Increasing Popularity of Community Tornado Shelters and Safe Rooms

- **Alabama:** “Although there are nearly 50 storm shelters in Morgan, Limestone and Lawrence counties, government officials say there’s a need for more and they’re worth the cost.” – www.decaturdaily.com
- **Arkansas:** “All nine Conway Elementary Schools will have a storm shelter.” – www.thv11.com

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- **Kentucky:** “On Friday, Warren County Fiscal Court voted unanimously…to build shelters at Ed Spear Park in Smitha Grove and Phil Moore Park near Alvaton. The shelters, which will hold about 300 people and withstand winds up to 250 mph, will be paid for largely through a… mitigation grant from the Federal Emergency Management Agency.” – www.bgdailynews.com
- **South Dakota:** “Members of the town board gave an update on the completion of two storm shelters at their regular meeting last week at the Delmont Community Center. The installation of the safe rooms is part of a long-term recovery project after the small town was struck by a devastating tornado.” – www.mitchelrepulic.com

Why the Increase in Popularity of Community Tornado Shelters and Safe Rooms?

- Assessing risk: perception of risk and vulnerability
- Availability of information, resources, and funds
- Thinking more as a community

Perception of Risk and Vulnerability

Everyone has their own perception of risk and vulnerability – and every community does too.

What contributes to an individual’s or a community’s assessment of risk?

- Perceptions
  - It won’t happen to me...
  - It can happen to me...
- Experiences
  - It did happen to me or someone I know...
- Joplin, MO tornado
Joplin, MO Tornado

- A 0.75-mile-wide tornado cut a 6-mile path through Joplin, MO, on May 22, 2011
- 161 fatalities, thousands of homes destroyed, widespread damage
- The most fatalities ever recorded from a single tornado since modern record keeping began in 1950

Joplin High School

Joplin, MO Response

- Since July 2012, 97 FEMA tornado community safe rooms have been completed across Missouri
- Joplin schools now have 14 community safe rooms

Figure source: Joplin High School

Thinking More as a Community

Community safe rooms at schools are becoming a popular option
- Joplin has 14 community safe rooms at schools available to the community during a tornado warning and/or when the tornado sirens have sounded
- Opening a safe room at a school to the surrounding public requires additional planning that is addressed in the Operations and Maintenance (O&M) Plan

Safe Room O&M Plan Objectives

- Identify operations and maintenance practices to ensure the safe room remains functional and available for immediate use
- Effective O&M plans cater to the intended shelter occupants
  - More “guesswork” for a safe room open to the general public
  - More redundancies may be needed for safe rooms open to the general public

O&M Plan Considerations for Community Safe Rooms

- Objectives and Parameters
- Staffing and Personnel Consideration
- Community Outreach and Notification
- Emergency Provisions
- Access and Entry
- Operations During Event
- Operations Post Event
- Maintenance

Unique Operational Challenges for Shelters Open to the General Public

O&M Plan considerations significantly affected if a community safe room is open to the public include:
- Community Outreach and Notification
  - Alerts and drills
  - Hours of operation
  - Pet policy
  - Signage
  - Parking
  - Operations during the Event

How is your intended shelter occupant population determined?

How do you anticipate the general public’s needs?

Planning for a public shelter?

Example O&M Plans available on the FEMA website
Staffing and Personnel Considerations

- Need to clearly define roles and responsibilities:
  - Who will be involved during the school day?
  - Who will be involved after school hours?
  - Contact lists need to be kept up-to-date and should include back-up personnel
  - Staff training needs may be different for a community safe room open to the general public.

Community Outreach and Notification

- Outreach to intended occupants can be through:
  - Mass mailings and flyers
  - Mass text alerts and social media
  - Meetings
  - TV, radio, signs
  - Drill exercises
  - All potential occupants should be notified of safe room location and policies

Community Outreach and Notification

Sample Safe Room Rules and Procedures

- Figure source: Joplin Schools Community Safe Room Rules & Procedures, https://docs.google.com/document/d/1kN8yHvDywfheHpdKEC9IM70OTn76JPnh2fZ-kwSZMGY/edit, visited December 2018
- Figure source: Joplin Schools Facebook page, https://www.facebook.com/joplinschooldistrict/, visited December 2018

Alert Signals and Drills

- Warning signals need to be distinct and understandable
- Need to also reach occupants with hearing problems, vision problems, or limited English proficiency
- Conduct regular drills (at least annually)
  - THE TORNADO SIGNAL WILL BE ONE LONG CONTINUOUS BELL.

Expectations of Safe Room Use During Off Hours

- Notify potential occupants when the safe room will and will not be available
- Policies should be stated in the O&M plan and clearly communicated to potential occupants
  - Will a school safe room be accessible during non-school hours?
  - At places of business, will the safe room be accessible after normal work hours?

Pets Policy

- Safe rooms are typically not designed to accommodate pets
- Include pets policy in O&M plans and notify potential occupants
- Special considerations may include:
  - Separation distances
  - Animal size limitations
  - Owner provided pet carriers
Signage
Need to be clearly visible to alert community to:
- Presence of safe room
- Intended occupants
- Maximum occupancy
- Travel route
- Location of door
May be necessary to include signs in languages other than English

Parking
- O&M Plan should explain procedures and instructions
- Plan specifics based on assumptions of intended occupants
- Test effectiveness and traffic flow through drills
- Revise plans as needed following drills and actual events

Entrance to Safe Room
- O&M Plan should explain procedures and instructions
- Identify staff to unlock safe room: primary and backup role
- Remotely operated lock option:
  - Can be triggered by Tornado Watch alerts
  - Can be efficient solution
  - Should be tested through drills

Operations During Event: Registering Occupants
- Enable operators to identify which occupants may have specialized needs
- Should not impede entrance process
- Locking down the safe room needs to be done before weather poses a threat
- Enables operator to account for occupants post-event
- May help inform updates needed to O&M plan from lessons learned

Emergency Provisions
Food and water
- Due to short duration of occupancy for a tornado, stored food is not a primary concern
- Provision of water should be addressed in the O&M plan

Emergency supplies
- For safety and wellbeing of intended occupants
  - General public could have a wide variety of needs

Operations During Event: Security
- Prevent unauthorized entry
- Control movement of people
- Secure hazardous or prohibited areas
- Prevent unauthorized exit before lock-down ends
- Medical care facilities should:
  - Secure medical and pharmaceutical supplies
  - Secure intensive/critical care areas

Who should be in charge of security?
Operations During Event

First Aid and Health Services
- Trained and certified staff should be available to administer first aid as needed
- Know potential occupants health needs – more difficult for general public
- Send out a survey to the potential occupants

Availability of Information, Resources, and Funds

Information is readily available online, for example:
- FEMA P-361
- Various FEMA fact sheets
- FEMA Safe Room Helpline
- FEMA’s Hazard Mitigation Grant Program
- Storm shelter organization websites

Questions?

Saferoom@fema.dhs.gov

A Changing Paradigm:
The Proliferation of Public Tornado Shelters Brings New Challenges

QUESTIONS?

Marc Levitan marc.levitan@nist.gov
– National Institute of Standards and Technology
Kurt Hondl Kurt.Hondl@noaa.gov
– NOAA-OAR National Severe Storms Laboratory
Pataya Scott pataya.scott@fema.dhs.gov
– FEMA Building Science Branch