

Special Post Disaster Information

Build Back Safer & Smarter

The hearts and prayers of all of us at the Natural Hazard Mitigation Association go out to the many people, businesses and communities currently suffering from the damages being inflicted by Hurricane Florence. We also have an important message for affected residents and communities. Please do not rush to go straight back to “normal.” **Take steps now, to build back safer, smarter, and in a manner designed to reduce misery for future generations. Rebuild so the danger and damage from the next disaster will be lessened.**

Residents and local officials in the areas hit by the recent flooding are and will continue to preserve what they can and start rebuilding their damaged homes and businesses to get back to normal as soon as possible. The problem with getting back to “normal” is that the areas flooded will inevitably be hit again, quite possibly by a larger flood or hurricane.

In some cases following the devastation wrought by other hurricanes and disasters, community leaders did not rush to return to normal. They stopped and thought about a smarter course. They developed plans to mitigate the effects of future hazard events.

This paper offers nine simple steps that can be taken now, to begin a process of building back smarter through hazard mitigation. More details on some of these steps can be found on NHMA’s website, www.nhma.info.

A webinar explaining this concept is available at: <http://recovery.stormsmart.org/webinar/>

Step 1: Know the rules.

Most communities have adopted building codes that require reconstruction to meet certain standards, including standards that protect from wind, water, earthquakes, and other natural forces. Enforce these codes to protect people from the next disaster.

Most flood-prone communities in our Nation participate in the National Flood Insurance Program. As a condition of receiving Federally-backed flood insurance, these communities are committed to properly regulate reconstruction in floodplains. The most important regulation is that if a building in the floodplain is substantially damaged by any cause (flood, wind, fire, etc.), it must be rebuilt and protected from flooding to the same standards as a new building in the floodplain. “Substantially damaged” means that the cost to repair is 50% or more than the value of the building before it was damaged.

The substantial damage rule means that every damaged building in the floodplain must be assessed before it can be rebuilt. This does not mean a rapid “windshield” survey. FEMA has software for these assessments and offers training programs to local officials after disasters.

It also means implementing some mitigation measures during reconstruction.

Step 2: Adopt higher standards for redevelopment and future development.

Will the current rules be sufficient? It’s long been recognized that the development criteria of the National Flood Insurance Program are minimums and those minimums will likely not be adequate for your community or your home or business. Severe floods have led communities to enact higher standards, such as prohibiting residences or

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other buildings from high hazard areas, requiring a higher level of protection, and zoning areas to limit development to those uses that are compatible with the hazards.

A key higher standard to consider adopting is to treat all areas that were flooded as the regulatory floodplain. That means that if a building is substantially damaged it will be protected to the current ordinance protection level or to the recent flood level, whichever is higher. Just because it was not mapped by the National Flood Insurance Program does not mean it cannot be regulated by the community. Mother Nature doesn't read those maps. If a property was flooded, the community owes it to the owners to help protect them from a recurrence of that flood, even if it is not required by the NFIP.

Higher standards are even more important now that we have recognized that the climate is changing and disasters are becoming more frequent and more severe. Build to protect homes, schools, and neighborhoods from the future floods that will likely be higher, rather than past floods.

To determine what is adequate to protect future development from local hazards, review safer alternatives instead of relying on minimum nation-wide standards.

FEMA, by the way, recognizes that higher standards save money, and has several mechanisms to provide lower insurance premiums for properties and communities that use them.

Step 3: Commit to mitigate.

Publicly commit to making your community safer in the future. This can be in the form of a resolution or announcement to indicate that for the sake of future generations, this generation will commit to doing a smart job of redevelopment. See that everyone is told about the rules and reassure citizens that steps are being taken to make people, homes and neighborhoods less vulnerable to hazards. Acknowledge that those steps will take some time and that people in the worst hit areas should not plan to move back in until a recovery and mitigation plan is developed that will determine how areas can best be safely redeveloped.

Step 4: Screen damaged areas.

It is important to quickly determine where people can make repairs and where reconstruction needs to account for mitigation opportunities. Where large areas are affected or the time is tight, a rapid building condition assessment can collect some preliminary data needed to help set priorities. Use the assessment to categorize properties into one of three categories:

Category A – Building apparently safe: No exterior signs of structural damage. People can be allowed back in, but they will need building permits for repairs.

Category B - Building obviously substantially damaged: It is gone, it has collapsed, or it is missing one or more walls. The building cannot be reoccupied without major structural work.

Category C – Building could be substantially damaged: It was flooded several feet deep and may be substantially damaged, but such damage is not obvious. More time and a closer assessment of this building is needed to determine its condition.

Step 5: Identify target areas for mitigation.

Consider areas with a good number of Category B and C buildings for an area-specific mitigation or redevelopment plan. Seriously consider not rebuilding the area. Assess the costs and benefits to public health, safety, and natural

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floodplain functions of clearing the area versus allowing it to be rebuilt. Preparing such a plan will likely take several weeks. Meanwhile advise residents and businesses in those areas that they can clean up their buildings and salvage what they can, but not to put money into reconstruction until the mitigation plan is finished and decisions are made.

Step 6: Involve ALL those affected in the planning.

Whether a building is repaired, improved, or demolished is not something that should be left solely to government bureaucrats or outside consultants. Involve all residents and businesses in the process that determines the future of their homes, businesses, and neighborhoods. A participatory planning process will ensure that all locally important factors are considered when decisions are made about whether a building or block is repaired or replaced. Factors such as the structure's historic value, the desires of the owners, and people's ties to others in the neighborhood are best understood by the people who live in the community.

The resulting neighborhood redevelopment plans will identify which areas have buildings appropriate for restoration, which areas have buildings that should be demolished and rebuilt, and which areas should be cleared and redeveloped or maintained as open space.

Step 7: Keep the public informed.

Using whatever approach works in your community, help citizens understand why they cannot immediately move back into their homes and businesses. Include an explanation of the substantial damage rule and that it allows for providing additional information and/or appealing a determination. Provide a means for all citizens to follow the community's efforts and the area mitigation planning work, and offer opportunities to participate.

Help residents understand safety precautions, mitigation measures, and the insurance claims and disaster assistance procedures. Active outreach will be necessary to instill in each person that they are responsible for their own safety and the protection of their own property from future losses.

Step 8: Ensure full repairs and reconstruction.

Should there be structures that can be repaired, make certain that local permit officials deem them safe and sanitary before anyone reoccupies them. That means in wet houses, everything that can absorb water or grow mold, especially insulation and wallboard, is removed, and wood frames are thoroughly cleaned, dried, and tested for bacteria and moisture before they are salvaged. There can be no shortcuts to restoring what can be preserved.

Step 9: Mitigate to the extent feasible.

Properties in those hazard areas that will not be cleared will not have 100% protection against all possible future hazards. But they can be "mitigated," i.e., rebuilt in ways that reduce the long term risk to life and property. Post-Disaster there is an entire "Patchwork Quilt" of programs available to assist in better, safer building and development. See:

http://nhma.info/wp-content/uploads/2017/10/Roadmap_20171001.pdf

Include mitigation in public information, especially to applicants for permits to repair. Explain the mitigation measures appropriate for different building types and different hazards, and that they are incorporated into each building before restoration and reconstruction are initiated, Examples include:

Elevate buildings on crawlspaces or with damaged foundations above flood levels on new, stronger, foundations.

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When replacing electrical components, elevate them above the experienced, or FEMA Base Flood Elevation (BFE), plus a margin for uncertainty. We recommend BFE + 4 Feet as a rule of thumb.

Evaluate damaged furnaces, air conditioners, and water heaters for possible replacement and elevate on platforms above the flood level.

When the walls and ceilings have been opened for cleaning, add structural ties for wind protection and install insulation to reduce the effects of heat waves and winter storms.

When replacing standard gypsum drywall, use a water resistant version.

When a roof is replaced, use impact resistant roofing for hail protection.

In cases of a substantially damaged building in a floodplain that had a flood insurance policy, a provision known as Increased Cost of Compliance can help finance code required mitigation measures, such as elevating the structure.

In sum, communities hit by the recent flooding will inevitably get hit again, quite possibly with a storm of higher magnitude and intensity; but, if communities follow the steps outlined above, damages, misery and loss of life will be reduced.

These steps have been proven to work. Communities that took the time to take these steps, to develop a long-term redevelopment plan with mitigation standards for the hardest hit areas, and to rebuild accordingly, are more resilient to the next hazard event.

For example, Conway, South Carolina, passed a re-building moratorium to allow leaders and residents to stop and think before they rebuilt after being flooded by Hurricane Floyd in 1999. The city prepared a redevelopment plan within two weeks that identified areas and properties to be (1) cleared, (2) mitigated, or (3) reoccupied after cleanup. Conway's mitigation resolution can be found at:

http://stormsmart.org/uploads/recovery-docs/council_resolution.doc

Conway prepared and distributed handouts, including one on [Repairing Flooded Buildings](#) and one with [Advice to Flooded Property Owners](#) on how they can proceed with repairs during the target area planning process. We recommend that others consider similar steps.

ADDITIONAL REFERENCES

Learn more about a safe and sustainable recovery through other relevant resources and references, such as:

Building Your Roadmap to a Disaster Resilient Future, at http://nhma.info/wp-content/uploads/2017/10/Roadmap_20171001.pdf

All materials on the NHMA website www.nhma.info such as:

- NHMA's recovery website pages
- "Well begun is half done" *Higher Standards for Future New Development or Redevelopment*
- *The "10 P's" of Post-Disaster Recovery*
- *Post-Disaster Funding Sources for Resilient Recovery*

Materials from the Association of State Floodplain Managers (ASFPM) including the ASFPM *No Adverse Impact (NAI) How To Guide for Planning*, which can be found at

www.floods.org/ace-images/PlanningFinal6_16_16.pdf

(Tool 3 is about post-disaster planning, i.e., determining whether certain heavily damaged areas should not be rebuilt and what standards should be used elsewhere.)

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For a local official pressed for time, we recommend starting on ASFPM's How To Guide at page 40 and stressing Step 2. Buy Time.

If there's a single message to promote, it's "stop and think" before hurriedly rebuilding just the way the neighborhood was before the damage. The desire to "return to normal" after a disaster is the biggest obstacle to effective mitigation.

Louisiana Floodplain Management Association

<http://www.lfma.org/>

Repairing Your Flooded Home, American Red Cross

https://www.redcross.org/content/dam/redcross/atg/PDF_s/Preparedness_Disaster_Recovery/Disaster_Preparedness/Flood/repairingFloodedHome.pdf

LSU Ag Center

http://www.lsuagcenter.com/topics/family_home/hazards_and_threats/floods_hurricanes