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# **Encouraging North Carolina Communities to Adopt Safer Floodplain Management Standards**

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## **INTRODUCTION**

The state of North Carolina faces extreme consequences from hurricanes and flooding. Between 1989 and 1999, there were 14 Presidential disaster declarations in North Carolina. Damage from Hurricane Floyd in North Carolina alone reached \$3.5 billion, and flood losses in the state continue to escalate even though the National Flood Insurance Program (NFIP) is now over 25 years old. As of June 2002, 95 of 100 counties and more than 345 municipalities in North Carolina participate in the NFIP. Officials in these counties and communities recognize the importance of protecting their citizens from the devastation a flood can bring. Many communities also recognize that meeting the minimum requirements for participation in the NFIP may not provide the level of protection their citizens need and deserve. Therefore, communities should consider adopting enhancements to their floodplain management standards to decrease their vulnerability to floods.

As the impacts of recent floods indicate, federal and state minimum standards are not enough for many areas. North Carolina shares a responsibility with local officials to protect the lives and property of its citizens from the effects of natural disasters. During a flood, the state provides such resources as food, shelter, logistical support, and financial aid to flood victims and to local agencies to help get businesses and residents back on their feet after the flood waters recede. Long before a flood occurs, however, there are opportunities for communities to keep businesses and residences out of harm's way. This means guiding new and improved development away from floodprone areas and ensuring that new homes and businesses in these areas are built to standards that minimize or eliminate flood risk. In short, this means managing floodplain development.

Ultimately, the responsibility for managing floodplain development is held at the local level. As such, North Carolina has and will continue to provide resources from which local officials can draw to assist in their efforts.

Planners, inspectors, floodplain administrators, and local professionals all need accurate, reliable flood maps that show what areas of their communities are the most floodprone. The state, in partnership with the Federal Emergency Management Agency (FEMA), is meeting that need with new Digital Flood Insurance Rate Maps and an on-line Floodplain Mapping Information System. Properly used, the new maps are powerful tools that support all of the requirements for compliance with current NFIP regulations.

### **MAKING SAFER FLOODPLAIN DEVELOPMENT A PRIORITY**

North Carolina's Floodplain Mapping Program, which is being conducted under a Cooperating Technical Partners (CTP) Program agreement between FEMA and the state of North Carolina, has actively engaged community representatives at all steps of the flood map development process. During the post-preliminary appeal period and the adoption process, the state has made a priority of encouraging and supporting the efforts of local officials to increase the level of flood protection in their communities above minimum standards.

Two tools have been developed to accomplish this goal: a guidebook for community officials, titled *Safer Development in Floodprone Areas* (final draft January 2002), and an accompanying brochure. As discussed in this paper, the guidebook provides local floodplain managers clear guidance to safer development practices. It answers why a community should adopt standards beyond the minimum federal and state requirements and discusses what a community can do to enhance flood damage prevention efforts. The brochure provides an introduction to floodplain management and summarizes the recommended standards in the guidebook.

### **RECOMMENDED HIGHER STANDARDS**

In addition to providing a framework of the NFIP's floodplain management building criteria, the guidebook discusses approximately 40 enhanced standards. It provides guidance on selecting the appropriate standards for a community, as well as the benefits, cost impacts, flood hazard mapping impacts, and model ordinance language for each recommended standard. Specifically, the guidebook recommends that a community consider the following developmental standards in four categories if they are more stringent than the current federal and state minimum criteria.

#### **Build it Up—Requirements for the Elevation of New Structures/Development**

Require structures and substantial improvements to be elevated above the base (1% annual chance) flood elevation (BFE); require elevation to freeboardheight for structures within the "freeboard contour;" regulate

floodplain development to flood elevations due to future hydrologic conditions; require elevation to or above high-water marks for flood of record; require elevation to or above predicted Category 3 hurricane flood elevations; require extra elevation for structures in A Zones; enforce elevation requirements for structures outside the Special Flood Hazard Area (SFHA) where grade is below the BFE; and require development in A Zones to be elevated at least five feet above highest adjacent grade.

### **Build it Out—Requirements for the Location of New Structures/Development**

Prohibit manufactured housing and recreational vehicles in V Zones; prohibit manufactured housing and recreational vehicles in floodways; increase width of regulatory floodways based on reduced surcharge values; and prohibit all new floodplain development unless it causes no rise or no impact.

### **Build it Safer—Requirements for Existing or Reconstructed Structures**

Use repetitive loss criteria to determine if a structure is substantially damaged; require enforcement of V Zone standards in coastal A Zones; limit the area of enclosures below the BFE; prohibit repair of damaged, non-compliant enclosures below the BFE; regulate development within community-established flood zones (e.g., where alluvial soil types predominate); prohibit enclosures below the BFE; require compensatory excavation for floodplain fill; and increase and/or disallow floodproofing requirements for nonresidential structures.

### **Other Safer Requirements**

Require flood elevation determination for development in A Zones or unstudied flooding sources; lower the threshold for substantial damage/improvement determinations; consider cumulative substantial damage/improvement determinations; implement a hazard mitigation plan; require mitigation for all repetitively flooded structures; require public and/or individual notices to those in the floodplain impacted by a proposed project; allow no variances; implement a flood warning program; require anchoring of fuel tanks; ensure mandatory floodplain administrator certification; and collect storm water impact fees.

## **CONSIDERATIONS WHEN ADOPTING HIGHER STANDARDS**

Insurance against property losses caused by flooding is available through the NFIP for owners of property both within and outside of regulatory floodplains in participating communities. First, within the SFHA, insurance premiums are

highest for structures whose lowest floors are below the BFE and progressively less as the lowest floor height increases above the BFE. Therefore, standards that require structures to be elevated to a specified height above the BFE result in direct savings to owners of structures that comply with the higher standard. Second, owners of property who build outside of the SFHA can obtain lower flood insurance premiums.

Property owners in communities participating in the NFIP that adopt safer standards have another way of potentially lowering their flood insurance premiums. The Community Rating System (CRS) allows for flood insurance premium rates to be adjusted in communities that participate in the CRS to reflect the reduced flood risk resulting from community activities that meet four goals: (1) reducing flood losses; (2) facilitating accurate insurance ratings; (3) promoting the awareness of flood insurance; and (4) enhancing the natural and beneficial functions of floodplains. Most of the recommended standards in the guidebook earn CRS points for participating communities by supporting one or more of these goals.

North Carolina is a diverse state. The geography, climate, and flood hazards vary significantly from one end of the state to the other. Some generalizations about which development standards are appropriate for a particular region of the state can be made and suggested to communities. Specific standards that will be influenced by regional differences include freeboard requirements, future conditions mapping, and restrictions on recreational vehicles in floodways. Flood history should also play an important role in a community's choice of higher standards. There may be areas that have experienced flooding that are not shown as floodprone on the community's flood maps. The community can adopt these areas as having a high flood risk and regulate development accordingly. Such areas might include those that are susceptible to debris-related flooding, areas with poor urban storm water drainage, and areas not directly associated with riverine or coastal flooding.

## CONCLUSION

Safer development in floodprone areas is a goal shared by public officials at all levels of government. Planning and managing development are local responsibilities; therefore, the guidebook prepared for community officials suggests ways for local officials to enhance the level of flood protection in their communities through safer floodplain management standards. The guidebook and accompanying brochure can be viewed on-line at <http://www.ncfloodmaps.com>, the North Carolina Floodplain Mapping Program's website.