MISSISSIPPI

Mississippi Emergency Management Agency

Floodplain Management Bureau

A Community Guide:

Pre and Post-Flood Responsibilities

FOR MORE INFORMATION CONTACT YOUR NFIP STATE COORDINATOR

MEMA: 1-866-519-MEMA (6362)
MEMA Website: www.msema.org

Foreword

It will flood, damage will occur, and there will be adverse impacts upon the citizens, local governments, and the state government from both physical and financial damages. Whether or not your community has experienced a flood (regardless of its magnitude), it will happen, and you must be prepared to respond to the event and to ensure that all post-flood reconstruction within your community's floodplain is compliant with your Flood Damage Prevention Ordinance.

This publication is intended to provide guidance to the community's elected officials, emergency management staff, and the floodplain administrator in the tasks associated with a flood event. This includes both pre-flood prevention and preparedness and the post-flood response, recovery, and mitigation responsibilities.

As a prelude: many communities integrate prevention, preparedness, response, recovery, and mitigation into key program concepts such as follows:

- Prevention, preparedness, response, recovery, and mitigation must be specific to and commensurate with the identified hazards. Communities are susceptible to a variety of natural and man-made hazards; specific planning and response measures must be tailored to each identified hazard. A possible flooding event can be mapped as stages or levels of flooding that is tied to specific river gage levels or storm surge predictions.

- "Early recognition" is the cornerstone to a timely and effective response. Early recognition is vital if an effective warning is to be issued which results in the prevention or the limitation of adverse impacts upon a community. The simple act of a timely warning can prevent loss of life and property damage within a community. This can be seen as mitigating the adverse impacts associated with an event, especially in regard to a flood, a dam or levee failure, or a storm surge.

- Effective response is the "last line of defense" against adverse consequences. Events will transpire that will adversely affect the community. If an emergency occurs, the community must be prepared to take actions to limit the impacts. If you are responding, your preparation measures or mitigation actions have not worked or have been overcome.

These concepts are then integrated by the local emergency management staff into the community's Comprehensive Emergency Management Plan. Proper cohesion ensures a community plan or standard operating procedure that will respond promptly and effectively to any emergency and save lives, protect property, and reduce suffering. The CEMP consists of four parts: (1) the Basic Plan, (2) Emergency Support Functions, (3) Support Annexes, and (4) Incident Annexes for specific incidents. The Incident Annexes should include the Flood Annex, the Levee Failure Annex, and the Dam Failure Annex.

A flooding event is truly a time of crisis. Being properly prepared enables a community to recover faster and rebuild better than before. The time to plan long-term recovery is prior to the next disaster. As part of this planning process, a hazard mitigation committee that includes all community stakeholders should be established and be active within the community. This committee is instrumental in identifying and prioritizing mitigation activities, and establishing and implementing public outreach and information campaigns. The public should be included in the planning process, data collection, and in the implementation of the plan.

MEMA

Acknowledgments:

Indiana Department of Natural Resources Division of Water
Ohio Department of Natural Resources Division of Water
Applied Technology Council
Association of State Floodplain Managers
U.S. Department of Homeland Security – Federal Emergency Management Agency

Table of Contents

Flood Hazard Description

A flood is any general or temporary condition of partial or complete inundation of normally dry land areas from: the overflow of inland or tidal waters or the unusual and rapid accumulation or runoff of surface waters from any source.

Flood season in Mississippi is considered to primarily occur between the months of November through June, while the months of March and April are considered to be the months of greatest flood frequency. The first six months of the year is the season of high flows in the Mississippi River. In other rivers and streams, flooding sometimes occurs during the summer from persistent thunderstorms, or in the late summer and early fall from heavy rains associated with tropical storms originating in the Gulf of Mexico. Mean annual precipitation ranges from about 50 inches in the northwest to 65 inches in the southeast, with an overall average rainfall of 53 inches.

Flooding is a natural and inevitable occurrence. Floods occur seasonally with general or torrential rains associated with tropical storms that later drain into river basins and fill them with an abundance of water. Rivers, lakes, and other water bodies have always overflowed their normal beds to inundate nearby land. The land adjacent to these bodies of water is called the floodplain. There are generally four leading causes / types of flooding. Mississippi is vulnerable to each, as will be explained in the following sections.

Types of Flooding

River (Riverine or Stream) Flooding

Riverine floods occur along rivers, streams, or channels primarily when there is heavy or prolonged rainfall. Other contributing factors include: (1) the elimination of ground cover on drainage slopes as result of tree cutting or wildfires, land clearing, or overgrazing; (2) the simultaneous arrival of flood crests from major tributaries; and; (3) blocked drainage by items such as debris dams or inadequately sized drainage structures. Floods from these sources can be “flash” or rapid, but are usually more gradual and have longer duration than flash floods. Riverine floods occur in all of the ten river basins found within the state of Mississippi.

Flash Flooding (Rapid)

Flash floods are a result of heavy, localized rainfall, possibly from slow-moving intense thunderstorms that cause small creeks, streams, branches, and rivers to overflow. They are most common when rain falls on areas with steep slopes or on built-up areas where impervious surfaces, gutters, and storm sewers speed up the flow of runoff. These floods often become raging torrents of water that rip through riverbeds, streambeds, city streets, coastal sections, and narrow valleys, sweeping everything in their path. Flooding has killed 174 people in Mississippi between the years of 1959-2010, nine of which have occured since 2000.
See: http://www.srh.noaa.gov/tadd/

Coastal (Tidal) Flooding

All lands bordering the Mississippi Sound, such as various bays and estuaries, or lakes are prone to tidal affects / flooding. Coastal lands, such as sand bars, barrier islands, and deltas provide a buffer zone to help protect human life and real property relative to the sea much as floodplains provide a buffer zone along rivers or other bodies of water. Coastal floods usually occur as a result of abnormally high tides or tidal waves, storm surge, heavy rains in combination with high winds, tropical storms, or hurricanes.

Storm surge is caused by high water from wind and the low air pressure differences that accompany a storm. Storm surge is not a tidal wave or sudden rush of water, rather it is more of a gradual increase in water surface elevation. A surge can be as high as 28 feet above normal water levels, flooding normally dry areas far inland. A storm surge is associated with a tropical storm or hurricane. Most of the fatalities and damage caused by a tropical storm or hurricane are the result of surge and its associated flooding, not high winds. The effects of coastal flooding can be worsened due to erosion. Coastal dunes and beaches provide natural protection by causing waves to break close to the shore, but these features can be worn down, exposing areas farther inland to storm damage. Tidal flooding occurs within three major river basins: the Pearl River, the Coastal, and the Pascagoula.

Drainage

Occurs chiefly in urban or developed areas when the volume of run off exceeds the capacity of the drainage system. Drainage floods can be the result of over-development, inadequate drainage, riverine flooding, flash flooding or a combination of these. Drainage flooding occurs throughout the state.

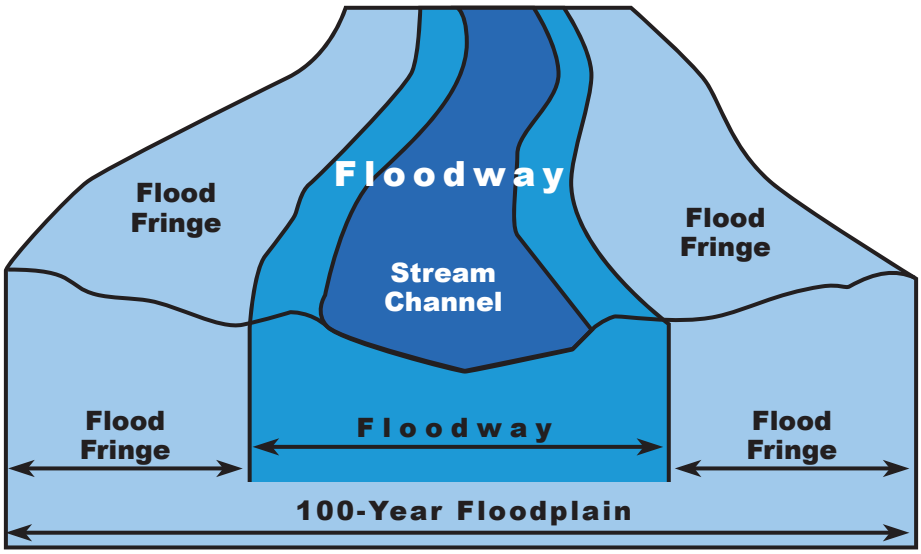


Figure 1

Section 1: Prevention and Preparedness Before the Flood

1.1 Become Familiar With Your Flood Risks

Local officials should utilize their Flood Insurance Rate Map and other mapping products to become familiar with the flood risks in their community. One option is to tour the areas that have been identified as susceptible to flooding. As the tour is conducted, a list of the structures found to be at risk should be compiled. The latitude and longitude of each structure should be recorded for inclusion into a GIS database or a spreadsheet. Should your community have Geographical Information Systems capabilities, the structures known to be at risk could be easily located and identified. This information can be used to complete the Biennial Report that is submitted to FEMA every two years. This serves as your Hazard Identification and Risk Assessment for flooding in your community.

1.2 Permit Floodplain Development Correctly

The majority of Mississippi communities with identified Special Flood Hazard Areas commonly referred to as "flood zones" or the "floodplain" participate in the National Flood Insurance Program. The Legislature of the state of Mississippi has in Title 17, Chapter 1,Mississippi Code 1972 Annotated delegated the responsibility to local government units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Each community must in turn adopt an ordinance that meets or exceeds the minimum requirements of Title 44 Code of Federal Regulations 60.3 in order to join and maintain good standing in the National Flood Insurance Program.

This ordinance requires that the local Floodplain Administrator establish and maintain a program to review proposed development and issue permits to regulate all development proposed in the SFHA. By ensuring that new construction or additions / improvements to existing structures are compliant with the ordinance, the need for future mitigation is significantly reduced.

1.3 Public Awareness and Outreach

Only a small percentage of people in any given community really understand the risks associated with flooding. With the current disclosure laws, buyers of homes / structures are informed if flood insurance is required for their federally backed loan on the structure. Unfortunately, this requirement is sometimes not disclosed until the "final closing" meeting.

To increase awareness concerning the risk of flooding in your community, newspaper articles or other forms of media can be used. For example, a community may find that the utility companies servicing the area may be willing to distribute information as an insert with their billings. In addition, educational programs can be implemented within the community. Some resources for these programs are the Mississippi Emergency Management Agency, regional planning and development districts, National Weather Service and FEMA.

1.4 Develop a Standard Operating Guidelines

What will need to be done? When does it need to be done? Who will do it? Where do we get it? There are many questions to consider when preparing for a flood. The existence of a SOG eliminates confusion, one of the biggest obstacles to a community during and after a flood. When officials don't know where to start, valuable time, energy, and resources can be wasted, and mitigation opportunities can be lost. Before your community is impacted by a flood event, you should consider the following three items.

1. Work closely with other officials involved in pre and post-flood recovery efforts (e.g. County Civil Defense / Emergency Management Director, Building Official, Health Department Official, and Community Engineer).
2. Conduct a review of the Flood Insurance Rate Map and other information to identify 'At Risk' areas and structures.
3. Stockpile an adequate supply of public information and floodplain development permit materials, such as fact sheets, press releases, permit forms, and other publications for distribution immediately after a flood.

One of the most important steps a community can take is to pool its resources, both tangible and intangible. Individuals and groups within the community who are directly involved with flooding issues should compile a list of actions to be taken in time of flooding. Examples of individuals and / or groups that should be involved are: local building official, code enforcement official, floodplain administrator, building inspector, planning director, homeowner associations, sheriff's department, emergency manager, police department, fire department, veterinarian, county surveyor, local Soil and Water Conservation District, County Cooperative Extension Service, community officials, public information office, Board of Health, Solid Waste Management, levee boards, and local utility companies. A team approach to floodplain management and flood response will enable the community to collaborate ideas through a diversified group effort.

The individuals involved in the development of the SOG need to consider many factors including, but not limited to:

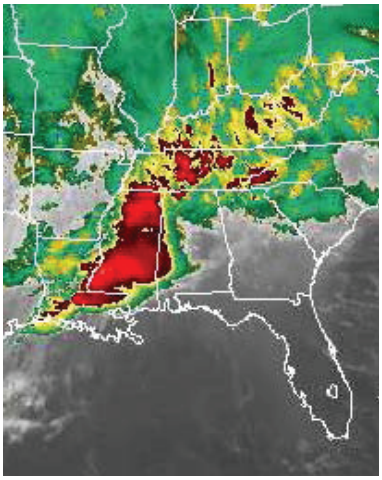


Figure 2

- What are the flood sources and what areas do they impact?
- Is there a flood warning system in place?
- Are the flood sources subject to flash flooding, or is there time to prepare?
- What roadways / access roads are at risk?
- Are there individuals in the community trained to lead or participate in a flood fight?
- Are there areas that could be protected by sandbagging?
- Where do we get sandbags and sand?
- Who will prepare and place the sandbags?
- Who will remove and properly dispose of the used sandbags after the event?
- What areas will need to be evacuated and when?
- Who will create a 'call down' roster?
- Who will handle public information bulletins and the news media?
- How will areas be evacuated and when?
- Are there critical facilities at risk within the community?
- Where can a shelter be established?
- Who will coordinate with volunteer organizations?
- Are there farm animals that will need to be transported?
- Is there a facility to handle family pets that have to be evacuated or treated?
- Are there hazardous waste / materials that will require special actions?
- Who will document the flood damage – residential / commercial / public?
- Will all structures be allowed to repair / reconstruct based on State and local regulations?
- Who will establish the procedures for damage assessment team(s) and who will serve on the team(s)?

Some communities may consider the establishment of a flood warning and response system. Ideally, this system would include flood forecasting, warning, and emergency preparedness. Communities should coordinate with their county Civil Defense / Emergency Management Director, the Mississippi Emergency Management Agency, National Weather Service, United States Geological Survey, United States Army Corps of Engineers, and their local Planning and Development District for assistance in developing a flood warning and response system and / or plan.

1.5 Pre-Event Mitigation Planning

Interest in flood mitigation projects is most focused after a major event. However, there is quite a lot that can be done beforehand. Check with MEMA about required local hazard mitigation plans and learn what actions can be taken to prevent future losses.

Perhaps one of the more important actions you can take before the next flood is to inform your community of where flood risk properties are located.

In light of the rising costs associated with floods, five Hazard Mitigation Assistance programs are administered by FEMA and MEMA to fulfill four objectives:

- To prevent future losses of life and damage to property due to disasters.
- To implement State or local mitigation plans.
- To enable mitigation measures to be implemented during immediate recovery from a disaster.
- To provide funding for previously identified mitigation measures that benefit the disaster area.

FEMA's Hazard Mitigation Assistance programs which are administered within the State by MEMA, consist of the Hazard Mitigation Grant Program, the Flood Mitigation Assistance program, repetitive flood claims, severe repetitive loss, and the Pre-Disaster Mitigation program. If other federal funds are likely to be used by your community, for example Community Development Block Grant funds, then your pre-flood planning should include learning more about CDBG.

For more information concerning hazard mitigation programs, please contact the MEMA Office of Mitigation at 601-933-6884 or through the agency website at www.msema.org. You may access the FEMA mitigation website at www.fema.gov for information concerning the mitigation program.

Section 2: Flood Response

Immediately following a flood event, the community official can anticipate several possible scenarios. These include:

1. Pressure to rebuild immediately with as little inconvenience as possible.
2. A lack of coordination among community departments.
3. Misinformation about both flood insurance and allowable repair within the floodplain.

The local Floodplain Administrator can curtail these problems by understanding the community's flood damage prevention ordinance and through the implementation of an effective floodplain development permit process.

In a post-disaster environment, the most important duty / procedure is focused on the assessment of damaged structures. The following three actions must be conducted:

1. Determine whether damaged structures are located within the Special Flood Hazard Area.
2. Conduct damage assessments for those damaged structures located within the SFHA.
3. Make a reasonable attempt to notify owner(s) of damaged structures(s) of the requirement to obtain a building permit / floodplain development permit prior to repair, rehabilitation, or reconstruction.

2.1 Documentation of Flooding

Depending on the size of the community and the area impacted, the task of documenting the extent of flooding can be daunting. However, this historical data is vital. Photographs and video of the affected areas can be taken to assist in documenting the extent of damage to structures. Boundaries of inundation and high water marks can be set to establish the area and height the water encompassed. The general public can also be utilized to provide information and data to community officials.

2.2 Documentation of Damage

The community should complete a preliminary 'windshield' survey of the damaged structures in the affected areas. These surveys should include site location (address), GPS coordinates, water level, (detected by mud lines, debris lines, etc.), construction type, and a preliminary damage assessment (i.e. affected habitable, minor, major, or destroyed). This task can be completed with the help of the local emergency manager, personnel involved with the permitting process, fire fighters, community officials, and / or volunteers. By pooling community resources, tasks that seem lengthy can be more easily accomplished. A sample form for the inventory of disaster-damaged structures can be found in the Appendix A.

A Preliminary Damage Assessment is conducted after a disaster by two teams, which consist of a Public Assistance Team and an Individual Assistance Team. It might be possible to combine your 'windshield tour' with a PDA of your community.

The Public Assistance PDA team generally consists of representatives from: FEMA, MEMA, local CD / EMA, city public works, and fire or police department. They are concerned with public infrastructure, how is it affected, how long will repairs take, what is the impact on budget and manpower, and can the community operate effectively with the damage.

The Individual Assistance PDA team generally consists of representatives from: FEMA, MEMA, local CD / EMA, and SBA. They are concerned with the severity of damages to privately owned property. This damage is categorized as: destroyed, major, minor and affected.

2.3 Notify Public of Need for Permit for Repair / Reconstruction

A natural reaction for flood victims is to try to restore life "back to normal" as soon as possible. This thought process usually does not immediately include the reality of obtaining the proper permits. For some victims, the reality may be that they will have to elevate their structure to or above the Base Flood Elevation, or that they may not be legally allowed to repair or reconstruct. It's important to emphasize the need to see the community's Floodplain Administrator and / or Building Official.[1]

Public notification can be given through the mass media (newspapers, radio, and television) and through the community website. Notices can also be posted at sites such as FEMA disaster recovery centers or community emergency shelters. In addition, individual damaged structures can be "red tagged," along with correspondence by mail to the property owner. A sample news release, door tag notice, and damage determination letters are included in the appendices.

---

[1] BFE is the flood elevation resulting from a 1-percent chance flood, as depicted on the FIRM.

Section 3: Repair and Reconstruction Permit Process

3.1 Determination of Floodplain Status

The first step in the permitting process is to determine the structure's floodplain status. Is it located in the flood fringe or floodway? (See Figure 1) This process can be accomplished by utilizing Flood Insurance Rate Maps, Flood Boundary Floodway Maps, or Floodway maps. Once the floodplain status is determined, your local regulations can then be applied accordingly.

3.2 Determination of the Extent of Damage

Before repair or alterations can be made to a structure following a flood or other event, the local Floodplain Administrator is required to make a damage assessment of the building. A portion of the structures located in the community's Special Flood Hazard Area will be pre-FIRM, or built before the community had flood maps developed. Therefore, these structures are most likely to have their lowest floor elevation below the 1 percent chance flood (also known as the 100-year flood, regulatory flood, or base flood elevation). The post-FIRM structures, or those built after the flood maps were published, should be built in compliance with the community's flood damage prevention ordinance and, therefore, are less likely to suffer damages from flooding.

When determining the extent of damage, the permit official should use the FEMA developed Substantial Damage Estimator program as the means to make a damage assessment. In this task, the main objective for the permit official is to be consistent in the method of assessment used. Consistency leaves little room for argument about equality. The permit official needs to maintain the documentation in the permit file. This will become especially important when the community is reviewed by the NFIP State Coordinator or by FEMA for NFIP compliance.

Substantial damage is defined as damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred.

Figure 3

3.3 Following the Local Flood Damage Prevention Ordinance

After damage assessments have been made, and the information entered into the SDE program, the permit official may then notify structure owners of the results and any requirements concerning the property. The permit official is responsible for seeing that all the applicable requirements of the community's floodplain regulations are met.

3.4 Building Protection Requirements

The building protection requirements and options outlined in the community's flood damage prevention ordinance should be referred to for guidance during the permitting process. If a structure has been substantially damaged, or substantially improved, the structure will have to be brought into compliance with the building protection requirements of the ordinance. This includes elevating the structure to or above the BFE, protecting utilities, and ensuring that all other local regulations are met. A copy of the elevation certificate and appropriate FIRM panel should be maintained in the permit file for each structure.

3.5 Document Retention

Copies of all flood-related documents should be kept in the community's floodplain management permit files. Examples of the items that should be kept are: floodplain development permits, elevation certificates or "as-built" certifications, correspondence with structure owners, photographs of structures, damage assessments, inventory of flood-damaged structures, copies of FIRMs or FIRMettes, and any other supporting documentation. The FIRMette is a portion of the FIRM panel that can be downloaded from the FEMA Flood Map Service Center web page.

Section 4: Post-Flood Response Packet

4.1 Building Classification for Flood Damage Evaluation

The Applied Technology Council has produced the ATC-45 Field Manual: Safety Evaluation of Buildings after Wind Storms and Floods. This manual provides guidelines and procedures to determine whether damage or potentially damaged buildings are safe for use after winds storms or floods. This pocket guide is intended for use by structural engineers, building inspectors, and others involved in post-disaster building safety assessments. The manual is available for purchase through their website at www.ATCouncil.org. Section 4 of this document is based on this field manual. For more detailed information, the manual should be purchased from the Applied Technology Council.

Following a flood event, the community must conduct a 'windshield' or preliminary damage assessment of its floodplain. This action takes place as soon as it safe to do so. Damaged structures are identified / noted on an inventory sheet. In a small event, building safety inspections can also be conducted, but in a large event, this will not be possible.

Teams consisting of fire fighters, police, or building department staff can make the preliminary damage assessment. **This assessment is also used to collect basic data in support of requests for state or federal disaster declarations.** Building officials and floodplain managers frequently use the results of preliminary damage assessments to identify areas where safety evaluations and 'substantial damage' assessments must be completed. This immediate survey can familiarize the community with damaged areas and provide a guide for the FEMA PDA to follow.

If the community determines that assistance will be needed, mutual aid pacts should be activated to obtain any needed inspectors from other jurisdictions. Information concerning the Statewide Mutual Aid Compact should be requested from MEMA. The Association of Floodplain Managers of Mississippi can also be a source of assistance in flood damage assessments.

4.2 Building Characteristics

The five building characteristics that should be noted:

- Building location (flood zone designation).
- Building age (pre-FIRM or post-FIRM).
- Lowest floor location (above adjacent grade).
- Foundation system.
- Building materials found below flood level.

Building Location. Floodprone areas are typically classified by the nature and severity of the associated flood hazards. In Mississippi, flood hazards have been classified and mapped for 344 communities. The national classification of flood hazards divides floodprone areas into those with a 1 percent or greater chance of being flooded in any given year (Special Flood Hazard Area or floodplain), and those with less than a 1 percent chance of being flooded in any given year.

The special flood hazard area is divided into zones: coastal areas have mapped 'V' zones, which are subject to waves, high velocity flow, and inundation (erosion is often a result of these conditions). 'A' zones have been mapped in both coastal and inland areas. The 'A' zones are subject to the same type of conditions present in 'V' zones, but those conditions are less severe. The minimum risk zones are designated as 'X' zones and are considered outside the floodplain for insurance and floodplain management purposes.

Building Age. Building construction or substantial improvement, which started **on or before** December 31, 1974, or **before** the effective date of the initial FIRM of the community (whichever is later) is referred to as pre-FIRM construction. Figure 4 depicts a pre and post firm structure.

Building construction or substantial improvement that started **on or after** the effective date of the initial FIRM of the community or **after** Dec. 31, 1974 (whichever is later) is referred to as post-FIRM construction.

Post-FIRM construction is usually more resistant to flood damage. The inspector should know the date dividing pre-FIRM and post-FIRM construction in the community where building damage is being evaluated, and be familiar with local floodplain construction requirements for post-FIRM construction.

Figure 4

Lowest Floor Location. Building damage increases as the flood depth increases above the level of the lowest floor (above adjacent grade). In areas subject only to inundation or slowly moving water, flood damage increases much more rapidly with flood depth. Total building destruction can occur with just a few feet of flood depth above the required lowest floor elevation.

The lowest floor is defined in the community flood damage prevention ordinance as the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, used solely for parking of vehicles, building access, or storage, in an area other than a basement, is not considered a

building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the non-elevation provisions of the ordinance.

Foundation System. The foundation system can be one of the most important factors that determines of the extent of flood damage. While elevation prevents floodwater from entering and damaging a building, the foundation often determines the survivability of the building. The FEMA supplied elevation certificate depicts the nine recognized foundation systems.

Building Materials below Flood Level. Many common building materials cannot withstand inundation without requiring replacement or major repairs (e.g. gypsum board, oriented-strand board, etc.). Others (e.g. concrete, structural steel, and masonry) are quite resistant to water damage and require only washing down and cosmetic repair. (See FEMA Technical Bulletin 2-93: Flood Resistant Material Requirements for Buildings Located in Special Flood Hazard Areas.)[2]

4.3 Typical Building Damage

Flood damage can range from minor (e.g. wet foundation, sub-floor, floor, floor covering) to total loss of a structure. The nature and extent of damage depends on:

1. The type, severity, and duration of the flooding.
2. The type of supporting soil and its resistance to saturation, moving water, and erosion, and.
3. The structure's characteristics.

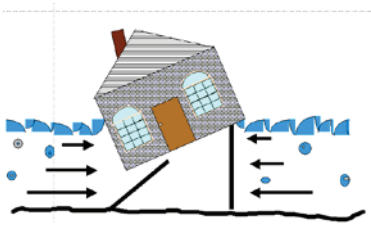
Flood damage is often limited to building elements that come into direct contact with floodwater, but more severe or extensive structural damage can occur if the foundation is damaged or destroyed by floodwater. In addition, if the structure is exposed to the simultaneous action of wind, or has previously been weakened by another event, the building is much more susceptible to flood damage. See Figure 5.

Figure 5

4.4 Hydrostatic Forces

Floodwaters that rise slowly can cause two types of damage:

- Damage due to material degradation or contamination.
- Damage due to lateral or vertical (buoyant) hydrostatic forces.



The first type of damage can be avoided through the use of flood-damage resistant materials below the flood level. The latter can be avoided by elevating all but the foundation above the flood level and by designing the foundation to resist the hydrostatic loads that will be applied. Note that buildings not elevated above the flood level may be floated or moved off their foundations, irrespective of the type of foundation. Damage to such buildings often occurs when the floodwaters recede and the building is dropped, not when the building is floated.

[2] FEMA Technical Bulletins are available on the FEMA website.

Building elevation can be achieved through a variety of foundation systems, each with its advantages and disadvantages relative to inundation and hydrostatic effects. Buildings elevated on posts, piles, columns, or piers generally sustain no structural damage due to inundation and lateral hydrostatic forces. Buildings supported by foundation walls or a crawlspace foundation can successfully resist the effects of inundation and slowly moving water, provided that the walls have openings that allow the flood level inside and outside the foundation footprint to equalize. Without flood openings, the walls, particularly un-reinforced masonry walls, are susceptible to failure from unbalanced lateral hydrostatic loads. See Figure 6.

Flood damage to buildings supported by slab-on-grade foundations depends almost entirely on the slab elevation and the strength of the underlying soil. If the slab elevation is above the flood level and the soil is compacted properly, little damage will result. If the flood level is above the slab, the building will likely be damaged by floodwaters that enter. If the underlying soil is not compacted properly (or protected against erosion), the soil will settle or wash out. When this happens, the slab and building it supports may collapse.

Figure 6

4.5 Hydrodynamic Forces

Flowing water in riverine and coastal floods can exert large lateral (drag) forces on buildings and foundations extending below the flood level, particularly on walls. In extreme cases, lightweight buildings can be swept off their foundations. Two feet of rising water can produce 1,000 pounds of pressure. Water moving at high velocities is also capable of carrying debris into a building and of eroding some soils. Small debris, which can move in even shallow flood depths, is not usually a problem. However, when there are

Figure 7

high velocities combined with greater flood depths, large debris can move at velocities approaching that of the floodwater, and can cause extensive building damage. High velocity flow can also erode soil around a foundation, undermining the building and causing damage. [3] See Figure 7.

[3] Hydrology deals with quantity of water. Hydraulics deals with the depth & velocity of water.

4.6 Wave Action

Waves are common in coastal flood events, and are one of the most damaging of all flood conditions. Breaking waves can exert lateral loads on structures that approach hundreds or thousands of pounds per square foot, and most buildings are incapable of withstanding these loads unless they are elevated above the wave crest on a deep pile or column foundation. Un-reinforced masonry walls and wood frame houses are particularly vulnerable. See Figure 8.

Figure 8

However, many buildings in coastal areas are designed and constructed with 'breakaway' walls. These walls provide no structural support to the buildings (which are supported by piles, columns, or piers) and merely enclose the area below the flood level (these areas are used for parking, storage, and building access). See Figures 9 & 10.

Figure 9

Figure 10

4.7 Erosion and Scour

Erosion is a large scale process that occurs in many flood events, particularly in 'V' zones and 'Coastal A' zones, where loose soils are washed away by waves and flowing water. Erosion can take place whether or not buildings or structures are present. Scour is a localized process that occurs when the presence of a building or structure distorts the flow field and leads to the loss of soil around the building or structure.

Buildings on shallow foundations or on inadequate pile / column foundations are frequently undermined and damaged by erosion and scour. Buildings constructed on adequate pile / column foundations can accommodate several feet of erosion and scour without being compromised, but they may sometimes require a Detailed Evaluation to determine whether or not the buildings pose a safety risk. See Figure 11.

Figure 11

4.8 Other Conditions

Mudslides or landslides, which result from flood events, can lead to structural failure. Sediment can also pose a risk to the structural integrity of otherwise intact buildings by being deposited inside or outside those structures. See Figure 12.

Occasionally, the extra weight of sediment can cause failure of a floor system or wall. Also, a large, unbalanced increase in exterior grade elevation raises questions as to the stability of exterior walls and some types of foundations (e.g. crawlspace or foundation walls). Pile, pier, and column foundations are usually unaffected by sedimentation.

Figure 12

4.9 Detailed Post-Flood Evaluation Criteria

The Applied Technology Council's ATC 45 establishes three building posting categories, (1) Inspected, (2) Restricted Use, and (3) Unsafe. Additionally, the Council has established six categories of building evaluation criteria, (1) Overall Damage, (2) Vertical Load Carrying System, (3) Lateral Load Carrying System, (4) Column movement-magnification due to eccentricity, (5) Degradation of the Structural System, and (6) Erosion, Sedimentation, Slope, or Foundation Distress.[4] This handbook will not address these evaluation criteria.

Section 5: NFIP Damage Estimation Requirements

Since the majority of Mississippi's communities have not adopted building codes or zoning ordinances, the 'de facto' regulations are in fact the flood damage prevention ordinance. However, this ordinance is only concerned with the development found within the community's Special Flood Hazard Area or Community Flood Hazard Area. Only structures found within these mapped areas should be considered for 'substantial damage' estimations.

5.1 Background

Communities participating in the National Flood Insurance Program often have difficulty determining whether buildings are substantially damaged. This difficulty is magnified after a major flood or other disaster where a large number of buildings have been damaged and there is a need to provide timely substantial damage determinations so that reconstruction can begin.

[4] Communities interested in these detailed inspection procedures are encouraged to obtain ATC 45.

Buildings located in a SFHA that are determined to be substantially damaged / improved, must be brought into compliance with the minimum requirements of the community's ordinance. The regulations may require a residential building to be elevated, resulting in additional costs for the homeowner. Such costs may be covered under the NFIP's Increased Cost of Compliance coverage. Information on the ICC can be found in the September 2003 FEMA Publication No. 301, NFIP's Increased Cost of Compliance Coverage, Guidance for State and Local Officials.

FEMA has developed a computer program, entitled Substantial Damage Estimator 1.0, May 2010, to assist state and local officials in estimating building value and damage costs for single-family, row, townhouse, manufactured and non-residential buildings. This computer application is based on regulatory requirements of the NFIP and is intended to be used in conjunction with an industry-accepted residential cost-estimating guide.[5] It is anticipated that local building officials or other persons knowledgeable with residential construction costs and practices will use this approach.

This SDE guidance document provides a "How To" approach to assist users in understanding the computer program and the relationships among the various computer screens within the software. For communities that do not wish to employ the computer application, a hard copy form of the calculations in the SDE program is available and may be used in place of the software program.

The SDE software is an update of the previous RSDE Version 2.2 software (FEMA, June, 2004). The compact disk is available -free of charge- by calling the FEMA Distribution Center at 1-800-480-2520 or may be downloaded from the FEMA website.

5.2 Introduction to the SDE Program

In communities participating in the NFIP, a building located within the SFHA that has been determined to be substantially damaged, must be brought into compliance with NFIP requirements to elevate to or above the Base Flood Elevation.. Substantial Damage / Improvement is the ratio of the cost to repair/improve a building to the market value of the building:

$$\text{Percent Damaged/Improved} = \frac{\text{Cost of Repairs/Improvements}}{\text{Market Value of Building}}$$

Additional information regarding substantial damage may be found in FEMA Publication No. 213, Answers to Questions about Substantially Damaged Buildings (FEMA, 1991). This publication is a guidance document on NFIP regulations and policy governing substantially damaged buildings.

The SDE software provides a consolidated application to estimate substantial damage of buildings. This tool assists state and local officials in using FEMA-accepted approaches to estimate the value of a building and determine costs to repair/reconstruct a building. From this information, a Percent Damaged / Improvement value can be calculated to establish a substantial damage / improvement determination for each residence. The program is a valuable tool since the "... enforcement of the substantial improvement requirement as defined in the NFIP regulations (44 CFR 59.1) frequently becomes a major concern for local officials after a community has experienced serious damages as a result of a flood or other disaster" (FEMA, 1991).

[5] Industry-accepted residential cost-estimating guides include publications such as the Marshall & Swift Residential Cost Handbook ©.

The SDE application is designed to accommodate residences and manufactured homes, but does not include buildings designated by state or federal entities as historical buildings.

5.3 Data Collection and Field Inspections

Damaged buildings must be evaluated and important data collected in order to properly make a determination of substantial damage. The Damage Inspection Worksheets (Appendix E) list information that state and local building officials should obtain when inspecting a building to determine substantial damage. The following list suggests a procedure to follow in performing substantial damage inspections.

1. Local officials should bring the following supplies with them in the field when performing their preliminary inspection:

    a. Flood Insurance Rate Maps.
    b. Address map showing individual lots or a Tax Assessor map for the community.
    c. A camera.
    d. Stenographer's pad to record notes.
    e. Sufficient copies of the Damage Inspection Worksheets.
    f. Measuring tool (e.g., tape measure) to record building dimensions and help determine the depth of flooding above the lowest floor.
    g. Any necessary protective clothing.

Figure 13

2. The approximate location of the SFHA should be drawn on the address map or assessor's map so that state or local officials can determine which damaged buildings are in the SFHA. **For NFIP compliance, substantial damage applies only to those buildings within the SFHA designated on the FIRM.**

3. The following information should be obtained during the inspection:

    a. Location of flooded buildings on the map.
    b. A list of all flooded buildings by address should be compiled, including the depth of flooding and a brief description of any exterior or interior damages observed. Latitude and Longitude coordinates if possible.
    c. Exterior and interior visual inspections should be completed for each building. Due to possible structural deficiencies, extreme caution should be exercised when entering damaged buildings.
    d. Photograph(s) should be taken of the building showing any damage. Of particular interest would be a photograph identifying a high water line from the flood. The address should be noted for each photograph as well as whether the building is located in or out of the SFHA. A photo log with the photo number, street address, community name, and date also should be kept.
    e. Record all the data required on the Damage Inspection Worksheet and include the percentage of damage for each building component. The percentage damaged should be determined based on a visual inspection of each component. When more than one inspector is working in the field, a consensus percentage damage should be mutually agreed upon by the inspectors.

As previously mentioned, these procedures and information on the data to be collected are listed on the SDE Damage Inspection Worksheet. This information will assist local officials in calculating the values used for substantial damage determinations. The cost of repairs and the value of the building are the two main values used in calculating substantial damage. The following approaches have been identified to determine the cost of repair / reconstruction.

1. Computed Damages - Damages are determined using the SDE software.
2. Contractor's Estimate of Repair / Improvement A detailed estimate that includes repairing the building to its pre-damaged condition, without post-damage event enhancements.
3. Community's Estimate of Repair / Improvement - Includes information such as the building code valuation tables published by the major building code groups.

Note: When determining the cost of repair, donated or discounted materials must be included at their full market value and estimated as if they were purchased during a normal market transaction. When determining labor costs, self or volunteer labor must be estimated at prevailing wages for the appropriate type of construction wage scale. The only costs that may be excluded are the cost for plans, specifications, survey, and building permits. The following approaches have been identified to determine the value of the building:

1. A detailed estimate of the Actual Cash Value as determined by the SDE.[6]
2. A detailed estimate of the Market Value.
   a. Property appraisals used for Adjusted Tax Assessment purposes.
   b. Independent appraisals by a Professional Appraiser.
   c. Qualified estimates based on sound professional judgment made by the staff of the local building department or local tax assessor's office.

After the field inspection has been performed and the Damage Inspection Worksheet has been completed, the SDE software and / or the Manual Computation Worksheet can be applied. Completion of the Damage Inspection Worksheet is essential for using either the SDE software or the Manual Computation Worksheet.

5.4 Documentation

Sufficient documentation concerning the substantial damage determination for each impacted building must be prepared and safely stored. Documentation is critical for the following reasons:

1. Applicable state and / or local laws or ordinances may require it.
2. It may be critical in defending a substantial damage determination during an administrative or judicial appeal.
3. FEMA often requires a community to demonstrate that its floodplain management ordinance has been enforced, or that the ordinance is in accordance with the NFIP's minimum requirements.
4. Documentation is often extremely useful in developing mitigation plans and grant applications under the FEMA Hazard Mitigation Assistance Programs.
5. Documentation is required to adjust a flood insurance claim under the NFIP's Increased Cost of Compliance coverage.

[6] In accordance with FEMA 213, page 10, Actual Cash Value is an acceptable estimate of Market Value.

Documentation can be broken down into three major categories: field reconnaissance, substantial damage analysis and determination, and administrative and judicial appeals. The types of documentation often collected and stored for these three categories are as follows:

1. Field Reconnaissance.
   a. Field assessment worksheets such as the Damage Inspection Worksheet.
   b. Fields notes.
   c. Photographs, including digital, film, or video.
2. Substantial Damage Analysis and Determination.
   a. SDE software printout.
   b. Hand computation worksheets.
3. Administrative and Judicial Appeals.
   a. Administrative or judicial hearing minutes or decisions.
   b. Alternative data used in calculating substantial damage such as:
      - Professional appraisals.
      - Adjusted tax assessment.
      - Contractor estimate of repairs/improvements.
      - Community estimate of repairs/improvements.

Figure 14

5.5 SDE Community Reports

The SDE program contains the following reports:

1. Community Report (All Structures Residential).
2. Community Report (All Structures Non-Residential).
3. Community Report (Substantially Damaged Residential).
4. Community Report (Substantially Damaged Non-Residential).
5. Structure & Percent Damage (All Residential Structures).
6. Structure & Percent Damage (All Non-Residential Structures).
7. Structure & Percent Damage (Substantially Damaged Residential).
8. Structure & Percent Damage (Substantially Damaged Non-Residential).
9. All Residences (Summary Report).
10. All Non-Residential (Summary Report).

Conclusion

Comprehensive pre-flood preparedness and post-flood response are essential for a successful floodplain management program. By being proactive and prepared, the community ensures that reconstruction activities in its floodplain will reduce or eliminate future flood damage.

This handbook is focused primarily on post-flood response. However, these procedures should be implemented after any disaster that impacts your community's Special Flood Hazard Area; this includes damage from wind, fire, earthquake, tornado, hurricane, etc.

Additionally, the five Hazard Mitigation Assistance grant programs were touched upon to inform the community of what can be used to obtain partial federal funding (75 percent) for projects that reduce flood losses. Flood hazard mitigation strategies utilized by these five programs include: acquisition, relocation, elevation, retrofitting of floodprone structures, training for local administrators, development of hazard mitigation plans, and construction of minor flood control projects. Remember, the concept of hazard mitigation is promulgated by both state and federal policies in order to break the cycle of repetitive loss in your community.

List of Figures & Illustration Credits

References / Sources

2003: *Flooding & Post-Disaster Responsibilities: A Local Administrator's Guide*
Indiana Department of Natural Resources Division of Water, Indianapolis, Indiana.

2002: *Fact Sheet 96-40: Post-Disaster Floodplain Management*
Ohio Department of Natural Resources Division of Water, Columbus, Ohio.

2004: *ATC 45 Field Manual: Safety evaluation of buildings after windstorms and floods*
Applied Technology Council, Redwood City, California.

2004: *The State of Mississippi Standard Mitigation Plan*
Mississippi Emergency Management Agency, Pearl, Mississippi.

2010: *State of Mississippi Model 'B' – 'E' Flood Damage Prevention Ordinance*
Mississippi Emergency Management Agency, Pearl, Mississippi.

2004 - 2010: *Mississippi Floodplain Management Desk Reference for Community Administrators*
Mississippi Emergency Management Agency, Pearl, Mississippi.

2001- 2010: *Floodplain Management in Mississippi Quick Guide*
Mississippi Emergency Management Agency, Pearl, Mississippi.

2003: *Manual for Preparing Mitigation Grant Applications*
Mississippi Emergency Management Agency, Pearl, Mississippi.

2003: *No Adverse Impact: A Toolkit for Common Sense Floodplain Management*
Association of State Floodplain Managers, Madison, Wisconsin.

The following materials are available –free of charge- by calling 1-800-480-2520:

FEMA	Technical Bulletin Series on floodplain construction techniques and certificates.
FEMA 54	Elevated Residential Structures FEMA 85 Manufactured Home Installation in Flood Hazard Areas.
FEMA 102	Floodproofing Nonresidential Structures FEMA 114 Retrofitting Floodprone Residential Structures.
FEMA 213	Answers to Questions about Substantially Damaged Buildings.
FEMA 301	NFIP's Increased Cost of Compliance Coverage: Guidance for State and Local Officials.
FEMA 312	Homeowner's Guide to Retrofitting: Six Ways to Protect your House from Flooding.
FEMA 347	Above the Flood: Elevating Your Floodprone House.
FEMA 348	Protecting Building Utilities from Flood Damage.

FEMA 549 MAT Report: Hurricane Katrina in the Gulf Coast.

FEMA 550 Recommended Residential Construction for the Gulf Coast.

Figure 15

Figure 16

Appendix A: Community Inventory Sheet

MEMA INDIVIDUAL ASSISTANCE
DAMAGE ASSESSMENT REPORT
(Instructions on Back)

CITY/COUNTY: _____ Page _____ of _____

TYPE DISASTER: _____ DATE OF OCCURRENCE: _____/_____/20____

ASSESSMENT TEAM: _____ DATE: _____/_____/20____

	A. INFORMATION REQUIRED							B. OBTAIN IF AVAILABLE								
	ADDRESS	Type	DAMAGE Dest	Maj	Min	Aff	ACCESS Y/N	STATUS Own	Rent	DOLLAR DAMAGE	INSURANCE (11) HO	FL	NO	TEMPORARY HOUSING # IN FAMILY	B'ROOMS NEEDED	REMARKS NAME OF FAMILY/TELEPHONE #
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	HO	FL	NO	(12)	(13)	(14)
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
TOTALS																

MEMA DA-1 (Revised 08/09)

INSTRUCTIONS FOR MEMA INDIVIDUAL ASSISTANCE DAMAGE ASSESSMENT REPORT (DA-1)

NOTE: Columns (3), (4), (5) and (6) can be completed with a check mark only. **DO NOT WRITE THESE COLUMNS.** The check marks are counted and the total inserted at the bottom of the page. Any writing in these spaces will interfere with the count.

General Instructions: Complete the heading for each page used.

a. Enter name of city and/or county.
b. Enter type of disaster; hurricane, tornado, flood, etc.
c. Enter date incident occurred.
d. Enter last names of individuals on the Damage Assessment Team.
e. Enter the date survey conducted.

Specific Instructions:

SECTION A - Information Required

Column (1) Address: Enter house number, street or road name, name of apartment building or mobile home park. Do not list Post Office Number or Route Numbers. For rural areas, distances from readily identifiable features may be used.

Column (2) Type: Enter type of living unit: SF - Single Family MF - Multi Family MH - Mobile Home

Columns (3), (4), (5) and (6) Damage: (Check One)

(3) Destroyed: A total loss or damaged to such an extent that repairs are not feasible.

(4) Major Damage: Extensive repairs required that would take a long period of time to accomplish.

(5) Minor Damage: Minimal repairs can be made in a relatively short period of time.

(6) Affected: This category includes dwelling with some damage to structure and contents but which is habitable without repairs, and damage to habitable items is less than assistance program minimums.

Column (7) Access: (Mark (Mark Y - Yes or N - No) A living unit in this category may or may not have sustained damage. Mark N if the home is inaccessible because of standing water, destroyed roads or bridges, etc. or if the area has been ordered evacuated.

SECTION B – Obtain If Available

Columns (8) and (9) Status: (Check One) Own or Rent.

Column (10) Dollar Damage: The estimated dollar amount of damage, separate if possible building and contents.

Column (11) Insurance: Check HO (Homeowners), FL (Flood) or NO (No insurance). If coverage amounts are available, (building and/or contents) put in Column (14) under Remarks.

Column (12) and (13) Temporary Housing: NOTE: If temporary housing is not required, disregard. If needed put as much information about the family composition, e.g., ages, sexes and relationships as can be obtained, enter in Column (13) under remarks. Enter numbers in Column (11) number in family, and Column (12) number of bedrooms required.

Column (14) Name of Family, Telephone Number and Remarks: enter the resident's name, and their telephone number and/or a number where they can be reached if their telephone is out of service. List any other information on separate sheet of paper and use reference numbers.

Appendix B: Sample News Release Concerning Damage Assessments

SAMPLE NEWS RELEASE

_____ (community name) residents are reminded to obtain permits for repairs to damaged structures within the floodplain. Due to the recent _____ (flood, tornado, hurricane, severe weather, etc.) many structures within the community may have experienced structural damage. Repairs and / or reconstruction activities to structures that are located in the floodplain and were damaged due to the event will require a floodplain development permit from the _____ (name of local office) as required by the _____ (community name) Flood Damage Prevention Ordinance.Failure to obtain the necessary permits can result in fines up to _____ (dollar amount from ordinance). For more information on the permitting process, contact _____ (Local Permit Official) at _____.

Appendix C: Sample Press Release Concerning NFIP

PRESS RELEASE MATERIAL

'FLOOD INSURANCE FACTS AND TIPS'

The National Flood Insurance Program (NFIP) combines both hazard mitigation and flood insurance policies to reduce flood damage, reduce federal disaster assistance payments, and save the taxpayers millions of dollars annually.

The following items are the benefits of flood insurance versus disaster assistance.

Flood Insurance	Disaster Assistance
Claims are paid even if a disaster is not declared by the President.	Most forms of assistance require a Presidential Declaration.
Between 25 percent and 30percent of all claims paid by the NFIP are outside the delineated floodplain.	Federal disaster assistance declarations are awarded in less than 50 percent of flooding incidents.
There is no payback requirement.	Disaster assistance is a loan that must be repaid with interest.
Flood insurance policies are continuous, and are not non-renewed or cancelled for repeat losses.	The duration of a Small Business Administration disaster home loan is 18.5 years.
Flood insurance reimburses you for all covered losses up to $250,000 for home-owners and $500,000 for businesses.	The average Individual and Family Grant payment is less than $2,500.
The average cost of a one-year flood policy is $316 annually, or less than one dollar is per day.	The average loan payment on an SBA disaster loan is $1,680 annually or $4.60 per day, until it repaid.
The cost of a $50,000 flood policy is $166 annually, depending on where you live or less than 50 cents per day.	Repayment on a $50,000 SBA disaster home loan is $320 a month or $3,840 annually.

The following items are tips for handling your flood insurance claim.

You have suffered a flood loss, with your home or business being damaged or possibly destroyed. What should you do? First contact your insurance agent as soon as possible. Inform the agent that you have suffered a loss and that you will be filing a claim. Give the agent the phone number or location where you can be reached, if you are unable to stay in your home or property. The agent will assign your claim to an adjuster as quickly as possible. The adjuster will inform you of the steps you need to take in order to file your claim. He or she will also provide to you any needed forms.

In order to expedite your claim and ensure that you will receive just compensation for your losses, it is recommended that you prepare for a loss well in advance. You should develop a comprehensive list of all your possessions within your home or business. Take a room-by-room inventory of all items within your property. Describe the items, to include serial numbers, model numbers and the date purchased for high dollar items. Do not leave anything out, to include the contents of closets, drawers, shelves, etc. When you purchase an item of lasting value, save the receipt. You should store the receipts in a safe location, away from any flood threat. Possibly the best such location would be a bank safe deposit box. Today's affordable technology of video cameras and personal digital camera, provide an excellent method of documenting your possessions and property. Again, visit each room and take an image inventory. Storage of such information will assist you in documenting your claim. Completing a detailed inventory before a loss, which includes quantities and approximate value of each item, and date purchased or acquired, will help you file a full insurance claim.

After a flood, and when it is safe to enter your property, make a detailed list of all damaged or lost property. Take photos of any standing water or watermarks found on walls and doorways. Do not throw out any damaged property without your adjuster's agreement. When the adjuster visits your property to inspect the damage, make sure that you or a trusted person is there to work with the adjuster. It is important that both the adjuster and yourself are in agreement with the "scope of damage," meaning an agreement about what needs to be repaired or replaced, without a dollar amount attached.

Your local Floodplain Administrator will conduct an inspection of your structure as part of the community's enforcement of its flood damage prevention ordinance. If the damage exceeds 50 percent of the pre-disaster market value of the property, and your property's lowest floor elevation is below the Base Flood Elevation (BFE) for the site, then the repairs will include elevating the structure on a properly designed and constructed foundation system so that the lowest floor is above the BFE.

Flood insurance policies issued since June 1, 1997, have an Increased Cost of Compliance "rider." This rider is for structures located within the Special Flood Hazard Area or floodplain and have been damaged by flood. This claim can be initiated by the policyholder, in cooperation with the local community and insurance adjuster, and can result in payments of up to $30,000 to bring a structure into compliance with the local ordinance. This ICC coverage can be triggered by either a claim based upon substantial flood damage or repetitive flood loss. The local Floodplain Administrator will work with your adjuster in such cases.

These tips will assist you in managing your claim successfully. If a problem does arise, you should contact the insurance agent or local company representative. You may also contact the state insurance commissioner's office. These offices have policyholder service sections that can assist you.

For more information, please contact your insurance company or agent, or call the NFIP at 1-888-FLOOD29.

Appendix D: Sample Door Tag (red paper is recommended)

DAMAGE NOTICE

This is to notify you that your structure has been identified as a possible damaged structure located within the community floodplain, due to the recent _____. Under the authority of _____ (Local Flood Damage Prevention Ordinance) any reconstruction or repair activity on this structure will require a permit from the _____ (Local Permitting Office).

Failure to obtain the necessary permit will result in fines in accordance with provisions of the community's flood damage prevention ordinance.

Please contact the _____ (Local Permitting Office) to obtain the necessary permits prior to the start of any reconstruction activity. Thank you.

(Local Permit Office) _____

Phone (____) ____ - _____.

Appendix E: Field Inspection Worksheet

SDE DAMAGE INSPECTION WORKSHEET
Single-Family, Row, or Townhouse Site Built Residences

Subdivision Information:

Subdivision: _____ Parcel # _____ Lot # _____

Elevation of lowest floor: _____ Datum: _____

Community Information:

NFIP Community Name: _____ *NFIP Community ID:* _____

Latitude: _____ Longitude: _____

Building Address:

Owner's First Name: _____ Last Name: _____

Building Address #: _____ Street: _____ Suffix: _____

City: _____ State: _____ Zip: _____

Phone #: _____ County: _____

Mailing Address:

Mailing Address#: _____ Street: _____ Suffix: _____

City: _____ State: _____ Zip: _____

Phone #: _____ County: _____

Care of: _____

Structure Attributes:

Style: 1-story _____ 2-story _____ More than 2 stories _____

Foundation: Continuous Wall w/ Slab _____ Piles _____ Crawlspace _____
Slab-on-Grade _____ Basement _____

Superstructure: Stud-Framed _____ Masonry _____ ICF _____ Common Brick _____

Roof Covering: Shingles (Asphalt or Wood) _____ Clay Tile _____ Slate _____
Standing Seam (Metal Roof) _____

Exterior Finish (Type) _____

HVAC: Yes _____ No _____

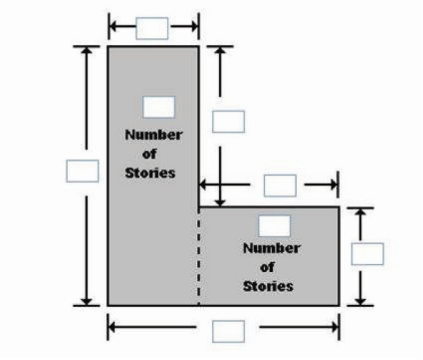
Structure Information:

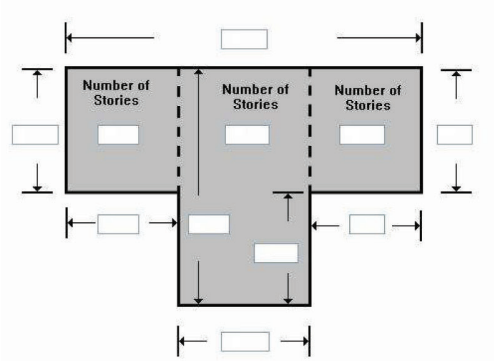
Year of Construction: _____

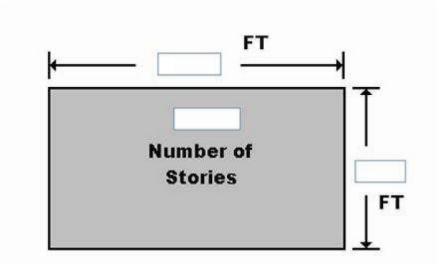
Quality of Construction: Low _____ Budget _____ Average _____ Good _____
Excellent _____

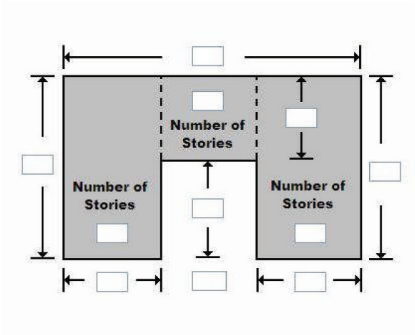
Condition of Structure: Average _____ Good _____ Excellent _____

Overall Dimensions of building footprint: _____









Damage Information:

Date Damaged Occurred: _____

Cause of Damage: Fire _____ Flood _____ Seismic _____ Wind _____ Other _____

Duration of Flood: _____ hours or _____ days

Est. Flood Elevation (ft.) _____ Est. Flood Depth (ft. above first floor) _____

Flood Depth above Lowest Floor: Exterior Walls _____ ft Interior Walls _____ ft

Inspector Information:

Name of Inspector: _____

Date of Inspection: _____ Time of Inspection: _____

Phone Number of Inspector *(including area code):* _____

NFIP Information:

NFIP Community I.D.# _____ FIRM Panel #: _____

FIRM Suffix: _____ Date of FIRM Panel: _____ FIRM Zone: _____

BFE (NGVD): _____Regulatory Floodway: Yes _____ No _____ Potential _____

Adjustments:

Roof: Description _____ Quantity (Sq. Ft.) _____ Unit Cost _____

Heating/Cooling: Description _____ Quantity (Each) _____ Unit Cost _____

Appliances: Description _____ Quantity (Each) _____ Unit Cost _____

Fireplaces: Description _____ Quantity (Each) _____ Unit Cost _____

Porch/Breezeways: Description _____ Quantity (Sq. Ft.) _____ Unit Cost _____

Garage: Description _____ Quantity (Sq. Ft.) _____ Unit Cost _____

Additional Adjustments;

Adjustment: _____ Quantity _____ Units _____ Unit Cost _____

Adjustment: _____ Quantity _____ Units _____ Unit Cost _____

Adjustment: _____ Quantity _____ Units _____ Unit Cost _____

PERCENT OF DAMAGE FIELD ESTIMATE *(for single/multi-family site built homes)*

_____ % Foundations
_____ %Superstructure (Framing/Masonry)
_____ % Roof Covering
_____ % Exterior Finish
_____ % Interior Finish
_____ % Doors and Windows
_____ % Cabinets/Countertops
_____ % Floor Finish
_____ % Plumbing
_____ % Electrical
_____ % Appliances
_____ % Heating/Cooling (HVAC)

Condition of Structure: *(Check one)*

____Inundation damage only ____Minor structural damage ____Major structural damage

____Partially collapsed ____Structure moved off foundation ____Totally destroyed/collapsed

Description of Damage: *(Answer yes or no)*

Plumbing: Exposed _____ In need of repair _____

HVAC/Electrical: Submerged _____ Damaged _____ Repair _____ Replace _____

Use numbers from the right to describe the condition of items C through F:

(C) Foundation _____	1. No visible damage	5. Dislodged/Destroyed
(D) Exterior walls _____	2. Settlement/cracked	6. Submerged
(E) Interior walls _____	3. Partially missing	7. Include all of the above
(F) Roof _____	4. Sagging	8. Other (explain) _____

SDE DAMAGE INSPECTION WORKSHEET
Manufactured Homes

Subdivision Information:

Subdivision: _____ Parcel # _____Lot # _____

Elevation of lowest floor: _____ Datum:_____

Community Information:

NFIP Community Name: _____ *NFIP Community ID:*_____

Latitude: _____ Longitude: _____

Building Address:

Owner's First Name: _____ Last Name: _____

Building Address #: _____Street:_____ Suffix:_____

City: _____State: _____ Zip: _____

Phone #: _____County:_____

Mailing Address:

Mailing Address#:_____ Street:_____Suffix:_____

City: _____State: _____ Zip: _____

Phone #: _____County:_____

Care of:_____

Structure Attributes:

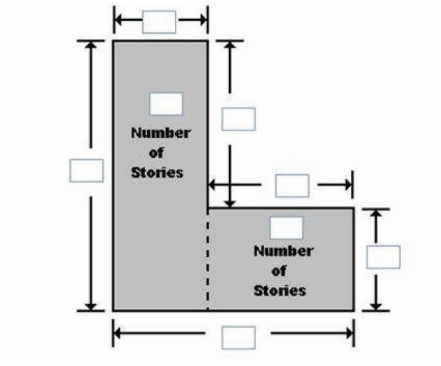
Foundation: Continuous Wall w/ Slab, or Piers and Posts _____ Piles _____ Crawlspace _____

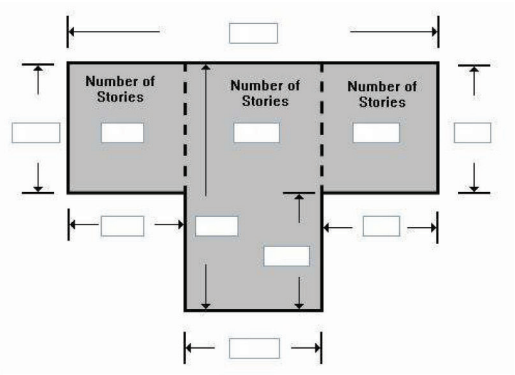
Structure Information:

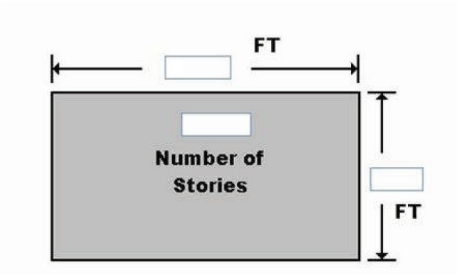
Year of Construction: _____

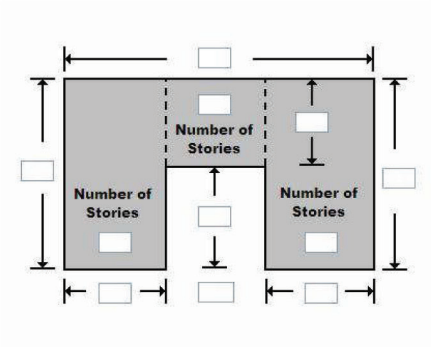
Quality of Construction: Low _____ Budget _____ Average _____ Good _____ Excellent _____
Condition of Structure: Average _____ Good _____ Excellent _____

Overall Dimensions of building footprint: _____









Damage Information:

Date Damaged Occurred: _____

Cause of Damage: Fire _____ Flood _____ Seismic _____ Wind _____ Other_____

Duration of Flood: _____hours or _____days

Est. Flood Elevation (ft.) _____ Est. Flood Depth (ft. above first floor) _____

Flood Depth above Lowest Floor: Exterior Walls _____ft Interior Walls _____ft

Inspector Information:

Name of Inspector: _____

Date of Inspection: _____ Time of Inspection: _____

Phone Number of Inspector *(including area code):* _____

NFIP Information:

NFIP Community I.D.# _____ FIRM Panel #: _____

FIRM Suffix: _____Date of FIRM Panel:_____ FIRM Zone: _____

BFE (NGVD): _____Regulatory Floodway: Yes _____ No _____ Potential _____

Adjustments:

Heating/Cooling: Description _____ Quantity (Each) _____ Unit Cost _____

Appliances: Description _____ Quantity (Each) _____ Unit Cost _____

Fireplaces: Description _____ Quantity (Each) _____ Unit Cost _____

Porch/Breezeways: Description _____ Quantity (Sq. Ft.) _____ Unit Cost _____

Garage: Description _____ Quantity (Sq. Ft.) _____ Unit Cost _____

Additional Adjustments:

Adjustment: _____ Quantity _____ Units _____ Unit Cost _____

Adjustment: _____ Quantity _____ Units _____ Unit Cost _____

Adjustment: _____ Quantity _____ Units _____ Unit Cost _____

PERCENT OF DAMAGE FIELD ESTIMATE *(for manufactured homes)*

_____ % Foundations
_____ %Superstructure (Framing/Masonry)
_____ % Roof Covering
_____ % Exterior Finish
_____ % Interior Finish
_____ % Doors and Windows
_____ % Cabinets/Countertops
_____ % Floor Finish
_____ % Plumbing
_____ % Electrical
_____ % Appliances
_____ % Heating/Cooling (HVAC)

Condition of Structure: *(Check one)*

____Inundation damage only ____Minor structural damage ____Major structural damage

____Partially collapsed ____Structure moved off foundation ____Totally destroyed/collapsed

Description of Damage: *(Answer yes or no)*

Plumbing: Exposed _____ In need of repair _____

HVAC/Electrical: Submerged _____ Damaged _____ Repair _____ Replace _____

Use numbers from the right to describe the condition of items C through F:

(C) Foundation _____	1. No visible damage	5. Dislodged/Destroyed
(D) Exterior walls _____	2. Settlement/cracked	6. Submerged
(E) Interior walls _____	3. Partially missing	7. Include all of the above
(F) Roof _____	4. Sagging	8. Other (explain) _____

SDE DAMAGE INSPECTION WORKSHEET
Non-Residential Buildings

Subdivision Information:

Subdivision: _____ Parcel # _____ Lot # _____

Elevation of lowest floor: _____ Datum: _____

Community Information:

NFIP Community Name: _____ *NFIP Community ID:* _____

Latitude: _____ Longitude: _____

Building Address

Owner's First Name: _____ Last Name: _____

Building Address #: _____ Street: _____ Suffix: _____

City: _____ State: _____ Zip: _____

Phone #: _____ County: _____

Mailing Address

Mailing Address#: _____ Street: _____ Suffix: _____

City: _____ State: _____ Zip: _____

Phone #: _____ County: _____

Care of: _____

Structure Information

Year of Construction: _____

Number of Stories: 1 _____ 2 through 4 _____ 5 or more _____

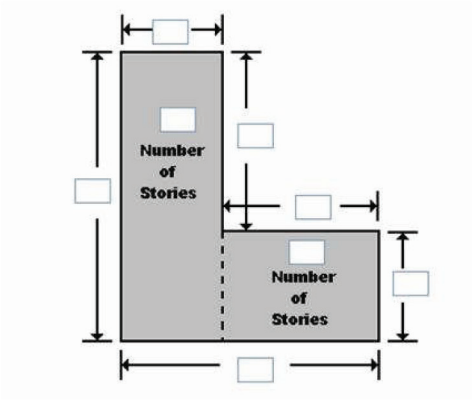
Structure Use:

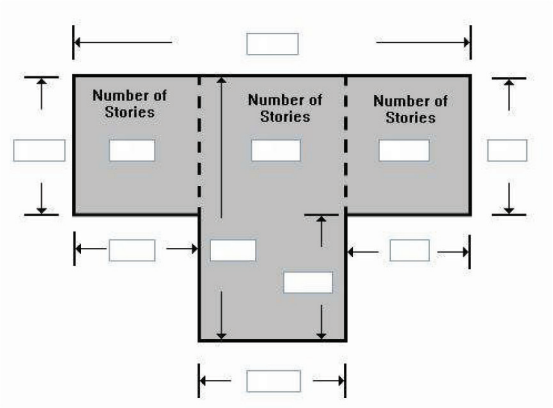
Department Store _____	Motel _____	Restaurant _____
Commercial Retail _____	Strip Mall _____	Conv. Store _____
Fire/Police Station _____	Elementary School _____	Apartments _____
Courthouse _____	Grocery Store _____	Mini Warehouse _____
Hospital _____	Long-term Care Facility _____	Auditorium _____
House of Worship _____	Fast Food Restaurant _____	Municipal Bldg. _____
Office Buildings _____	Hotel _____	High School _____
Industrial _____		

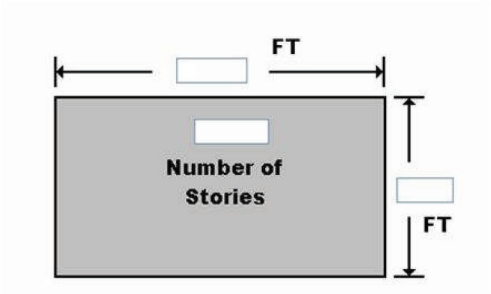
Sprinkler System: Yes_____ No_____

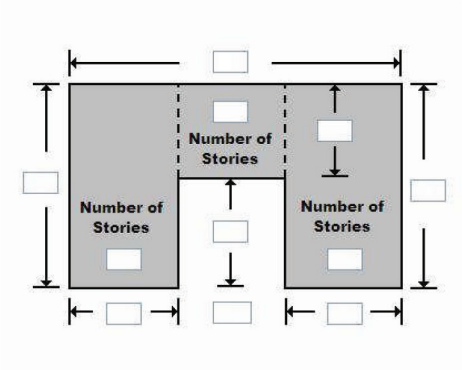
Conveyance: Yes_____ No_____

Overall Dimensions of building footprint:









Damage Information

Date Damaged Occurred: _____

Cause of Damage: Fire _____ Flood _____ Flood & Wind _____ Seismic _____ Wind _____

Duration of Flooding: _____ hours or _____ days

Est. Flood Elevation (ft.) _____Est. Flood Depth (ft. above first floor)_____

Flood Depth above Lowest Floor: Exterior Walls _____ft Interior Walls _____ft

Inspector Information

Name of Inspector: _____

Date of Inspection: _____ Time of Inspection: _____

Phone Number of Inspector *(including area code):* _____

NFIP Information

NFIP Community I.D.# _____ FIRM Panel #: _____

Adjustments

Built-In Equipment: Description _____ Quantity (Each) _____ Unit Cost _____

Roofing: Description _____ Quantity (Sq. Ft.) _____ Unit Cost _____

Built-In Security/Communications: Description _____ Quantity (Each) _____ Unit Cost _____

Conveyance System: Description _____ Quantity (Each) _____ Unit Cost _____

Wall Covering: Description _____ Quantity (Sq. Ft.) _____ Unit Cost _____

Window/Skylights: Description_____ Quantity (Each) _____ Unit Cost _____

Additional Adjustments

Description _____ Quantity (Each) _____ Unit Cost _____

Description _____ Quantity (Each) _____ Unit Cost _____

Description _____ Quantity (Each) _____ Unit Cost _____

Description _____ Quantity (Each) _____ Unit Cost _____

PERCENT OF DAMAGE FIELD ESTIMATE *(for non-residential buildings)*

_____ % Foundations

_____ %Superstructure

_____ % Roof Covering

_____ % Plumbing

_____ % Electrical

_____ % Interiors

_____ % HVAC

Condition of Structure: *(Check one)*

____Inundation damage only ____Minor structural damage ____Major structural damage

____Partially collapsed ____Structure moved off foundation ____Totally destroyed/collapsed

Description of Damage: *(Answer yes or no)*

Plumbing: Exposed _____ In need of repair _____

HVAC/Electrical: Submerged _____ Damaged _____ Repair _____ Replace _____

Use numbers from the right to describe the condition of items C through F:

(C) Foundation _____ 1. No visible damage 5. Dislodged/Destroyed

(D) Exterior walls _____ 2. Settlement/cracked 6. Submerged

(E) Interior walls _____ 3. Partially missing 7. Include all of the above

Appendix F: Substantial Damage / Improvement

ITEMS TO BE INCLUDED:

All structural elements, including:
Spread or continuous foundation footings and pilings.
Monolithic or other types of concrete slabs.
Bearing walls, tie beams, and trusses.
Wood or reinforced concrete decking or roofing.
Floors and ceilings.
Attached decks and porches.
Interior partition walls.
Exterior wall finishes (e.g. brick, stucco, or siding) including painting and decorative moldings.
Windows and doors.
Re-shingling or re-tiling a roof.
Cost to demolish undamaged components.

All interior finish elements, including:
Tiling, linoleum, stone, or carpet over sub-flooring.
Bathroom tiling and fixtures.
Wall finishes; including drywall, painting, stucco, plaster, paneling, marble, or other decorative finishes.
Kitchen, utility, and bathroom cabinets.
Built-in bookcases and cabinets.

All utility and service equipment, including:
HVAC equipment.
Repair or reconstruction of plumbing and electrical services.
Light fixtures and ceiling fans.
Security systems.
Built-in kitchen appliances.
Central vacuum systems.
Water filtration, conditioning, or re-circulation systems.

Also Included:
Labor and other costs associated with demolishing, removing, or altering building components.
Construction management / supervision.
Overhead and profit.
Equivalent costs for:
Donated materials.
Volunteered labor (including owners').
Any improvements beyond pre-damaged condition, including:
Utility systems upgrades to current code requirements.

ITEMS TO BE EXCLUDED:

Plans and specifications.
Survey costs.
Permit fees.
Debris removal (e.g. removal of debris from building or lot, dumpster rental, transport fees to landfill and landfill tipping fees), and clean-up (e.g. dirt and mud removal, building dry-out, etc.)
Items not considered real property such as throwaway rugs, furniture, refrigerators, stoves not built-in, etc.

Outside improvements, including:
Landscaping.
Sidewalks.
Fences.
Yard lights.
Swimming pools.
Screened pool enclosures.
Sheds.
Gazebos.
Detached structures (including garages).
Landscape irrigation system.

Note: This list is intended for guidance only, and may not be all-inclusive.

Appendix G: Post-Disaster Community Substantial Damage Memorandum

MEMORANDUM

TO: Community Executive Officer/Local Floodplain Administrator

FROM: NFIP State Coordinator

RE: Community Substantial Damage/Improvement Responsibilities

The following information is provided (as a standard operating procedure) to the National Flood Insurance Program participating communities found within declared disaster areas or to any participating communities that may have suffered severe damage to structures located within its Special Flood Hazard Areas (flood zones).

- The primary goal of the NFIP is to ensure the safety of people, and to render any structures within the community's Special Flood Hazard Areas less vulnerable to future flood damage.

- If a structure is located within the 1 percent chance floodplain, then the community's local flood damage prevention ordinance dictates how citizens repair, rebuild, or relocate their homes or businesses. The community must enforce their regulations to reduce future flood losses. The community's enforcement also allows residents to remain eligible for federally backed flood insurance and most forms of disaster assistance.

- If a structure is damaged so that the cost of restoring it to its pre-damaged condition would equal or exceed 50 percent of the market value (the building value, excluding the land, as established by what the local real estate market will bear. Market value can be established by independent certified appraisal, replacement cost depreciated by age of building - Actual Cash Value - or adjusted assessed values.) of the structure before the damage occurred, the structure is considered to be substantially damaged.

- Any reconstruction of or rehabilitation to a structure in which the cost equals or exceeds 50% of the market value before the start of construction is considered a substantial improvement.

- If a building within the SFHA or "flood zone" is substantially damaged or substantially improved, it must comply with the community's flood damage prevention ordinance. That would include relocating a home outside of the floodplain, elevating it to or above the Base Flood Elevation if it is rebuilt in the floodplain, or floodproofing a non-residential structure. (When an insured building, which is located within the SFHA, is damaged by a flood and is declared substantially damaged by the local administrator, it may qualify for up to $30,000.00 through the flood insurance policy's Increased Cost of Compliance "rider." This

coverage may help pay for some of the cost to elevate, demolish, or relocate the building in order to bring it into compliance with the local flood damage prevention ordinance.

Responsibilities in Dealing with Substantial Damage Rules

Local communities are responsible for:

1. Determining substantial damage or substantial improvement.
2. Estimating the market value of the structure.
3. Evaluating the cost of repairs or improvements. For damage repair, pre-flood prices and rates will be used.
4. Evaluating whether an area with significant damage might be a candidate for voluntary acquisition of properties.

The individual property owner is responsible for:

1. Working closely with local community officials to ensure compliance with the flood damage prevention ordinance.
2. Submitting complete cost estimates signed by a licensed contractor.
3. Submitting an elevation certificate to determine the lowest floor elevation *(the lowest enclosed area)*.
4. Submitting building plans to show how the building will be elevated.

The 50% rule is a long-term solution to a statewide problem. When fully implemented, neighborhoods will be much more likely to be safe and dry after the kind of storms that can devastate people's lives.

SUBSTANTIAL DAMAGE: Pre-FIRM buildings, with lowest floors below the BFE, must be elevated if damaged by any cause for which repair costs are 50 percent or more of the value of the building. This applies to all buildings in a Special Flood Hazard Area, even if the building has flood insurance. The cost to repair must be calculated for full repair to "before-damage" condition, even if the owner elects to do less. And the total cost to repair must include both structural and finish materials and labor.

SUBSTANTIAL IMPROVEMENT: When a Pre-FIRM building is proposed to be remodeled, renovated, rehabilitated, added to, or in any way improved, the proposed modifications must be evaluated for substantial improvement. If the total costs of improvement are 50% or more of the building value, the building must be elevated, etc., just like substantial damage. Total costs means all structural costs, including all finish materials, built in appliances, hardware, profit and overhead.

BUILDING VALUE: Building value equals market value of structure. Land and exterior improvements such as a swimming pool, pool enclosure, landscaping, paving, etc. are excluded. Market value equals adjusted tax assessed value, depreciated replacement value, or certified appraised value. The assessed value may be adjusted upward to reflect the market more accurately. The building's replacement value must be fairly depreciated to reflect the age of the building and the deterioration of building components. Certified appraisals must be based on the comparable sales method. The location and land value are not considered.

COSTS TO BE INCLUDED: The construction costs to be calculated for both substantial damage and improvement include both structural and finish labor and materials. This includes lighting fixtures, built-in appliances, interior moldings, paneling, tiling, wall-to-wall carpet over sub-flooring, built-in cabinets, etc. The value of donated materials and labor must be included. The cost to demolish undamaged building components must be established and included. Overhead and profit are also included, but not the costs of permits.

WHEN MAPS ARE REVISED: Substantial Damage and Improvement can affect Post - FIRM buildings too! If the FIRM's are revised, the new elevations along with a community's freeboard requirement must be used. All additions to a Post-FIRM structure must be elevated to or above the current BFE, whether they are "substantial" or not.

INCREASED COST OF COMPLIANCE: Buildings substantially damaged by flood, which are located within the SFHA, and are insured through the NFIP, are eligible for Increased Cost of Compliance coverage. ICC may provide up to $30,000.00 for mitigation measures such as elevation, relocation, demolition or floodproofing. In communities that have a cumulative damage or repetitive loss clause, buildings with repetitive flood damage may also be eligible for ICC coverage.

It is recommended that communities obtain a copy of the FEMA Publication 301, dated September 2003 'National Flood Insurance Program's Increased Cost of Compliance Coverage: Guidance for State and Local Officials.' The FEMA publication is free and can be ordered through the Distribution Center at 1-800-480-2520.

MITIGATION ASSISTANCE: In addition to ICC, financial assistance for owners of substantially damaged homes may be available through the Hazard Mitigation Grant Program or the Flood Mitigation Assistance program. The community should investigate the possibility of acquiring or elevating homes in the SFHA prior to the owner making major repairs.

TECHNICAL ASSISTANCE: FEMA has developed the Substantial Damage Estimator 1.0, a computer based program, to assist local officials in determining substantial damage. You can order the CD by calling the FEMA publications center at 1-800-480-2520. Communities may also request the assistance of volunteers, through the Association of Floodplain Managers of Mississippi or the Building Officials Association of Mississippi to provide this service for the community.

Appendix H: Letter of Intent (Inspection)

City of Floodville

Department of Building Inspections
1 Main Street
Floodville, MS 39000

January 1, 2010

Dear Resident:

The carrier of this letter is on official business for the city of Floodville during the hours between 8 a.m. and 6 p.m.

As the result of the flooding that occurred between December 25 and 26, 2004, City staff will be conducting damage assessments for structures throughout the community's Special Flood Hazard Area (floodplain). These evaluations are required by our Flood Damage Prevention Ordinance, which is dated Oct. 31, 2003. These inspections apply to all structures within the floodplain as shown on the community's flood insurance rate map, dated June 6, 2003.

The inspectors will require approximately 20 to 30 minutes to inspect for exterior and interior damage. They will record the required information used by the Floodville Department of Building Inspections for making substantial damage determinations. After the City has completed the determination process, a written determination will be mailed to the owners of the inspected structures.

Be advised that all repairs, reconstruction, and new construction are subject to the provisions of the Floodville Building Code and may require a permit. Construction activities that occur without a proper permit are considered to be non-compliant and may result in daily fines and / or the removal of the non-compliant construction.

If you refuse admittance to the inspectors, your address will be provided to our City Attorney for processing of a formal legal request to inspect the structure during normal business hours.

Questions regarding the inspection process may be directed to me or to the Floodplain Administrator of the Building Inspections. We may be reached at 601-333-6666 between the hours of 7:30 a.m. and 5:00 p.m., Monday through Friday.

Sincerely,

Joe Hazard, CBO
Department of Building Inspections

Appendix I: Letter of 'No Substantial Damage' Determination

City of Floodville

Department of Building Inspections
1 Main Street
Floodville, MS 39000

January 14, 2010

Mr. I. M. Flooded
100 Water Street
Floodville, MS 39000

Reference: NOTICE OF DETERMINATION

Dear Mr. Flooded:

As a result of a damage assessment estimation of your residence, the City has determined that your structure received damages that were less than 50 percent of its pre-damaged market value.

Under the requirements of the city of Floodville's Flood Damage Prevention Ordinance, dated Oct. 31, 2004, structures located within the floodplain that receive damages that are less than 50 percent of the structure's pre-damaged value can be rebuilt on the original site, but must obtain a floodplain development permit prior to making repairs.

Be advised that all repairs, reconstruction, and new construction are subject to the requirements of the ordinance and the City Building Code. The dimensions of the original footprint cannot increase or be altered without a permit. New construction must be evaluated in combination with any reconstruction or repairs to determine if the total value of the construction exceeds 50% of the structure value. Construction activities that occur without a permit are considered to be non-compliant and may result in daily fines and / or the removal of the non-compliant construction.

Members of our Department are prepared to meet with you at our office to discuss the damage assessment process and to provide guidance for reconstruction or repair of your structure. We may be reached at 601-333-6666 between the hours of 7:30 a.m. and 5 p.m., Monday through Friday.

Sincerely,

Joe Hazard, CBO
Department of Building Inspections

Appendix J: Letter of 'Substantial Damage' Determination

City of Floodville

Department of Building Inspections
1 Main Street
Floodville, MS 39000

January 14, 2010

Mr. I. M. Flooded
100 Water Street
Floodville, MS 39000

Reference: NOTICE OF DETERMINATION

Dear Mr. Flooded:

As a result of a damage assessment estimation of your residence, the City has determined that your structure received damages exceeding 50 percent of its pre-damaged market value.

Under the requirements of the city of Floodville's Flood Damage Prevention Ordinance, dated Oct. 31, 2004, structures located within the floodplain that receive damage of any origin, whereby the cost of restoring the structure would equal or exceed 50% of the structure value, must be brought into compliance with the Ordinance. For residential structures with more than 50 percent damage, the structures must either be removed from the floodplain or have the lowest floor elevated to, at, or above the base flood elevation. Failure to comply with this requirement will result in daily fines and / or legal action by the City against the owner of the structure.

The Increased Cost of Compliance program, under the National Flood Insurance Program, may provide additional financial assistance to either elevate or remove flood-damaged structures from the floodplain. The ICC program applies only to insured flood damaged structures found within the delineated floodplain. Be advised that all repairs, reconstruction, and new construction are subject to the provisions of the Floodville Building Code and will require a permit. Any construction activities that occur without a permit are considered to be non-compliant and may result in fines and / or the removal of the non-compliant construction.

Members of our Department are prepared to meet with you at our office to discuss the damage assessment process and to provide guidance for reconstruction or repair to your structure. We may be reached at 601-333-6666 between the hours of 7:30 a.m. and 5 p.m., Monday through Friday.

Sincerely,

Joe Hazard, CBO
Department of Building Inspections

Appendix K: Sample Letter to Flood Damaged Citizen

1

IMPORTANT INFORMATION
for PROPERTY OWNERS
who were DAMAGED by FLOOD

Put on community letterhead or layout as a handout/flyer.

If your home has been damaged by a disaster, you may get a lot of requests for information from people and organizations who are trying to help. You may also have many questions that you'd like to ask those people. Please read this and let us know if you have questions.

YOU MIGHT NEED A BUILDING PERMIT TO REPAIR: Depending on what was damaged and how bad the damage is, you may need an inspection and a building permit or other permit for health and safety. You can start cleaning up, but do not start your repairs until after you find out if a permit is required.

IT IS IMPORTANT THAT YOU KEEP COPIES OF THE FOLLOWING PAPERWORK: If you find that you are missing or have lost some of the paperwork listed, ask for help or directions from the authorities.

- ❒ Valuable documents.
- ❒ Homeowners insurance policy and payments.
- ❒ Flood insurance information and payments.
- ❒ Receipts for all repair work, materials you buy to make repairs, and bills from contractors.
- ❒ Letters and other paperwork.
- ❒ Records of ALL disaster assistance payments from Federal, State, local, and private agencies, including Individual & Family Grants and Emergency Maintenance & Repair grants.

POSSIBLE USES FOR THIS INFORMATION:

- ❒ Some of the paperwork listed above may be required by your insurance company, bank, mortgage company, taxing authority, or home equity lender.
- ❒ These documents may also be helpful as you work with government agencies such as the Federal Emergency Management Agency, MEMA, the U.S. Small Business Administration, and your community.
- ❒ Your community may be considering the possibility of a floodplain buyout project or a project to help homeowners raise homes on higher foundations to protect them from future flooding. If your home might be part of a project, then it is very important that you keep all the paperwork for at least three years, especially receipts for materials and repairs.

(name of community)
(contact information)

There are several federal disaster assistance programs that are available to both the citizen and to the community. A number of federal agencies do provide assistance to individuals, various levels of government, and non-government entities. These forms of assistance include grants, loans, loan guarantees, temporary housing, and counseling. These programs address such short-term needs as food and shelter, and long-term needs as public utilities repair.

Most federal disaster specific programs are administered by FEMA and SBA. Another class of programs can best be described as general assistance that is used in both disaster situations or to meet normal service needs. The Departments of Health and Human Services, Housing and Urban Development, and Justice are just a few that are generally involved in the latter programs.

Federal Disaster Recovery Programs

- Assistance for Individuals and Families.
- Individuals and Households Program.
- Disaster Unemployment Assistance.
- Dislocated Worker Activities.
- Public Safety Officers' Benefits Program.
- Public Safety Officers' Educational Assistance Program.
- Physical Disaster Loans.
- Cora Brown Fund.
- Assistance for Victims of Crime.
- Crisis Counseling.
- Disaster Legal Services.
- Tax Relief.
- Temporary Assistance for Needy Families.
- Workforce Investment Act.
- Medicaid.
- State Children's Health Insurance Program.

Assistance for State and Local Governments

- Public Assistance Grants.
- Hazard Mitigation Grants.
- Community Disaster Loans.
- Reimbursement for Firefighting on Federal Property.
- Fire Management Assistance Grant Program.

Assistance for Small Businesses & Nonprofit Organizations

- Economic Injury Disaster Loans.
- Physical Disaster Loans – Businesses.
- Emergency Loans for Farms.
- Public Assistance Grants.