

Session: Preparing for Coastal Storms and Hazards

Rick Dixon:

Florida Building Code: What Works – What's Next

- Upgraded building codes a reaction to previous hurricanes
- ***Prior to Andrew, it was considered best hurricane code in the world***
- Andrew showed it was not as effective as needed to be
- After Andrew, single state-wide building code with more influence over local jurisdictions
- 1974 = required to adopt building code
- ***After Andrew, state able to usurp local control, state regulated the licensing of building inspectors***
- 1996: FL coastal monitoring program (wind speeds)
- ***In FL, codes based on 3 second gusts, not 1 minute average***
- ***Things should not have failed like they did – winds weaker than what they were built to withstand***
- Coastal construction control line and coastal building zone – lowest structural member must be above the wave height line (above the NFIP standard)
- Concrete slabs should be breakaway
- Even though buildings standing, property damage remains an issue (siding, roof, windows)
- ***2001 FL building code increased the standard for shingles → new shingles performed best in 2004/5 hurricanes***
- FL building code requires attachment of air conditioning to building frame
- 2 buildings with same owner and both with new roofing – the one with lower sloped roof, lack of glued down edges had damages
- Tiled roofs lost at all wind speeds, loose tiles act as missiles
- Perforated aluminum or vinyl material sockets recommended
- ***65% of insurance claim damages due to water***
- Improvement since Andrew: connectors widely required
- Expanded Insulate Foam System (EIFS) – unclear what the failure is
 - NC tried to ban the use of EIFS but had to back off
 - FL cannot discriminate against materials or methods; can set up standards that would limit what can be used
 - In Broward and ? Counties, windows, doors, walls, and roofs have to be impact resistant → EIFS does not meet walls and roof requirement
- 34% of window damage in tile roofs neighborhoods (compared to 19% non-tile)
- Homes with window damage and no window protection = 47% in tile roof neighborhoods
- Homes with window damage and window protection = 15.4% in tile roof neighborhoods (vs. 9.5%)

Doug Harper:

Sheltering Communities from Coastal Storms – NOAA’s Coastal Storms Program

- Coastal Storms Program (CSP): find out what local communities need and help them address those needs with NOAA resources
- 4 pilot projects: St. Johns River, FL, Pacific NW, Southern CA, Gulf of Mexico (2008)
- Improved prediction of winds, waves flooding – WARF and SWAN models (model local conditions such as fog and nearshore conditions)
- Improved oceanographic and meteorological observations
- Outreach and extension
- Data access and standards (database to bring meteorological observations into one place)

Florida:

- Risk and vulnerability assessment tool: interactive mapping, access to data, real-time hazard forecast data, used during hurricanes to notify people living in high risk areas
- Ecological assessment: identify ecological impacts of coastal storms (pesticides) and geographic locations of greatest risk, recommendations for mitigation
- Shallow water bathymetry: identification of navigations obstructions, updating navigational charts and modeling
- Circulation model: local resource that was tweaked to address other issues; provide real-time, physical conditions and forecasts, spill tracking
- Inland flood planning and response tool: real-time flood conditions and forecasts
- Pacific NW: On-line coastal inundation tool
- *Benefits: more accurate forecasts, decision support tools, less economic impacts*
- *Coastal No Adverse Impacts Handbook - looking for local planning examples*, June workshop

Mark Matulik:

No Adverse Impact and Mitigation Opportunities

- Association of State Flood Plain Managers (ASFPM) mission: mitigate the losses, costs and human suffering caused by flooding and protect the natural and beneficial functions of floodplains
- Is the 1% standard (100 year flood) appropriate for planning?
- \$6 billion annually in flood damages
- *What is influencing the trend of increased property at risk?*
 - *current policy promotes intensification in high risk areas*
 - *ignores changing conditions*
 - *ignores adverse impacts to existing properties*
 - *undervalues natural floodplain functions*
- even if NFIP minimum criteria standards were implemented in consistent manner, flood damages would continue to increase

- *existing approaches only address how to build in a floodplain, not how to mitigate damages*
- NAI addresses impacts of built environment on adjacent properties; ***broadens property rights by protecting property rights***
- Local government is the key: develop and adopt NAI community-based plans, adopt NAI strategies, educate citizens on the good neighbor policy
- State government: update EO, provide technical and planning assistance, adopt policies with incentives to encourage NAI
- Federal government: update EO, provide technical assistance, adopt policies with incentives to encourage NAI, evaluate how everyone measures success
- ***Community activities that can incorporate NAI: hazard identification, education, planning, regulations, mitigation, infrastructure, emergency services***
- 3 building blocks
 - Basic: what is done to meet NFIP minimum criteria
 - Better: prevents or minimizes adverse impacts on other properties
 - NAI: identifies the most effective ways under each building block to protect everyone's property and prevent increased flood problems (education to change people's attitudes and behaviors)
- ***What can you do? define adverse impact based on your communities' unique condition, evaluate hazards and programs, identify adverse impacts, require adverse impacts to be mitigated when development occurs***
- NAI Coastal Handbook will offer practical application of NAI concepts specific to hazards
- ***If we continue to encourage at risk development and ignore the impact to others, can we accept the consequences...and, are you willing to pay for it?***
- ***Mitigation opportunities:***
 - ***FEMA's Public Assistance Program provides assistance for hazard mitigation measures during the recovery process, specifically, the program provides assistance for: debris removal, implementation of emergency measures, and permanent restoration of infrastructure***
 - ***Develop and implement disaster-specific Mitigation Strategy in the public assistance program***
 - ***Overcome the "get it done as fast as possible" approach and generate thoughtful consideration of how mitigation can be incorporated into repair and restoration efforts***

Questions:

Q: What about mitigation on larger scale areas rather than individual homes?

A (Mark): Long-term planning initiatives coming out of governors' offices in LA and MS; anyone with an interest in issues needs to get on those committees

Q: Requirement that interstate hazard mitigation teams must be in the field before federal disaster funds can be given to the state?

A (Mark): It is the law, but mitigation often doesn't happen → get it done as fast as possible

Q: Demonstration project on repetitive losses? Cyclic problem.

Q: When looking at buildings to see what worked and what didn't and making recommendations, how long does that take to get into building code?

A (Rick): FL can amend the model building code directly (without going through the national process = 5-10 years) → expedited amendment process, consensus
1 year, 3 months after 2004 hurricanes, they were able to address some of the building code issues

Training to local code officials

Q: what about metal roofs? Hip or gated roofs?

A (Rick): Hip structure more sound, do better; metal roofs built under new standards do very well

Problem with standards for coastal construction: do not require stainless steel

- Needs/Problems
 - Establishing effective building codes (FL cannot discriminate against materials or methods; can set up standards that would limit what can be used), need more state rather than local control, need to update codes in a time-sensitive manner
 - Need real-time data and forecasting ability
 - existing approaches only address how to build in a floodplain, not how to mitigate damages
 - trend of increased property at risk because: current policy promotes intensification in high risk areas, ignores changing conditions, ignores adverse impacts to existing properties, undervalues natural floodplain functions
- Opportunities/Lessons Learned
 - After Andrew, state able to usurp local control and able to regulate the licensing of building inspectors
 - Coastal construction control line and coastal building zone – lowest structural member must be above the wave height line (above the NFIP standard)
- Policy Implications
 - Coastal Storm Program offers a tool for providing more accurate forecasts, decision support tools, reducing economic impacts
 - State and federal governments should update EO, provide technical assistance, adopt policies with incentives to encourage NAI, evaluate how everyone measures success
 - FL can amend the model building code directly (without going through the national process = 5-10 years) → expedited amendment process, consensus so timeframe is 1-1 ½ years, training occurs during process
- Unanswered Questions
 - How to address repetitive loss issue

- Requirement that hazard mitigation teams must be in the field before federal disaster funds can be given to the state, but doesn't happen that way (get it done as quickly as possible issue)