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# NEMA Mitigation White Paper Briefing

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# National Mitigation Efforts

- The White Paper
  - *A necessary restatement*
  - *A call for renewal and expansion*

# National Mitigation Efforts

- “Seeds need to be cultivated”
  - The experimentation with mitigation in the 1990s did not always translate to measurable and effective change: some of the “seeds” were planted on rocky soil.

# National Mitigation Efforts

- “Mitigation is a plank in the Sustainability Platform”
- Efforts which limit their focus to a sole discipline cannot effectively function in the multi-disciplinary arena of sustainability.
  - The same challenges with emergency management and mitigation exist in the area of green construction and code officials

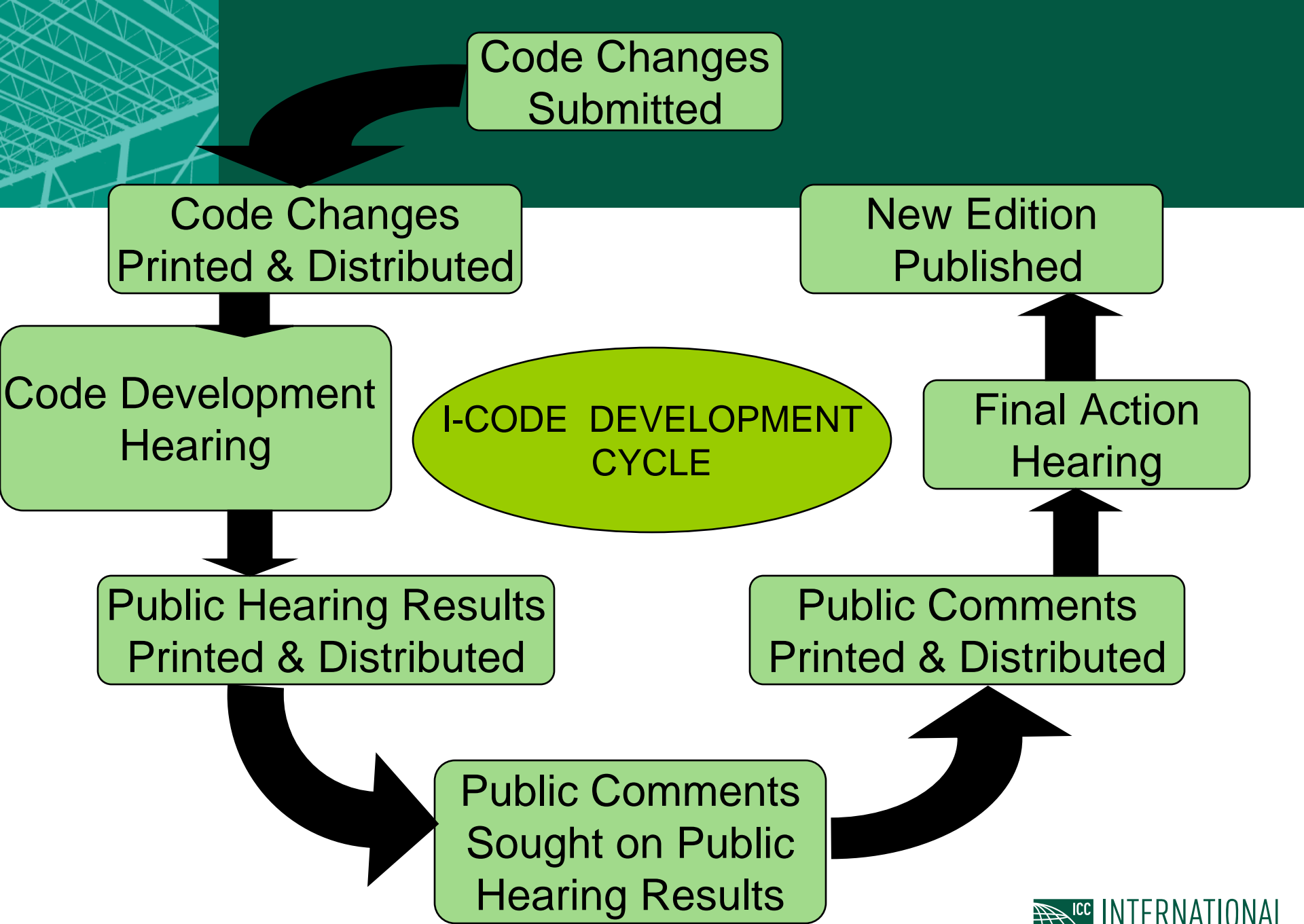
# National Mitigation Efforts

- “It’s not a wedge, it’s a continuum.”
- The old “disaster cycle” paradigm does not work for mitigation
- An infusion of other voices outside emergency management will be necessary

# National Mitigation Efforts

- “Incentivize and Partner”
  - Data, Resources and Programs still need more coordination
    - Multiple federal agencies and barriers to effective results
    - Inconsistent and under-coordinated state and local support

# Codes Overview





# Mitigation and the I-Codes

## **International Building Code (IBC)**

## **International Residential Code (IRC)**

## **International Existing Building Code (IEBC)**

- *Provisions regarding minimum wind loads, seismic loads, and flood-resistant construction are contained in these codes.*
- *Technical contributions to all of these codes come from:*
  - *FEMA – including a role as the “ad hoc caretaker” of flood provisions*
  - *BSSC (Building Seismic Safety Council) -- focused on all seismic provisions*
  - *SEAOC -- Structural Engineering Association of California*

# International Building Code

- **IBC Chapter 16:** minimum wind loads and seismic loads to be used in the design of buildings, based upon the *use group*, *occupancy*, and *post-disaster needs* for the building. This chapter also specifies flood resistance requirements in terms of location of buildings and design of portions of buildings below flood plain elevations.
- **IBC Chapter 34:** This Chapter deals with existing structures, and, in part, the particular issues with seismic design, wind design, and flood design for structures undergoing renovations, repairs, alterations, or for additions to structures.

# International Residential Code

- **IRC Chapters 3-10:**
  - provisions for the appropriate design of residential structures to resist seismic loads and wind loads.
  - High winds go to the ICC 600 standard.

# International Existing Buildings Code

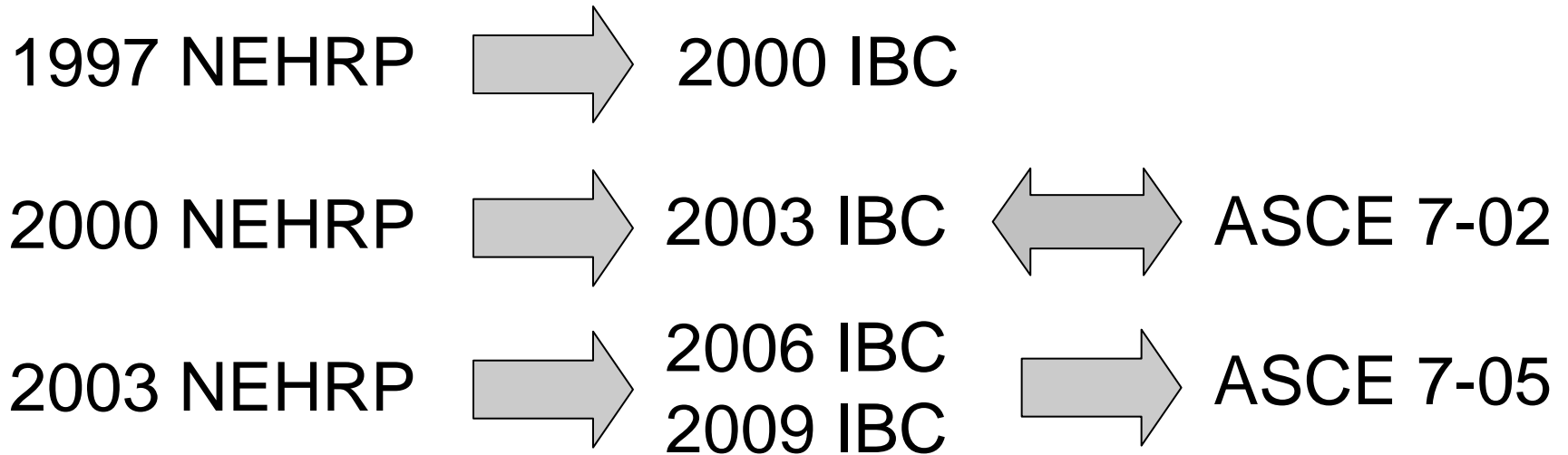
- **IEBC:** Similar to IBC Chapter 34, this code deals with existing structures, and, in part, the particular issues with seismic design, wind design, and flood design for structures undergoing renovations, repairs, alterations, or for additions to structures.

# International Wildland-Urban Interface Code

- Bridges the gap between enforcement of the *International Building Code* and the *International Fire Code* by mitigating the hazard of wildfires through model code regulations, which safeguard the public health and safety in all communities, large and small.
- Technical contributions to this code come mainly from industry and western fire service interests.

# Public Policy and Code Development

# Seismic Provisions



- *NOTE: the latest USGS ground motion maps will be addressed in the development hearings for the IBC and IRC, this fall in Baltimore, for the 2012 cycle*

# Flood Provisions

- The International Codes are consistent with the regulation of the National Flood Insurance Program. FEMA will continue to work with the International Codes as floodplain regulations are updated and revised (i.e., revisions to the Stafford Act).
- Also contained in the International Building Code is Appendix G: Flood Resistant Construction.
  - *“This appendix is intended to fulfill the flood-plain management and administrative requirements of the National Flood Insurance Program (NFIP) that are not included in the code. Communities that adopt the code and this appendix without modification, will meet the minimum requirements of NFIP as set forth in Title 44 of the Code of Federal Regulations (CFR). Prior to adopting the code or this appendix, communities are advised to consult their state NFIP coordinator or Federal Emergency Management Agency (FEMA) regional office to determine additional actions that may be necessary to provide for continued participation in NFIP.”*



# Construction Standards

# Construction Standards

## ICC 500: Standard for the Design and Construction of Storm Shelters

- Provides design, construction and performance of design regulations for community shelters and residential safe rooms. The level of wind resistance required for the shelters and safe rooms will be very high, based on rare storms. Standard developed by representatives of professional organizations, industry and government.
- The new standard is included in the 2009 *International Building and Residential Codes*. FEMA contributed input through public comments, and through participation in discussions at committee meetings. ICC 500 has been approved by the American National Standards Institute (ANSI) Board of Standards Review.
- **Committee: ICC/NSSA Consensus Committee on Storm Shelters**

# Construction Standards

## ICC 600: Standard for Residential Construction in High-Wind Regions

- Provides wind-resistant design and construction details for residential buildings constructed in high wind regions, where wind speeds reach 100-150 miles per hour.
- Developed by representatives of professional organizations, industry and government. FEMA contributed input through public comments, and through participation in discussions at committee meetings.
- Approved by ANSI as an American National Standard, it includes new provisions such as prescriptive designs for wind speeds up for 150 mph with three-second gusts, designs for cold-formed steel framing and exterior wall coverings for high wind. It is a referenced standard included in the 2009 *International Residential Code*.
- **Committee: ICC Consensus Committee on Hurricane Resistant Construction (IS-HRC)**

# Codes & Code Development as a Driver of New Policy

# New Policy

- “The Tail May Be Wagging the Dog”
  - The federal policy cycle is slower and less inclusive.
  - Federal policy could reference code provisions, rather than codes referencing federal policy.

# New Policy

- “Invest and Enforce”
- Enforcement in mitigation is as essential as enforcement in other areas of public health and safety
  - Community Building Code Administration Grant Act
  - Expanded Knowledge Base for Disaster Inspectors
  - National Database for Code Adoptions and Best Practices

# National Mitigation Efforts

- “At all times and all places”
- The multi-disciplinary nature of mitigation is essential to its success