*

- Flushing
- Surface & subsurface irrigation
- Cooling tower makeup
- Water features
- Fire suppression
- Trap priming
- Fluid coolers
- Onsite water reuse makeup

** As permitted locally*

Device Protection

- Filtration
  - 100 micron or finer filtration
- Disinfection Limits
  - Maximum chlorine/ chloramine levels
  - No entrained ozone bubbles

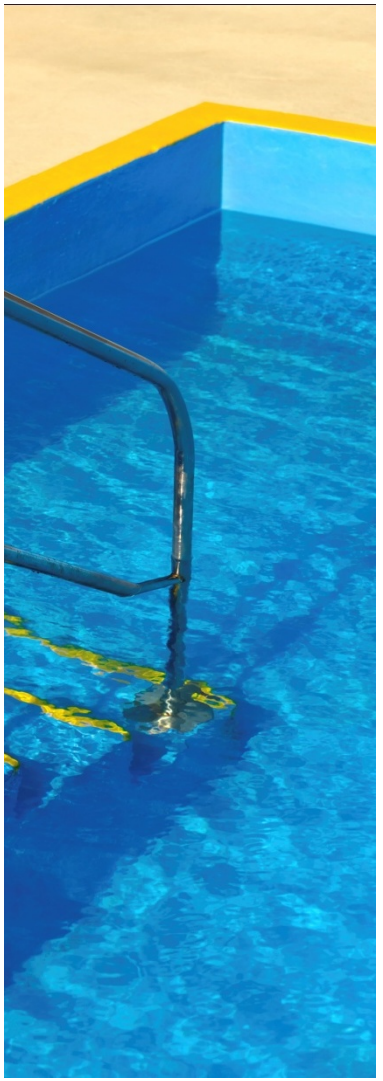


Outdoor Water – Landscape Irrigation

- Surface irrigation
  - 50% potable reduction (from mid-summer baseline)
  - Smart controller (weather, climatological, soil moisture)
  - Rain sensor
  - Hydrozoning
  - Matched precipitation rate sprinklers w./ slope limits
  - Microirrigation pressure regulation to <40 psi
  - Sprinkler distribution uniformity > 0.65
- Subsurface irrigation or disposal
  - Percolation rate measurement
  - Drip irrigation

Outdoor Water - Other

- Pools and spas
  - Backwash collection and reuse
  - Cover for heated pools
  - Timeclock controls on recirculation
- Water features
  - Potable water for < 100 gal, < 20sf
  - Recirculation required
  - Non-potable water use where permissible
- Carwash systems
  - >50% rinse water collection and reuse (auto)
  - < 40 gallons/vehicle (auto), < 35 (manual)
  - Spray wand < 3 gpm



Taking the Next Step

- Get to know your local code change process.
  - Homegrown or model?
  - Update schedule and process
- Figure out what you want to propose and where you want to put it.
- Get to know supporters and those who might oppose. Seek consensus.
- Ask questions and get help when you need it.

Questions?

Shawn Martin
Director of Industry Relations
ICC Plumbing Mechanical and Fuel Gas Group
smartin@iccsafe.org

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