Emergency Manager’s Role in Implementing EHPAs in New Schools
Presenter

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Purpose of Educational Facilities

- Public educational facilities
  - primarily serve educational purpose
  - secondarily the social and recreational purposes of the community

- Public shelter function
  - Secondary purpose
  - lawfully authorized purpose that can preempt school activities in declared emergency
What is an EHPA?

• Public Shelter Design Criteria
  – Section 423.25, Florida Building Code

• Enhanced Hurricane Protection Area (a.k.a., EHPA)
Authorities of Emergency Managers

- Consultation with applicable Board
- Determination of shelter capacity space requirements
- Surplus or deficit
- Shelter survey program
- Statewide Emergency Shelter Plan
- Exemptions
Authorities of Emergency Managers

- It is unlawful and a violation of the Florida Building Code for a board to exempt a new facility from the EHPA criteria without written concurrence of the applicable local emergency management agency or DCA.
Definition of an EHPA?

- A public educational facility, or an appropriate area within a facility, which is designed and constructed in compliance with section 423.25, Florida Building Code
EHPA Applicable To:

- Public K-12 schools and community colleges
- Universities have similar requirements
- “New Construction”
  - Entire work is “new”, per section 423.5.8, Florida Building Code
  - Includes replacement bldgs, additions, and new bldgs on existing campuses
  - Also includes re-use or prototype plans
EHPA Criteria

- Comprehensive set of criteria designed to ensure new school buildings can serve as emergency shelters
- Consistent with ARC 4496
- Consistent with ARC 3041
- Consistent with DEM hurricane shelter survey program
EHPA Criteria (Cont’d)

• **EHPA Occupancy**
  - Eight hours @ maximum capacity
  - DEM recommends 24 hour design

• **Site Requirements**
  - Emergency Access
  - Landscaping
  - Parking
  - Signage (internal only)
EHPA Criteria (Cont’d)

- 50 percent of Net Square Feet of a designated facility shall be constructed as an EHPA
  - Excluded Spaces
  - Included Spaces (any area that is not excluded)
- Percent EHPA can be adjusted with concurrence of emergency management agency
- Occupant capacity based upon 20 sq.ft./person
EHPA Criteria (Cont’d)

- Included spaces can be:
  - in a single large room, or multiple smaller rooms
  - on more than one story
  - on upper floors of multistory bldgs
  - on floor immediately below roof
  - in more than one bldg on a campus
• **Plumbing Requirements**
  - Consult ARC 3041
  - 1 toilet & sink per 40 occupants
    - Fixed or portable units acceptable
  - Showers not required
  - Potable water
    - 1.7 gals per occupant (5 gals/day)
  - Waste water
    - 1.7 gals per occupant (5 gals/day)
    - FEMA CPG 1-20 recommends design capacity x 1.50, or 2.5 gals per occupant (7.5 gals/day)
EHPA Criteria (Cont’d)

- **Food service**
  - Consult ARC 3041
    - Except Dining Areas usable as shelter space
  - Countertop for food distribution recommended
  - “Bag lunches” or heavy snacks OK
    - 833 calories per occupant (2,500 calories/day)
    - 1.2 lbs food per occupant (3½ lbs/day)
EHPA Criteria (Cont’d)

• **Structural Standards**
  – *Wind load per ASCE 7 design standard*
    • Minimum: base wind speed with Category IV importance factor
    • Meets ARC 4496 standards
    • Recommended: base wind speed plus 40 miles per hour increase
      – Achieves “major hurricane” design performance
    • DEM recommends Exposure “C”
EHPA Criteria (Cont’d)

- **Structural Standards**
  - Windborne Debris Impact
    - Minimum: SBC/SSTD 12 (9 lb @ 34 mph)
    - Others: ASTM E 1996 and FBC High Velocity Hurricane Zone TAS 201
    - Entire envelope must meet impact standard
    - DEM recommends large missile requirement up to 60 ft. above ground
    - Enhanced: DOE-STD-1020 (15 lb @ 50 mph)
• **Structural Standards**
  - Foundation and floor slab
    - Floor must be elevated to or above maximum Cat. 4 storm surge
    - Elevation determined by SLOSH
  - **Structural Certifications**
    - Essential, but rarely available
    - Necessary for wind design, impact criteria and EHPA floor elevation
• Electrical & Emergency Power
  – Backup Generator is **not** required by EHPA criteria
  – **Generator pre-wiring** is required
    - Emergency lights, exit signs and fire alarm systems, fresh air ventilation
    - Minimum rating is 1½ hours
  – No statutory or code requirement for emergency managers to provide back-up generator
EHPA Criteria (Cont’d)

- Emergency Management Considerations
  - Shelter manager’s office required
    - Provision for standby power, lighting, communications, fire alarm panel, and four electrical outlets
    - Per ARC 4496, recommend 40 sq.ft./staff and storage
  - ARC 3041 recommends additional space allocations
Exemption Criteria

• Location
  – Cat. 1, 2 or 3 hurricane evac zones
  – Hurricane rainfall or storm surge flooding or isolation
    • Closed-basin, riverine, dam or reservoir failure, Cat 4/5 evac zone
  – Coastal Barrier Island
  – Certain hazmat evac zones
  – Low evacuation demand
  – Regional surplus of “safe” space capacity (i.e., meets ARC 4496)
Exemption Criteria (cont’d)

• **Size**
  - Hurricane shelters range from 50 to several thousand spaces
  - DEM recommends 2,000 sq.ft. minimum; ref: s. 252.385(4)(b), F.S.

• **Other Considerations**
  - Normal function or availability incompatible with public shelter operations
  - Local sheltering plans and strategies
Exemption Criteria (cont’d)

- Alterations or maintenance of existing buildings
  - Remodeling
  - Renovations
  - Maintenance and repairs

- Certain substantial “remodeling” projects may be appropriate for EHPA criteria
Not Valid Exemptions

- Increased cost of construction
- “three-mile” exemption
- “core facility” confusion
- School Infrastructure Thrift (SIT) Program
- Certain Charter Schools
Responsibilities of Emergency Managers

- Advocate for "safe" shelter program objectives
- Proactive communications with Board
- Provide consultative assistance for compliance with EHPA criteria/code
- Working knowledge of applicable statutes and codes
- Accurately quantify shelter capacity space requirements
- Statewide Emergency Shelter Plan
- Validate exemption requests
Responsibilities of Emergency Managers

Encourage Practical Solutions
• QUESTIONS ?