

# WATER CONSERVATION: COOLING TOWERS AND CONDENSATE RECOVERY

Presented to the  
Joint Broward WRTF/Tech Team  
April 1, 2011

# Implementation Options

- ▣ Amendment to Florida Building Code
  - General vs. Section specific
  - Constraint - Timing
- ▣ Local Amendment
  - Geographical justification
  - Constraint - 3 yr renewals
- ▣ Legislative Option
  - Seek regional collaboration
  - Constraint - collaborative process

# Approach

- ▣ Coordination with the Broward Board of Rules and Appeals
  - Discussions with BORA staff
  - Consult with DCA
  - Conference with legal counsel
- ▣ Identified legislative process specific to high wind velocity section of code as preferred approach
- ▣ Consulted with Miami-Dade office of sustainability, support for BORA review

# BORA Process

- ▣ Invited to address Miami-Dade BORA
- ▣ December 16, 2010 – presentation before Miami-Dade BORA
  - Response was divided
  - Motion to support failed
  - Unanimous support for Joint Workshop
- ▣ February 9, 2011- Joint Broward/Miami Dade BORA Workshop

# Joint BORA Workshop

- ▣ Purpose: discuss proposal and technical merits
- ▣ Strong industry presence
- ▣ Industry representation challenged “no-bleed” concept
- ▣ Skepticism expressed by Miami BORA regarding:
  - Water shortage
  - Need for conservation
  - No bleed technology
  - Biological treatment
  - Practical applications
- ▣ General support for condensate recovery

# Outcome

- ▣ Miami-Dade BORA suggested follow-up in 6 months
- ▣ Broward BORA offered alternative strategy – Broward ad hoc water conservation subcommittee
- ▣ Charge: discuss diversity of water conservation opportunities available through building code and local ordinance
- ▣ Participants to include Dr. Jennifer Jurado and Mr. Steve Bassett

# Broward BORA Ad Hoc Subcommittee

- ▣ Kick-off held on March 8, 2011
  - Review of industry standards
  - Review of cooling tower technologies (chemical and non-chemical)
  - Discussion of condensate recovery (opportunities for reuse)
  - Acknowledged need to allow Health Dept to review any recommendations
  - Suggested participation of service providers and conservation specialists at subsequent meeting.

# Broward BORA Ad Hoc Subcommittee

- ▣ March 24, 2011 - 2<sup>nd</sup> Meeting
  - 8 Technical Presentations
  - Review of specific technologies and case studies
  - Cost savings and cost recovery established
- ▣ Next meeting – April 26, 2011
- ▣ Invited participation of Mr. Bruce Adams, Eaton Corp
  - Former SFWMD conservation specialist
  - Familiar with approach and projects

# Miami-Dade BORA Update

- ▣ Staff directed to build on investments made as part of the joint Broward/Miami-Dade BORA
- ▣ Acknowledged general support for condensate recovery as:
  - Seasonally available
  - Good correlation between supply and cooling tower demand
  - Low minerals provides dilution
  - May provide additional cost savings if biological controls and algaecides are reduced
- ▣ Request to reconvene Joint Sub-committee to consider mandatory recovery and to workshop with industry

# Proposed Local Technical Amendment

## Sec. 8-31. - Local technical amendments to Florida Building Code.

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>> (C) The County hereby adopts the following local technical amendments to Chapter 3 of the Florida Building Code, Mechanical Volume.

307.2.1 Condensate >>drainage recovery and <<disposal. Condensate from all cooling coils and >>dehumidification<< [[evaporators]] >> with a capacity exceeding 65,000 Btu per hour << shall be conveyed from the drain pan outlet to an >> approved condensate recovery system supplying supplemental make-up water to an on-site cooling tower basin or evaporative cooler basin. In buildings with no cooling tower or evaporative cooler, condensate shall be collected and conveyed to an << approved place of disposal. Condensate shall not discharge into a street, alley or other areas so as to cause a nuisance.

(D) The County hereby adopts the following local technical amendments to Chapter 3 of the Florida Building Code, Plumbing Volume.

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# Next Steps

- ▣ Broward BORA Ad Hoc Committee nominated to participate in Joint Sub-committee
- ▣ April meeting date is likely
- ▣ Broward BORA Ad Hoc Committee to continue to meet to identify focal areas, likely to include:
  - Low Bleed Cooling Towers
  - Condensate Recovery
  - High-Efficiency Plumbing
- ▣ Specific requirements and implementation strategies will be developed through workshops

**Questions?**