



Multi-Jurisdiction Hazard Mitigation Plan Update Initial Planning Meeting

Today's Agenda



- Introductions
- Steering Committee & Working Group
- Hazard Mitigation Planning Overview
- Work Plan / General Schedule
- Data & Information Needs
- Next Steps
- Project Administration
- Next Meeting / Action Items

Welcome and Introductions



- Sussex County Steering Committee
- Sussex County Working Group
- Sussex County Emergency Operations
- Participating LEPC Members
- Special Districts and Organizations
- Contractor Team

Welcome and Introductions



- Name, Position, Organization
- Previous Experience in Hazard Mitigation Planning or Implementation?
- Specialized area for inclusion within the plan update



Multi-Jurisdiction Hazard Mitigation Plan Update Overview



Project Types Review

Potential Mitigation Projects



“Soft” Mitigation Projects:

- Building code enforcement
- Land development regulations
- Public education
- Studies and plans
- More...



Potential Mitigation Projects



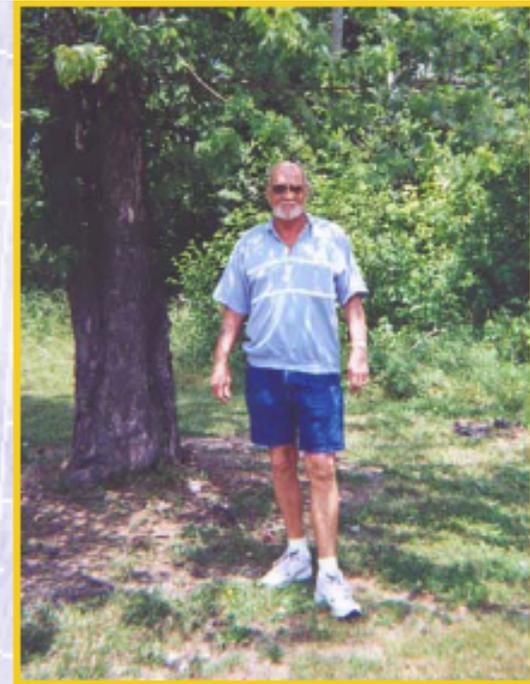
“Hard” Mitigation Projects or “Property Protection” Construction:

- Acquisition / elevation / mitigation reconstruction of structures
- Retrofits for high wind loads such as installing hurricane shutters
- Improving drainage
- More...

Acquisition



- Most cost-effective mitigation measure.
- Permanently removes vulnerable property from the floodplain.

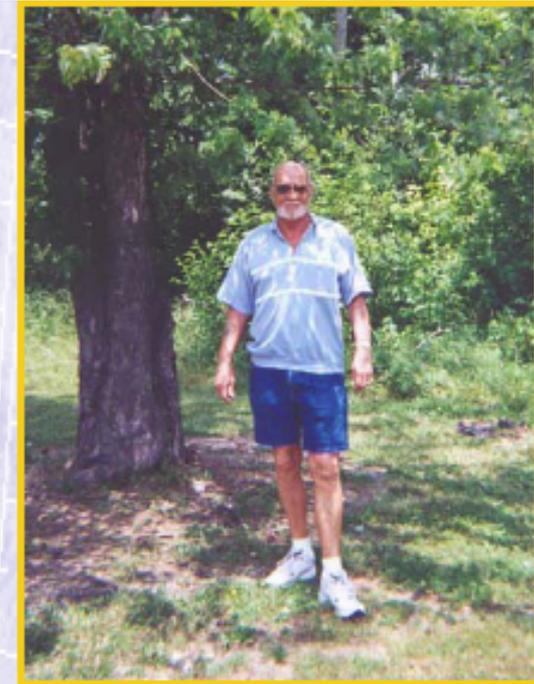


"No way did I want to sandbag again," says Joe Moore, visiting the site where his house once stood. "1993 was my last flood."

Acquisition



- The structure is demolished or relocated and the land is dedicated as open space in perpetuity.
- Requires willing sellers and communities.



*"No way did I want to sandbag again," says Joe Moore, visiting the site where his house once stood.
"1993 was my last flood."*

Elevation



- Raising a structure above the Base Flood Elevation.
- Building size, structural integrity, and type of foundation must be considered.
- There are different types of elevation which can be used depending on the structure.



Top Picture: A house in Miami in the process of being elevated.

Bottom Picture: That same house once completed.

Taken from FEMA, *Above the Flood*, 2000

Mitigation Reconstruction



- Pilot program funded under Disaster Declarations 1603 and 1607 (Hurricanes Katrina and Rita)
- If acquisition and elevation are not feasible then a structure may be demolished and reconstructed at the same location meeting current construction codes and standards.

Hardening or Retrofitting of Critical Facilities



Potential Projects for public buildings, hospitals and health care facilities, utilities, police stations, fire stations, emergency operations center, jails and detention centers, and schools:

- Install shutters or impact resistant glass on windows
- Strengthen the doors.
- Install hurricane straps and clips to strengthen roof.
- Bolt walls to foundation.
- Relocate utility lines underground.
- Elevate the heating, ventilating and cooling (HVAC) equipment, such as furnace and hot water heater.

Hardening or Retrofitting of Critical Facilities



Install Shutters or Impact Resistant Glass on Windows



Accordion Shutters



Roll-Down Shutters



Colonial Shutters



Impact Resistant Glass

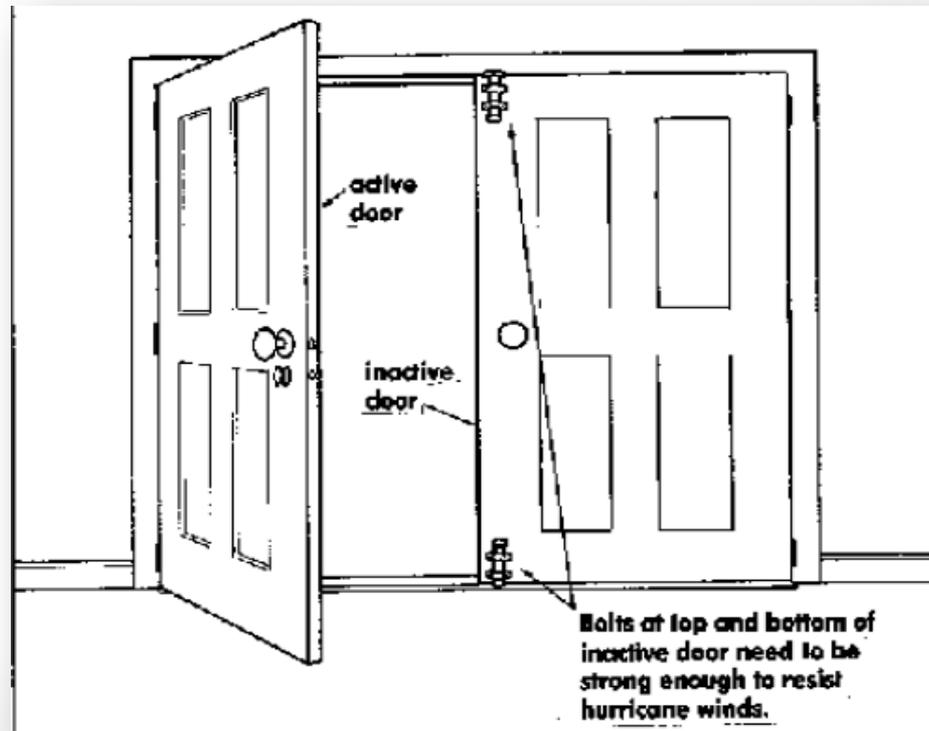


Corrugated Metal Panel

Hardening or Retrofitting of Critical Facilities



Strengthen the Doors

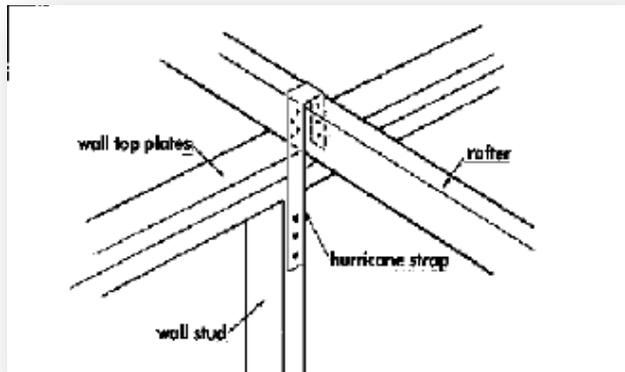


From *Against the Wind*

Hardening or Retrofitting of Critical Facilities



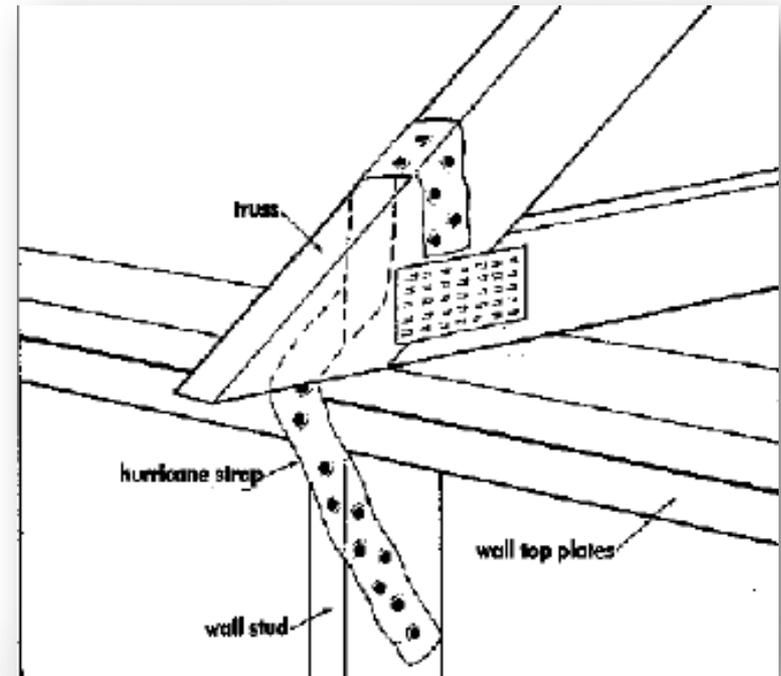
Install Hurricane Straps and Clips to Strengthen the Roof



From *Against the Wind*



From *The Advocate*



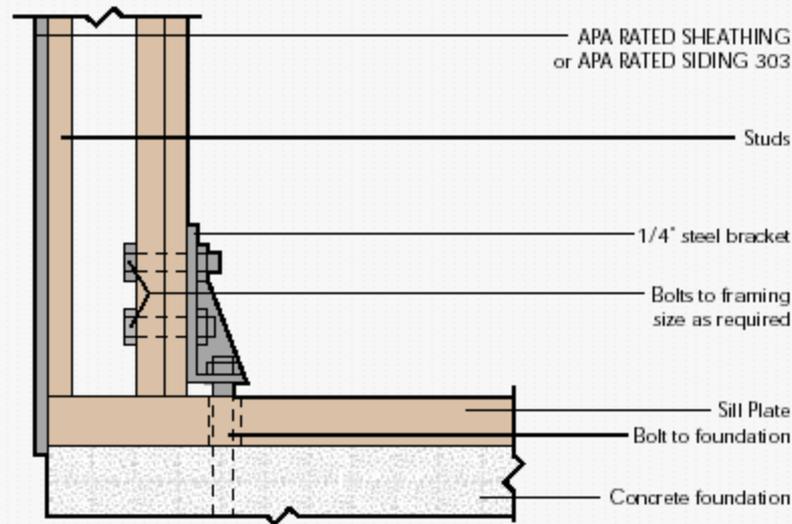
From *Against the Wind*

Hardening or Retrofitting of Critical Facilities



Bolt Walls to Foundation

Figure 4
SHEAR WALL HOLD-DOWN ANCHOR



From www.townparkconstruction.com

Hardening or Retrofitting of Critical Facilities



Relocate Utility Lines Underground



Fallen utility lines after Wilma. From www.galtmile.com

Hardening or Retrofitting of Critical Facilities



Elevate The Heating, Ventilating and Cooling (HVAC) Equipment, Such as Furnace and Hot Water Heater

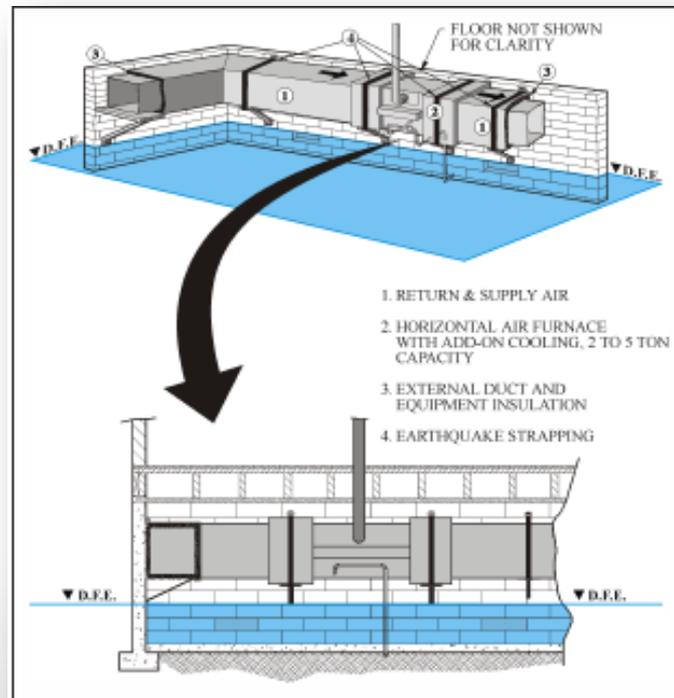


Figure 3.1.4A: Elevation of HVAC components below a floor, but above the DFE

Hardening or Retrofitting of Critical Facilities



Potential projects for pump stations, water control facilities, water treatment and delivery systems, power generation facilities, sewage collection and treatment facilities:

- Install backflow valves.
- Elevate the generators and pumps.
- Anchor fuel tanks.
- Eliminate infiltration problems with underground utility systems.

Drainage Improvements



- Creating detention/retention ponds and reservoirs.
- Building floodwalls and diversions.
- Constructing storm sewers and increasing culvert capacity.
- Maintenance is not an eligible project.



Retention Pond in North Carolina

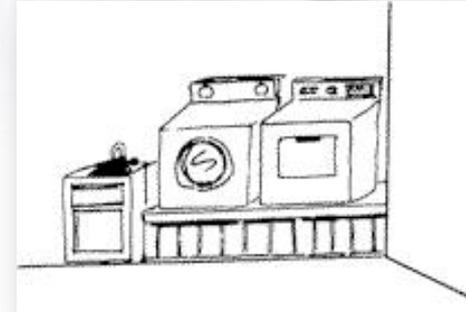


A culvert

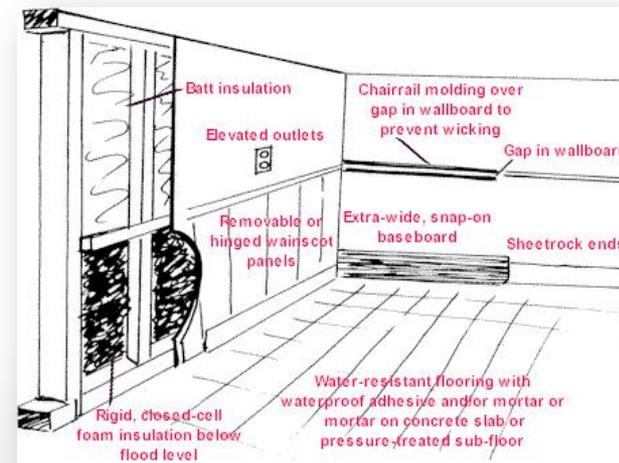
Wet Floodproofing



- Modifying uninhabited portions of the structure to allow floodwaters to enter without causing significant damage.
- Materials must be water resistant.
- Not practical for most slab-on-grade structures with living space near ground level.



Elevated Appliances from www.louisianafloods.org

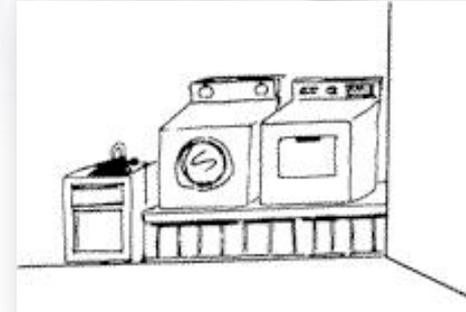


From www.louisianafloods.org

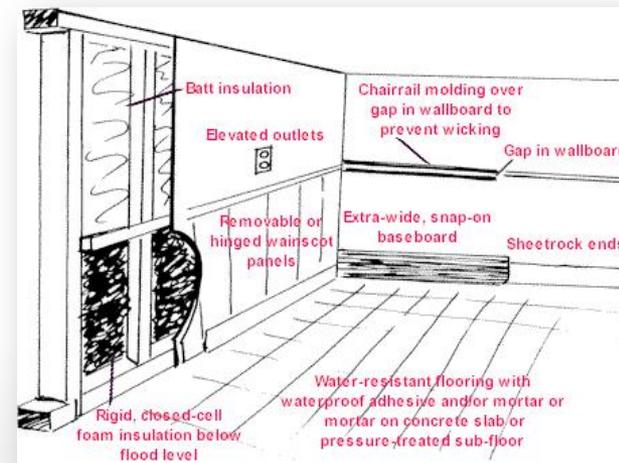
Wet Floodproofing



- Does not reduce damage from high velocity floods.
- Only appropriate in limited situations.



Elevated Appliances from www.louisianafloods.org

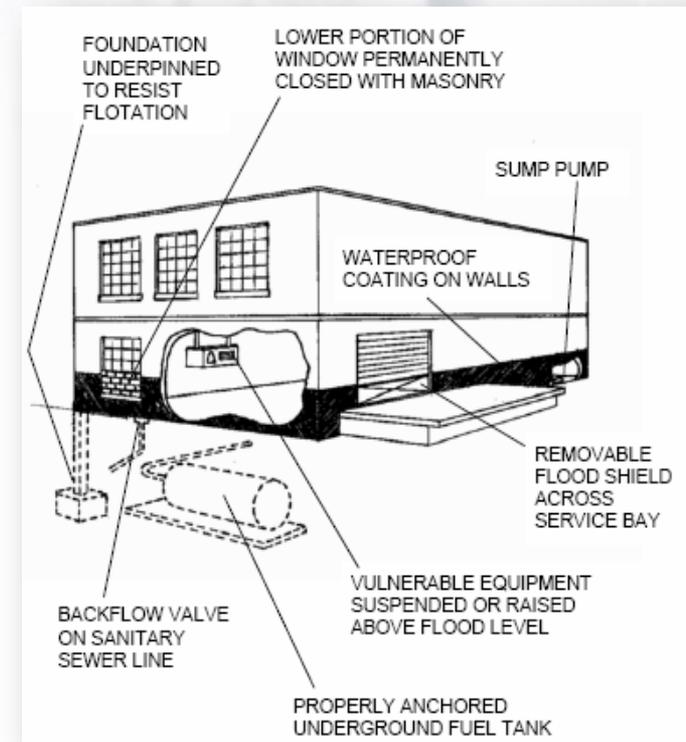


From www.louisianafloods.org

Dry Floodproofing



- Making the structure watertight below the level that needs flood protection.
- Requires sealing the walls and providing waterproof closures for any openings such as doors.

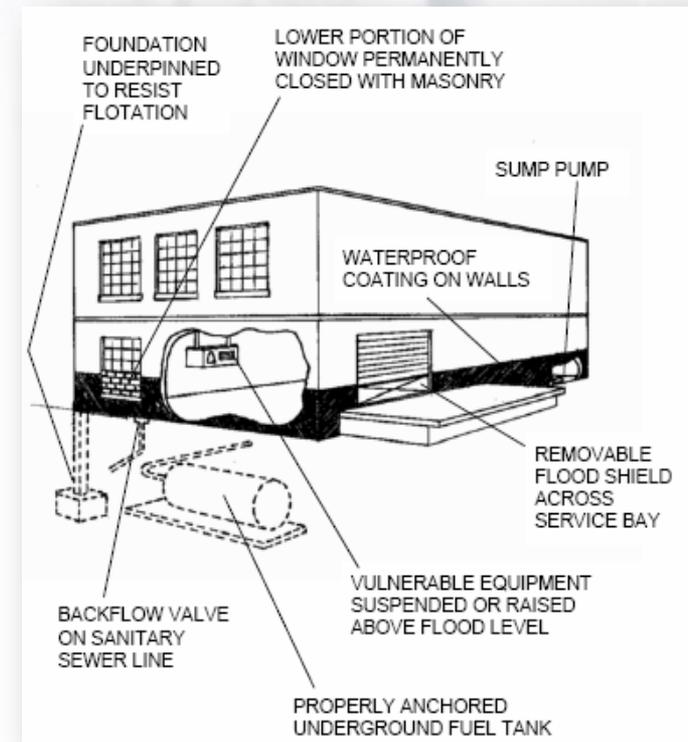


From FEMA, *Protecting Your Business from Flooding*

Dry Floodproofing



- Effective for low duration flooding with depths under 3 feet.
- Not effective for high velocity flooding.

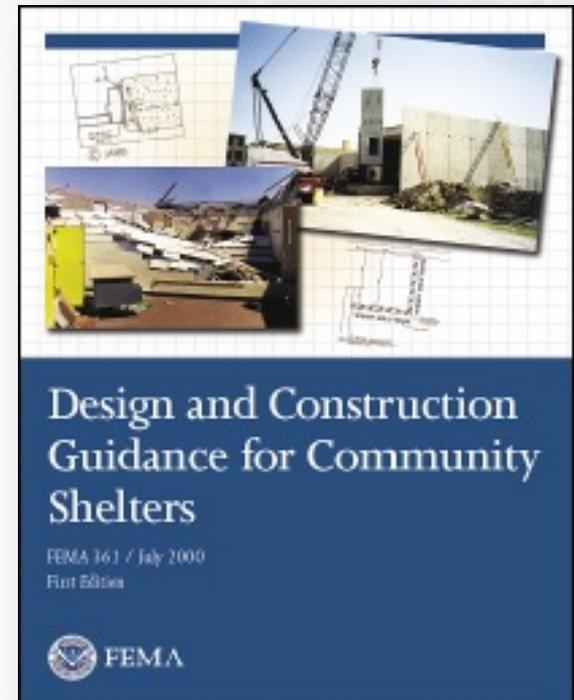


From FEMA, *Protecting Your Business from Flooding*

Community Shelters



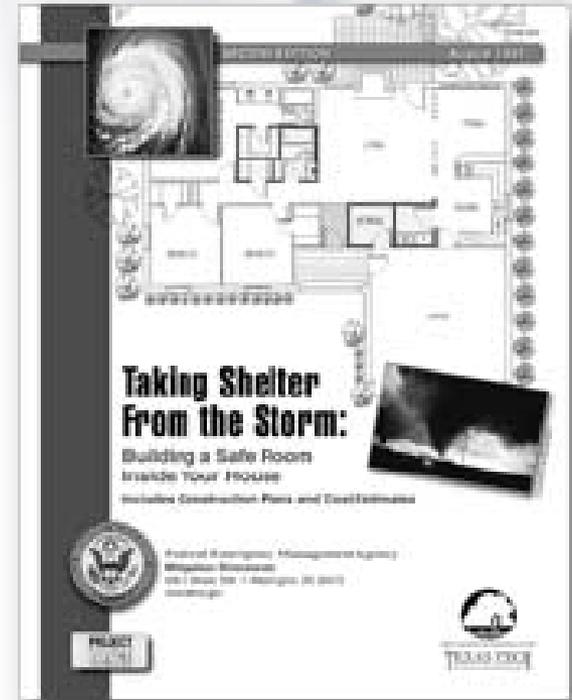
- A structure built to withstand extreme winds and flying debris from tornadoes, hurricanes, and other storms that is accessible to the public.
- Guidelines can be found in FEMA 361.
- The shelter cannot be used for anything else.



Safe Rooms



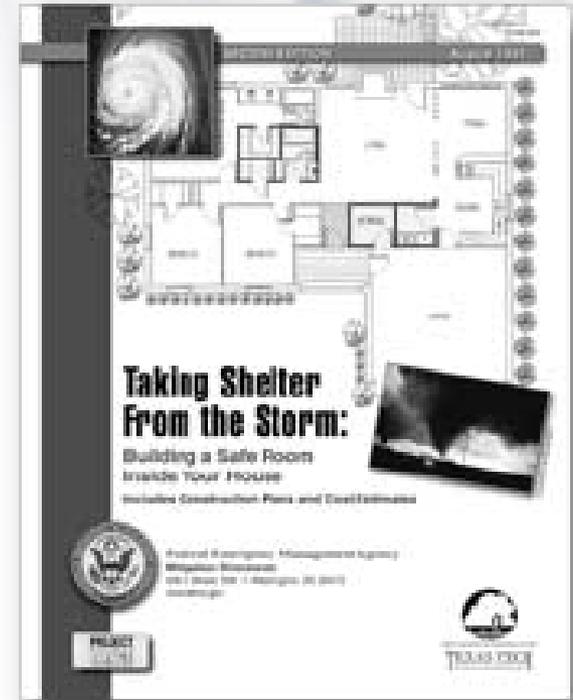
- Can be built on-site, or manufactured.
- Can be installed in new or existing homes.
- Must have adequate ventilation.
- Guidelines are outlined in FEMA Publication 320



Safe Rooms



- Must be securely anchored to the foundation and structurally isolated from the main structure.
- Can be on the first floor, in a basement, or outside.
- Guidelines are outlined in FEMA Publication 320



5% Initiative Mitigation Projects



5% Initiative Projects eligible for funding can include new, unproven mitigation techniques and technologies where benefits are not proven or not clearly measurable:

- Generators; or
- Disaster warning equipment and systems.



Municipal Participation

Municipal Participation



- Responding to data and document requests
- Completing Capability Assessment
- Reviewing and editing Critical Facility inventories
- Project review, identification and prioritization

Municipal Participation



- Attendance at regularly scheduled local Mitigation coordination meetings
- A commitment to read plan materials and to participate in the joint planning process
- Plan adoption (at the end of the process)

Municipal Participation



Implications

- Pre-disaster hazard mitigation grant programs
- Post-disaster public assistance and hazard mitigation grant programs



General Schedule

Project Management	Continuous throughout project	Officer Frequent communication and prompt reply to email and phone calls
Task 1 – Conduct Project Kickoff Meeting	Conducted within two weeks of contract execution	<ul style="list-style-type: none"> Review scope of project Identify a steering committee/planning team Refine project schedule
Task 2 – Review Documents	Weeks 2 through 4	<ul style="list-style-type: none"> Review existing HMP Review floodplain/other pertinent ordinances Review other documents (e.g. land use, zoning, etc.)
Task 3 – Conduct Stakeholder Kick-off Meeting	<ul style="list-style-type: none"> Week 5 	<ul style="list-style-type: none"> Introduce the project to public and private stakeholders Provides first opportunity for municipal participation Sets the stage for the planning effort
Task 4 – Update Risk Assessment	<p>Week 6 - Review with steering committee</p> <p>Weeks 7-Public Meeting</p>	<p>Update risk assessment</p> <p>Produce hazard maps</p> <p>Review during public meeting</p>
Task 5 – Review and Update Mitigation Strategy	<ul style="list-style-type: none"> Week 9 - Review with steering committee Week 10-Public Meeting 	<ul style="list-style-type: none"> Update status of mitigation projects Identify new projects for County/municipalities
Task 6 – Complete Revised Draft	Week 13 - Draft complete	<p>Incorporates new risk assessment/mitigation strategy</p> <p>Update all other plan parts</p>
Task 7 – Review and Finalize Updated Draft	<ul style="list-style-type: none"> Week 15 - Review with steering committee Weeks 16 thru 19 Mandatory public comment period Week 20 - Public meeting 	<ul style="list-style-type: none"> Ensure consistency throughout document Make necessary changes
Task 8 – Submit Draft to DEMA	<ul style="list-style-type: none"> Week 21 - Submit draft 	<ul style="list-style-type: none"> Submit via appropriate means (e.g. hard copy, electronic, etc.)
Task 9 – Submit Draft to FEMA Region IV	<ul style="list-style-type: none"> Week 23 - Submit draft 	<ul style="list-style-type: none"> Submitted after initial review by DEMA
Task 10 – Facilitative Adoption	Targeted for Week 27 - Following “received pending community adoption”	<ul style="list-style-type: none"> Present to County/municipalities for formal adoption
Task 11 – Conduct Close-out Meeting	<ul style="list-style-type: none"> Week 27 - 29 	



Work-in-Progress

Work-in-Progress



- Data/Information Requests
- Public Participation
- Hazard Identification Review
- Hazard Profiling



Next Steps

Municipal Participation



Implications

- Pre-disaster hazard mitigation grant programs
- Post-disaster public assistance and hazard mitigation grant programs

Next Steps



- Data Acquisition
- Review of Current HAZUS
- Hazard Identification Review & Profiling
- Capability Assessment Survey

Project Administration



- Force Account / In-Kind Services Documentation
- Monthly Progress Reporting

Meeting Schedule



- Steering Committee Meetings
- Working Group Meetings
- Public Hearings



Questions and Comments