This presentation premiered at WaterSmart Innovations

watersmartinnovations.com

watersmart
INNOVATIONS

Green Building Codes:
Improving Water Efficiency

Thomas Pape
Technical Advisor, AWE
Principal, BMP

Tom@a4we.org

Why are codes needed?

- Standards only address the product itself; not how, when and where it is installed.
- WaterSense is voluntary program
- Federal standards are not based on local conditions
- Rebates, vouchers and distributions can be costly
- LEED is not solely dedicated to water efficiency

Codes Versus Ordinances

- Ordinances require implementing & administrating enforcement
- Codes enforcement department already exists
- Codes only apply when permit is required
- Codes offer minimal implementation costs

Role of Codes

- Codes do not replace: standards, ordinances, EPAct, WaterSense, vouchers, rebates, distributions ….
- Codes enhance the overall strategy of water efficiency

IAPMO Green Plumbing & Mechanical Code Supplement

ICC International Green Construction Code

- Supplements existing code, not stand alone code
- Most compatible to own family of codes, but not exclusive
- Very Comprehensive: Plumbing, HVAC, Appliances, Alternate water sources
- Residential (some) and non-residential
- Limited irrigation provisions

Key Differences

IAPMO Green

- All residential and non-residential
- Prescriptive based water efficiency
- Easy to implement, inspect and enforce
- 1st Edition available

ICC Green

- Only high-rise residential and non-residential
- Performance based water efficiency options
- Offers flexibility to builders & JHA
- In-progress

Sanitary Fixtures

- Faucets – 0.5 to 1.5 gpm
- Showerheads – 2.0 gpm/1800 ft^2
- Toilets – 1.28 gpf; flushometer 1.6 gpf

Appliances

- Energy Star
- WaterSense
- Water Softeners
  - Use limits
  - Discharge water efficiency

Water Pressure

- 65 psi maximum

Commercial Kitchens

- Icemakers > 50% water efficiency
- Steamers < 2 gal/hr
- Combo ovens <10 gph
- Dipper wells (?)

Medical and Laboratory

- No water tempering for sterilizers
- X-ray process requires recycling
- Exhaust hood scrubber - H_2O re-circulation required

Sub-meters Required

- Irrigated landscape
- Cooling towers
- Boilers
- Each building
- Each tenant space
- Processes using > 1,000gal/day

Alternate Water Sources

- Gray Water
- Reclaim Water
- Rainwater
- Condensate recovery
- Discharge water re-use

Hot Water Distribution

- Limiting cold water purge to 32 oz
- Pipe insulation

Effectiveness Factors

- New construction rate
- Remodeling rate (where plumbing appliances or fixtures are affected)
- Retrofit upon resale (?)

More Information

Alliance for Water Efficiency
a4we.org
Tom@a4we.org

Thomas Pape
bmp4h2o@aol.com
510-325-7308