North Carolina

Department of Public Safety

National Flood Insurance Program

Flood Damage Assessment Package

2018 Update



Includes Information On:

Pre-Disaster Steps to Take

Actions Following a Flood

High Water Mark Documentation

Substantial Damage Determinations

Sample Letters and Notices

Information on Mitigation Programs

Contact Information

ABBREVIATIONS

BFE: Base Flood Elevation

FDPO: Flood Damage Prevention Ordinance (or Floodplain Ordinance)

FPA: The local municipality’s Floodplain Administrator

FRIS: Flood Risk Information System (http://fris.nc.gov/fris)

NCEM: North Carolina Department of Public Safety Division of Emergency Management

NFIP: National Flood Insurance Program

RFPE: Regulatory Flood Protection Elevation (BFE plus freeboard)

SD: Substantial Damage

SFHA: Special Flood Hazard Area (or Regulatory Floodplain)

SI: Substantial Improvement

BEFORE THE FLOOD

A local floodplain administrator should have a clear idea of the number and locations of structures within the community that are in the Special Flood Hazard Area (SFHA). This will save time following a disaster by having already identified the structures within the community that will need a substantial damage assessment. Only those structures in the SFHA are required to have a substantial damage assessment.

SFHA shapefile boundaries are available for download from the North Carolina FRIS web site. By cross-referencing the SFHA with building footprints, all structures in the SFHA can be quickly identified. Work with your local GIS Department to create this list before the start of hurricane season.

IMPORTANT WEB SITES

* http://fris.nc.gov/fris/ NC Flood Risk Information System
* https://fiman.nc.gov/fiman/ NC Flood Inundation and Mapping Alert Network
* https://sdd.nc.gov/sdd/ NC Spatial Data Download
* https://flood.nc.gov/ncflood/ NC Flood Information
* http://arcg.is/1vurCX NC High Water Mark Application
* http://geodeticsurvey.ncem.org NC Geodetic Survey
* https://msc.fema.gov/portal FEMA Map Service Center
* https://www.floodsmart.gov/ FEMA NFIP Floodsmart Website
* https://www.fema.gov/media-library/assets/documents/18562 FEMA P-758: Substantial Improvement / Substantial Damage Desk Reference
* https://www.fema.gov/media-library/assets/documents/18692 FEMA P-784: Substantial Damage Estimator Tool, Manual, and Field Workbook
* https://www.nhc.noaa.gov/ NOAA National Hurricane Center

FOLLOWING A FLOOD

Flood Damage Prevention Ordinances in North Carolina require permits for the repair or reconstruction of flood damaged structures. The local manager must ensure that the repair of a damaged structure meets the FDPO requirements. Following a flood event, the local administrator should follow these five steps:

Step 1: Contact North Carolina Emergency Management or FEMA Region IV. Both offices have experience, materials, and guidance to help you carry out your floodplain management responsibilities. Make use of their help and expertise!

Step 2: Identify those structures believed to be substantially damaged and begin doing damage assessments.

As soon as possible, tour the flooded areas and identify every damaged structure in the SFHA.

Photograph the high-water mark and note the building’s location on a map for future reference.

Tag each structure with the notice included in this packet so residents are aware of the post flood permit requirements. A sample press release is also included with this packet.

Damage assessments can be difficult. Local officials should inspect every flood damaged building and calculate the cost of repairs. The FEMA Damage Estimator available to help make these determinations. The pre-flood market value of every flooded structure can quickly be estimated from the County Assessor’s records or by using square foot cost estimations.

Step 3: Provide information for the public on the local ordinance requirements for obtaining permits for repairs and rebuilding. Often repairs begin on flooded buildings before the water even recedes from the structure. Therefore, it is very important that this step take place as soon as possible. History shows that information normally spreads very fast among flood victims. Posted signs, flyers, notices on damaged structures, press releases, and letters mailed to individual owners can all be used for this purpose. Educate yourself on the damage assessment process, reconstruction methods, and available mitigation programs. Have a “Floodplain Development Permit Application” in hand and ready to distribute. Keep it simple. Be prepared for residents who are angry that they cannot start immediate repairs.

Step 4: Provide technical information to residents on elevation and floodproofing techniques. After a flood is the perfect window of opportunity to ensure that flood damages do not occur again. Federal or state mitigation programs are often available. Contact the County’s Emergency Management Agency. They are familiar with the mitigation programs, and are in contact with the State Hazard Mitigation Officer. Technical manuals and guidance are also available. Public meetings can be presented in flooded communities to introduce flood victims to the various options available to them. NCEM can help with these meetings.

Step 5: Implement a permit application procedure. At this point the community should be on its way to enforcing the floodplain ordinance. Those structures identified as substantially damaged (more than 50% of the pre-flood market value) should be “red-tagged” or otherwise identified. These buildings must be brought fully into compliance with the local flood damage prevention ordinance. The repair plans and permits should reflect this. Buildings with less than 50% damage can be issued permits to repair. A community has the option of waving permit fees for a period of time following a flood, but the permitting process still must be followed.

HIGH WATER MARK APPLICATION

High water marks are the best resource for documenting a flood event. These marks can be used in a variety of mitigation and planning efforts. Posting high water mark signs in public places help keep the flood risk “front-of-mind” for the citizens of the community, emphasizing the risk of flooding and the need to protect their property through elevation, mitigation, and insurance.

North Carolina has created a web site to document high water mark locations. You do not have to be a surveyor or acquire the actual elevation to document a high water mark. Simply mark the location of the high water mark, enter the information and photos on the web site, and NC Geodetic Survey will survey the elevation and location of the high water mark.

http://arcg.is/1vurCX



Documentation:

* Type of mark (mud or seed line)
* Location (lat/long, near intersection)
* Flagging (tape, nail through a cap)
* Quality of the mark
* Landowner information
* Safety information
* Date-stamped digital photos



SUBSTANTIAL DAMAGE: THE 50% RULE

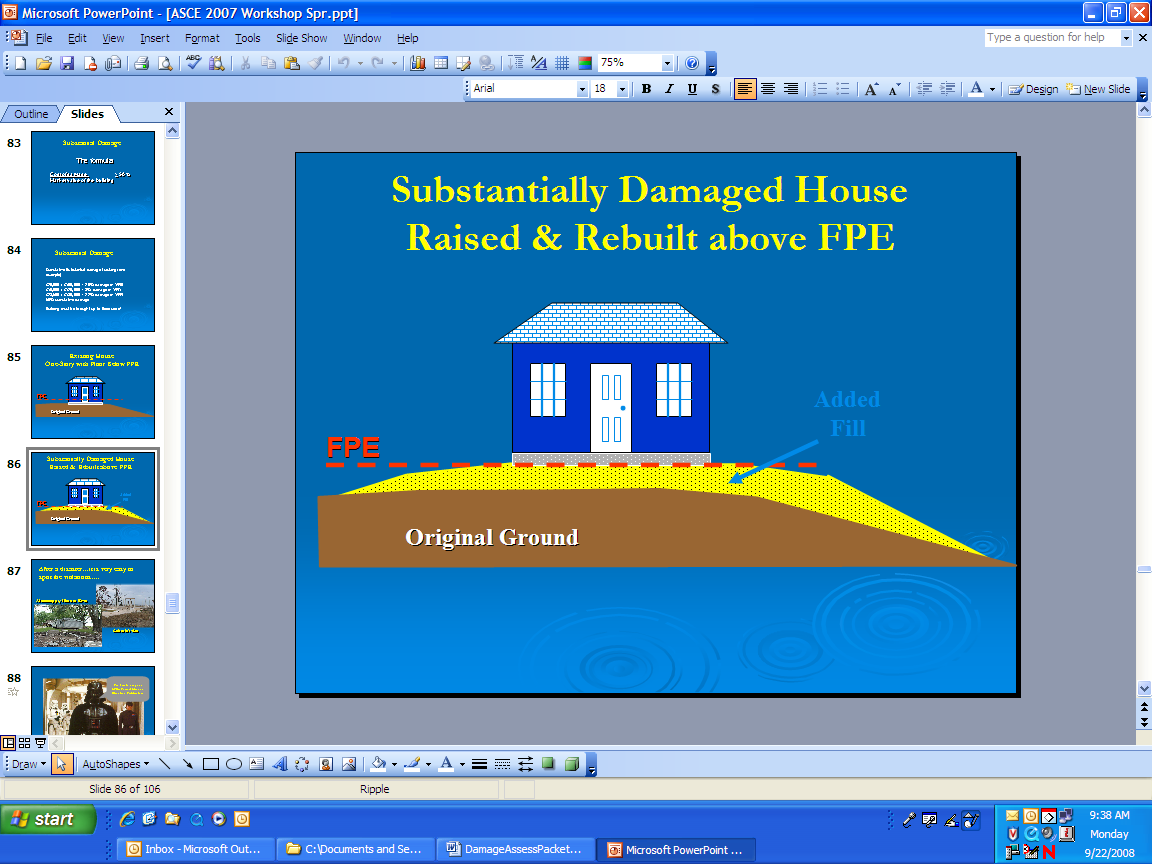
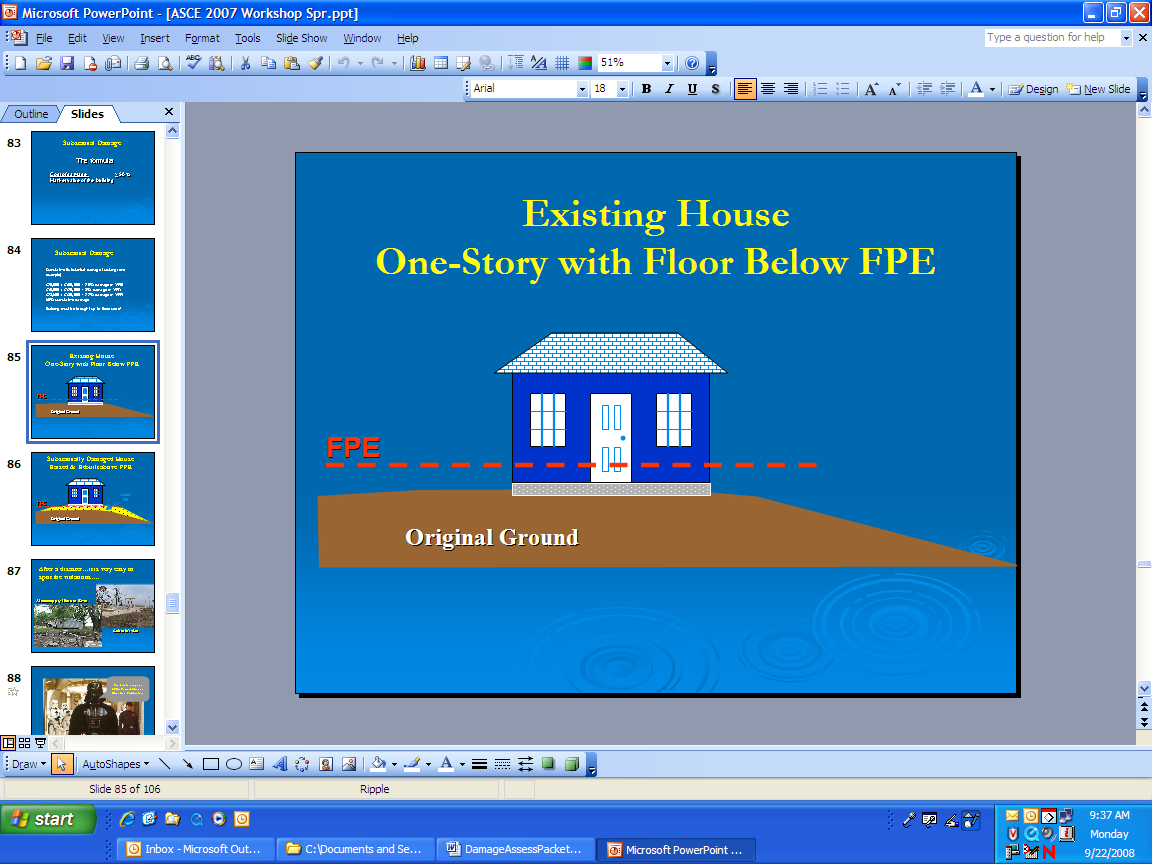
Communities participating in the National Flood Insurance Program (NFIP) have adopted, and are expected to enforce, a Flood Damage Prevention Ordinance. New structures located in a floodplain must be elevated above the RFPE. The same flood protection and elevation regulations also apply to substantially damaged buildings.

SUBSTANTIAL DAMAGE. Whenever a building located in an SFHA is damaged from any source (flood, fire, earthquake, wind, or man), the community must determine if that structure is substantially damaged. A building is substantially damaged when the cost of repairs are 50% or more of the structure’s “pre-damaged” market value.

Manufactured homes can be substantially damaged with as little as one foot of flooding. Frame buildings typically take three feet or more of flooding.

If the building is found to be substantially damaged, the structure must be brought into compliance with the floodplain ordinance (in other words, protected from future flooding to at least the base flood elevation).

The cost of repairs must be calculated for full repair to “pre-damaged” condition, even if the owner elects to do less. The total cost of repair includes structural and finish materials as well as labor.



Substantially Damaged House

Raised and Rebuilt Above BFE

Existing House

One-Story with Floor Below BFE

Added Fill

BFE

BFE

CUMULATIVE COST. Some communities in North Carolina have adopted ordinances which track cumulative damages. Cumulative substantial damage occurs at the point where multiple damages or improvements total 50% of the original market value of the building over the time specified in the ordinance.

BUILDING VALUE. Building value is the market value of the structure only. Land and exterior improvements (pool, landscaping, walkways, etc.) are excluded.

Following a disaster most communities find it easiest and quickest to obtain the assessed value from the County Tax Assessor. This ensures a unified market value for everyone since they have been paying taxes on this figure. There is often an adjustment factor to be included to convert the Tax Assessed Value to the Market Value.

Other acceptable methods of estimating market value include:

Independent appraisals by a professional appraiser.

Detailed estimates of the structure’s Actual Cash Value (replacement cost minus deprecation).

Property appraisals used for tax purposes.

The value of the building based on insurance claims.

Qualified estimates based on sound professional judgment made by staff of the local building department or local or state tax assessor’s office.

DETERMINATION OF FLOOD DAMAGE. The cost of repairs must be calculated for full repair to “pre-damaged” condition, even if the owner elects to do less. The total cost of repair includes structural and finish materials as well as labor. If local building codes require the structure to be repaired according to current codes these additional cost must be included in the full repair cost of the structure.

ITEMS TO BE INCLUDED IN DAMAGE DETERMINTIONS:

All structural elements:

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

Reshingling or retiling a roof

Hardware

All interior finish elements:

Tiling, linoleum, stone, hardwood or carpet over subflooring.

Bathroom tiling and fixtures

Wall finishes (e.g. drywall, painting, stucco, plaster, paneling, marble, or other decorative finishes)

Kitchen, utility and bathroom cabinets

Built-in bookcases, cabinets, and furniture

Hardware

All utility and service equipment:

Heating, ventilating, and air conditioning equipment

Repair or reconstruction of plumbing and electrical services

Light fixtures and ceiling fans

Security systems

Built-in kitchen appliances (stoves, ovens, dishwashers, vents)

Central vacuum systems

Water filtration, conditioning, or recirculation systems

Electrical panel boxes

Also:

Labor (calculated at county’s posted prevailing wage), profit, and other costs associated with repairing building components. Even if the labor is from volunteers or performed by the owner, equivalent labor costs must be included.

ITEMS TO BE EXCLUDED FROM DAMAGE DETERMINATIONS:

Clean-up and trash removal

Costs to temporarily stabilize a building so that it is safe to enter to evaluate and identify required repairs

Costs to obtain or prepare plans and specifications

Land survey costs

Permit fees and inspection fees

Carpeting and recarpeting installed over finished flooring such as wood or tiling

Outside improvements, including landscaping, irrigation, sidewalks, driveways, fences, yard lights, swimming pools, pool enclosures, and detached accessory structures (e.g., garages, sheds, and gazebos)

Costs required for the minimum necessary work to correct existing violations of health, safety, and sanitary codes

Plug-in appliances such as washing machines, dryers, refrigerators, window air conditioners, dehumidifiers, portable space heaters, and microwave ovens

*Sample Letter of Introduction for SDE Inspections*

***City of Floodville***

*Department of Building Inspections*

*1212 River Road*

*Floodville, NC 27515*

*September 31, 2018*

Dear Structure Owner or Occupant:

The bearer of this letter is on official business for the *City of Floodville* during the hours between 8:00 AM and 6:00 PM, Monday through Saturday.

As a result of the flooding that occurred between *September 23 and 24, 2018*, City staff will be inspecting buildings throughout the community for evidence of Substantial Damage. This evaluation is required by our Flood Damage Prevention Ordinance dated *April 8, 2005*. These inspections apply to all structures within the Special Flood Hazard Area as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM).

The inspectors will require approximately 30 minutes for a residential inspection and from 30 to 90 minutes for non-residential buildings to inspect for interior and exterior 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.

Please be advised that all repairs, reconstruction, and new construction are subject to the provisions of the North Carolina Building Code and may require a permit. Construction activities conducted without a proper permit may be considered 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 in the Department of Building Inspections at *919-555-1212* between the hours of 8:00 AM and 5:00 PM, Monday through Friday or e-mailed to [*Edward.teach@floodvillenc.gov*](mailto:Edward.teach@floodvillenc.gov).

*Edward Teach, Chief Inspector  
Department of Building Inspections  
919-555-1213*

**SAMPLE HANDOUT FOR RESIDENTS**

Information Regarding Cleanup of Damaged Structures within the Floodplain.

Repairs to damaged buildings located within the (community’s name) floodplain require a permit from the (community) building department and/or the (community) Floodplain Administrator.

1. You MUST obtain a building permit from (community name) before you repair, alter, or replace any of the following items:
   * 1. Roof
     2. Walls
     3. Siding
     4. Plaster
     5. Cabinets
     6. Flooring
     7. Electrical systems
     8. Plumbing
     9. Heating
     10. Air conditioning units
     11. Foundation
2. The permit office must conduct a damage assessment of the building. This inspection will determine if a structure is more than 50% damaged (substantially damaged). If a structure is found to be substantially damaged, the structure may not be repaired until it meets current flood protection requirements. It is imperative that the community permit office is contacted prior to taking any actions to repair damage related to the flood.
3. You may proceed with cleanup activities and temporary emergency repairs to prevent further deterioration, such as preventing the spread of mold and/or mildew, without a permit. These include:
   * 1. Removing and disposing of damaged contents, carpeting, wallboard, and insulation.
     2. Hosing and scrubbing, or cleaning floors, walls, and ductwork.
     3. Covering holes in roofs or walls and covering windows to prevent the weather from inflicting further damage.
     4. Removing sagging ceilings, shoring up broken foundations, and other actions to make the building safe to enter.

Prior to proceeding with cleanup activities that are allowed without a permit, you should thoroughly document the condition of the building by photographing the inside and outside of all areas that are being affected by the cleanup/emergency repairs.

**BUILDING REPAIRS AND STRUCTURAL IMPROVEMENTS ARE NOT ALLOWED WITHOUT A PERMIT FROM THE LOCAL BUILDING DEPARTMENT.**

**Recommended Guidelines for Interaction with Structure Owners by SDE Inspectors**

1. The objectives of the SDE inspections are to accurately collect the data required for the Substantial Damage determinations through rapid visual inspections and then move on to the next structure. The initial inspections may require more than 30 minutes for a residential structure. After the first five or so residential inspections, the inspection time should be 15 minutes or less, as the inspectors gain experience and feel more comfortable with the inspections.
2. Remember that you are entering someone’s home, structure, or place of business on official City business. Therefore, conduct yourself in a professional manner and be respectful of personal property. Many of these owners and occupants have suffered significant financial losses.
3. The inspections should be conducted between the hours of AM and PM, Monday through Friday (Monday through Saturday), until all required structures have been inspected. This is in accordance with the inspection guidance provided in the community Letter of Introduction that you will be carrying during the inspection period.
4. Due to the extensive damage, many of the homes and buildings may be unoccupied. Our community legal counsel has determined that we can enter open, unoccupied structures. The structure must be unlocked and open, without any signs or other visible postings forbidding trespassing on the property or within the structure. Therefore, you may have little or no contact with many of the occupants as you complete the inspections.
5. When approached by a property owner or occupant, verify that the building being inspected is theirs and then hand them a community Letter of Introduction. In general, property owners and occupants will be curious and possibly suspicious of the inspections. Explain that you are only there to inspect for damage and record the required data. The Letter of Introduction should be handed out to anyone who requests information about the inspections, including the “why” and under “what authority.”
6. If you feel threatened in any manner, return to your vehicle and call the police and then the SDE Manager with the address and type of threat.
7. Property owners and occupants with additional questions should call the point-of-contact identified in the Letter of Introduction. Try to avoid lengthy conversations as much as possible. Many of the conversations will become repetitive and will unnecessarily slow down the rate of inspections.
8. Unless specifically directed by the SDE Manager, do not try to explain the Substantial Damage determination process, what the results might mean for the property owner, or any State or Federal buyout or other post-disaster grant or funding program.
9. Under the SDE Manager’s direction, explain that building permits may be required for any reconstruction, repairs, or new construction in the aftermath of the disaster. Also, any reconstruction, repairs, or new construction conducted without a proper permit may be considered non-compliant construction and could result in daily fines and/or removal of the non-compliant construction.
10. For locked properties or properties where the owner or occupant is present and refuses to allow you inside, simply record the address, a name and telephone number (if available), the reason for no entry, and then hand the owner or occupant a Letter of Introduction before moving on to the next structure.
11. Before entering a building, verify that the floor is safe to walk on, and then enter carefully. Refrain from pulling pieces of plaster, tearing out drywall or ceilings, or tearing back wallpaper or drywall unless absolutely necessary for the assessment of the damages on the percent breakdown section of the *Damage Inspection Worksheet*.

**DAMAGE ESTIMATES BASED ON FLOOD DEPTH ON RESIDENTIAL BUILDINGS**

The information compiled below can be used to quickly determine whether a residential structure in average condition is likely substantially damaged. It is intended to be used as a screening tool so that the property owner is notified as soon as possible as to the potential status of his or her property. Often a more detailed assessment is warranted and detailed damage percentages should be determined, especially if the estimated damage is between 35% and 65% or if the house is in above or below average condition.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Estimated Percent Damage (Residential, Average Condition) | | | | | | | | |
| Depth Above First Finished Floor | 0 feet | 1 foot | 2 feet | 3 feet | 4 feet | 5 feet | 6 feet | 7 feet | 8 feet |
| Residential, 1-Story, Slab-On-Grade or Crawlspace | 18% | 31% | 42% | 53% | 62% | 70% | 77% | 83% | 89% |
| Residential, 2-Story, Slab-On-Grade or Crawlspace | 12% | 20% | 28% | 35% | 41% | 48% | 54% | 59% | 64% |
| Manufactured Home | 11% | 58% | 83% | 96% | 99% | 99% | 99% | 99% | 99% |
| Residential, 1-Story, with Basement | 34% | 42% | 51% | 60% | 69% | 77% | 85% | 92% | 98% |
| Residential, 2-Story, with Basement | 24% | 29% | 36% | 42% | 49% | 55% | 62% | 68% | 74% |

**SAMPLE DAMAGE ASSESSMENT WORKSHEET (long hand version)**

1. Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Owner:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Telephone Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Occupant:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Telephone Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Insurance Coverage (Optional):

Company\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Policy Number:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Building: $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Contents: $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Special Flood Hazard Area:  
 Community I.D. #:\_\_\_\_\_\_\_\_\_\_\_\_\_  
 FIRM Panel: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ FIRM Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
 Flood zone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Base Flood Elevation\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
 Existing Lowest Floor Elevation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(if available)

6. Duration of Flooding: Days\_\_\_\_\_\_\_\_\_\_\_ Hours \_\_\_\_\_\_\_

7. High Water Mark:

A) Exterior Walls \_\_\_\_\_\_\_\_\_\_\_\_ ft.

B) Interior Walls \_\_\_\_\_\_\_\_\_\_\_\_ ft.

8. Type of Structure:

A) Exterior:

1) Plywood/Hardboard\_\_\_\_\_ 5) Brick\_\_\_\_\_

2) Stucco\_\_\_\_\_ 6) Concrete Block\_\_\_\_\_

3) Siding/Shingles\_\_\_\_\_ 7) Other describe)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4) Masonry Veneer\_\_\_\_\_

B) Manufactured/Mobile Home:  
 1) Dimensions: a) single wide \_\_\_\_\_ size \_\_\_\_\_\_ x\_\_\_\_\_\_  
 b) double wide \_\_\_\_\_ size \_\_\_\_\_\_ x\_\_\_\_\_\_  
 2) Skirting: yes \_\_\_\_\_\_ no\_\_\_\_\_\_\_

9. Description of Structure:

A) 1 story \_\_\_\_\_\_\_ 2 story \_\_\_\_\_\_ Tri-level \_\_\_\_\_\_

1 1/2 story \_\_\_\_\_\_\_ Bi-level \_\_\_\_\_\_ 3 or more \_\_\_\_\_\_

B) Garage: attached\_\_\_\_\_\_\_\_ detached\_\_\_\_\_\_\_

Carport: attached\_\_\_\_\_\_\_\_ detached\_\_\_\_\_\_\_

C) Roofing:

Metal/corrugated or ribbed \_\_\_\_\_ Composition shingles \_\_\_\_\_\_

Other: Describe \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

D) Foundation:

Slab-on-grade \_\_\_\_\_\_\_

Crawlspace \_\_\_\_\_\_\_

Basement \_\_\_\_\_\_\_ (Finished Unfinished )

Poured walls \_\_\_\_\_\_\_

Block walls\_\_\_\_\_\_\_

Post-piers-piles\_\_\_\_\_\_\_

E) Heating and Cooling:  
 Forced air Boiler

Wall furnace or baseboard Heat Pump

Fireplace/wood burning stove Other

F) Plumbing: Number of bathrooms: \_\_\_\_\_\_\_

G) Built-In Appliances:

List: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. Description of Damage:

A) Plumbing: 1) Is it exposed?\_\_\_\_\_\_\_ 2) Does it need repair?\_\_\_\_\_\_\_

B) HVAC/Electrical

1) Water depth \_\_\_\_ ft.

2) Damaged \_\_\_\_\_\_\_\_\_\_\_ (Repairable \_\_\_\_\_\_\_Replaced )

Use corresponding numbers given below to answer C-F below:

1. settlement/cracked 2. partially missing

3. sagging 4. dislodged/destroyed

5. submerged 6. include all the above

7. no damage 8. other: describe

C) Foundation

D) Exterior Walls

E) Interior Walls

F) Roof

11. Overall condition of structure:

A) Minor damage \_\_\_\_\_\_\_ B) Major Damage \_\_\_\_\_\_\_

C) Totally destroyed \_\_\_\_\_\_\_ D) Structure off foundation \_\_\_\_\_\_

12. Determination of Substantial Damage

Cost of Repair

Percent Damage = -------------------- = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Value of Building

In the event that the percent damage is equal to or greater than 50%, the building is substantially damaged.

\_\_\_\_\_\_\_ This building is substantially damaged and therefore must be elevated or floodproofed so that the lowest floor is protected at or above the elevation of the base flood.

\_\_\_\_\_\_\_ This building is not substantially damaged. This building can be repaired without having to be mitigated.

\_\_\_\_\_\_\_ This is a properly elevated structure and may be reconstructed at its existing elevation.

Reviewed by:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Approved by:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

THE FEMA SUBSTANTIAL DAMAGE ESTIMATOR (SDE)

FEMA has developed a computer program called the Substantial Damage Estimator (SDE) to assist local officials estimate building value and damage costs. This computer program is based on regulatory requirements of the NFIP and is intended to be used in conjunction with an industry accepted residential cost estimating guide (such as the Marshall-Swift or RS Means Guide).

If your community has multiple structures which have been flooded, it is definitely worth your time to obtain the SDE and learn to use the program. It will save you much time and research. The SDE can be downloaded directly from the FEMA website or obtained by contact FEMA or IDNR/OWR. The most recent SDE is version 3.0.

**SDE DAMAGE FIELD INSPECTION WORKSHEET**

**Single/Multi-Family Site Built Residences**

**1. Subdivision:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Parcel #\_\_\_\_\_\_\_\_\_\_ Lot #\_\_\_\_\_\_\_\_\_\_

**2. Elevation of lowest floor:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Datum:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3. NFIP Community Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**4. Latitude:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Longitude:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**5. Owner’s First Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Last Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**6. Building Address:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** City:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

State:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Zip:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phone #:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**7. County**:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**8. Mailing Address:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** City:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

State:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Zip:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phone #:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**9. Date of Construction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Date Damage Occurred:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**10. Cause Of Damage:** (A) Fire (B) Flood (C) Fire & Wind (D) Seismic (E) Wind

**11. Duration of Flooding:** (A)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hours or (B)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ days

**12. Description Of Residential Site-Built Modular Structure**:

(A) Quality of Construction:

(1) Low\_\_\_ (2) Fair\_\_\_ (3) Average\_\_\_ (4) Good\_\_\_ (5) Very Good\_\_\_ (6) Excellent\_\_\_

(B) 1-story\_\_ 1 ½-story\_\_ 2-story\_\_ More than 2 stories\_\_ 2-Story Bi-level\_\_ Split-level \_\_\_

(C) Foundation *(check one):*

Slab-on-grade\_\_\_\_ Basement\_\_\_\_ Crawl space\_\_\_\_ Piers\_\_\_\_ Footings\_\_\_\_

(D) Overall Dimensions of building foot print: Size (L)­\_\_\_\_\_\_\_\_ ft X (W)\_\_\_\_\_\_\_\_ ft

(E) Walls (check one)

(1) Wood Frame\_\_\_\_\_\_\_ (2) Masonry\_\_\_\_\_\_\_ (3) Concrete Walls\_\_\_\_\_\_\_

(4) Exterior Finish (Type)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(5) Interior Finish (Type)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(F) Roof:

(1) Metal/Corrugated or ribbed:\_\_\_\_\_\_ (2) Composition Shingles:\_\_\_\_\_\_\_ (3) Other:\_\_\_\_\_\_\_

(G) Heating/Cooling:

(1) Forced Air\_\_\_\_ (2) Warm and Cooled\_\_\_\_ (3) Wall Furnace\_\_\_\_ (4) Heat Pump\_\_\_\_\_\_

(H) Flooring

Floor Covering (Type)

(I) Appliances (built-in only).

List

(J) Fireplace: Yes \_\_\_\_ No \_\_\_\_\_ Quantity \_\_\_\_\_

(K) Porch/Breezeways: Yes ­­­­­\_\_\_\_\_\_ No \_\_\_\_\_\_\_

(L) Garage: Attached Detached No. of cars: \_\_\_\_\_\_\_

Carport: Attached Detached No. of cars: \_\_\_\_\_\_\_

(M) Basement *(check one):* Finished \_\_\_\_\_\_\_ Unfinished \_\_\_\_\_\_\_

(N) Deck: Yes \_\_\_\_\_\_\_ No \_\_\_\_\_\_\_

**13. Name of Inspector: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**14. Date of Inspection: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Time of Inspection: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**15. Phone Number of Inspector** *(including area code) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

**16. Description of Special Flood Hazard Area (SFHA):**

NFIP Community I.D.# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ FIRM Panel #: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

FIRM Suffix: \_\_\_\_\_\_\_ Date of FIRM Panel: \_\_\_\_\_\_\_\_\_\_\_\_ FIRM Zone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

BFE (NGVD): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Regulatory Floodway: Yes \_\_\_\_\_\_\_ No \_\_\_\_\_\_\_ Potential \_\_\_\_\_\_\_

**17. Flood Depth Above Lowest Floor**

(A) Exterior Walls \_\_\_\_\_\_\_\_\_\_ft (B) Interior Walls \_\_\_\_\_\_\_\_\_\_ ft

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

\_\_\_\_\_\_\_\_\_\_% Foundations

\_\_\_\_\_\_\_\_\_\_%Superstructure (Framing/Masonry)

\_\_\_\_\_\_\_\_\_\_% Roofing

\_\_\_\_\_\_\_\_\_\_% Insulation and Weather-stripping

\_\_\_\_\_\_\_\_\_\_% Exterior Finish

\_\_\_\_\_\_\_\_\_\_% Interior Finish (Plaster/Drywall)

\_\_\_\_\_\_\_\_\_\_% Doors, Windows, Shutters

\_\_\_\_\_\_\_\_\_\_% Lumber Finished

\_\_\_\_\_\_\_\_\_\_% Hardware

\_\_\_\_\_\_\_\_\_\_% Cabinets/Countertops

\_\_\_\_\_\_\_\_\_\_% Floor Covering

\_\_\_\_\_\_\_\_\_\_% Plumbing

\_\_\_\_\_\_\_\_\_\_% Electrical

\_\_\_\_\_\_\_\_\_\_% Built-in Appliances

\_\_\_\_\_\_\_\_\_\_% Heating/Cooling (HVAC)

\_\_\_\_\_\_\_\_\_\_% Painting

**19. CONDITION OF STRUCTURE:** *(Check one)*

(A) Inundation damage only

(B) Minor structural damage

(C) Major structural damage

(D) Partially Collapsed

(E) Structure Moved Off Foundation

(F) Totally Destroyed/Collapsed

**20. DESCRIPTION OF DAMAGE:** *(Answer yes or no)*

(A) Plumbing: \_\_\_\_\_ (1) Exposed \_\_\_\_\_ (2) In need of repair \_\_\_\_\_

(B) HVAC/Electrical: \_ (1) Submerged \_\_\_ (2) Damaged \_\_\_ (3) Repair \_\_\_ (4) Replace \_\_\_\_

**SAMPLE NOTICE TO POST ON STRUCTURES**

**NOTICE**

**Because this building is located in a floodplain and was damaged, a damage assessment must be conducted by the *(town or county)*.**

**Before occupying this building or doing any repair work you must call the (*town or county) Department of Zoning and Building Safety at (\_\_\_ ) \_\_\_\_\_\_\_\_\_* to schedule an inspection.**

**Failure to obtain permits prior to reconstruction approval may result in a penalty.**

**Substantial Damage Sample Letter to Notify Structure Owner of Determination**

**NOTICE OF SUBSTANTIAL DAMAGE DETERMINATION**

Dear [name of structure owner]:

The *City of Floodville* has reviewed your recent application for a permit to repair [*describe proposed improvement/addition*] for the existing residential structure located at [*insert structure address], Floodville, NC 27515*. These repairs are required due to flood damage from the storms of *July 26-28, 2013*.

It has been determined that this structure is located within a mapped Special Flood Hazard Area on the Flood Insurance Rate Map (FIRM), Panel *0150*, with an effective date of *June 19, 2008*. As required by our Flood Damage Prevention Ordinance, we have determined that the proposed repairs constitute Substantial Damage for the structure. This determination is based on a comparison of the cost estimate of the proposed cost of repairs to the pre-damage market value of the structure (excluding land value). When the cost of repairs equals or exceeds 50 percent of the pre-damage market value of the structure, the damages are considered Substantial Damage.

As a result of this determination, you are required to bring the structure into compliance with the flood damage-resistant provisions of the *City regulations and/or code [cite pertinent sections].*

Building Address / Location:

Fair Market Value: *$123,456 (Based on 1.5 x assessed value)*

Total Damages: *$98,765*

Percent Damage: *80%*

Ordinance Requirement: Mitigation (Elevation, Relocation, or Demolition)

We would be pleased to meet with you and your designated representative (architect/builder) to discuss the requirements and potential options for bringing the home into compliance. There are several aspects that must be addressed to achieve compliance. The most significant requirement is that the lowest floor, as defined in the regulations/code, must be elevated to or above the *base flood elevation (BFE) [or the elevation specified in the regulations/code]*. You may wish to contact your insurance agent to understand how raising the lowest floor higher than the minimum required elevation can reduce National Flood Insurance Program (NFIP) flood insurance premiums.

Please resubmit your permit application along with plans and specifications that incorporate compliance measures. Construction activities that are undertaken without a proper permit are violations and may result in citations, fines, or other legal action.

Sincerely,

*Edward Teach, Chief Inspector  
Department of Building Inspections  
Floodville, NC*

*919-555-1213*

**Work Does NOT Constitute Repair of Substantial Damage**

Sample Letter to Notify Property Owner of Determination

**NOTICE OF DETERMINATION**

Dear *[name of structure owner]:*

The *City of Floodville* has reviewed your recent application for a permit to repair [*describe proposed improvement/addition*] for the existing residential structure located at *[insert structure address], Floodville, NC 27515*. These repairs are required due to flood damage from the storms of *July 26-28, 2013*.

It has been determined that this structure is located within a mapped Special Flood Hazard Area on the Flood Insurance Rate Map (FIRM), Panel *0150*, with an effective date of *June 19, 2008*. As required by our floodplain management regulations and/or building code, we have determined that the proposed repair work does not constitute Substantial Damage for this structure. This determination is based on a comparison of the cost estimate of the proposed cost of repairs to the pre-damage market value of the structure (excluding land value). When the cost of repairs equals or exceeds 50 percent of the pre-damage market value of the structure, the damage is considered Substantial Damage.

Please be advised that we may need to make another determination if you elect to perform work other than that described and defined in your current permit application. This could include additional renovations or upgrades or building an addition. Construction activities that are undertaken without a proper permit are violations of the City building code and may result in citations, fines, or other legal action.

Let me know if you have any questions on this matter.

Sincerely,

*Edward Teach, Chief Inspector  
Department of Building Inspections  
Floodville, NC*

*919-555-1213*

**MITIGATION INFORMATION**

The Federal Emergency Management Agency (FEMA) and state mitigation programs present a critical opportunity to reduce the risk to individuals and property from natural hazards while simultaneously reducing reliance on federal disaster funds. Mitigation programs can be implemented before, during, and after the flood disaster.

**What is mitigation?**  Any sustained action taken to reduce or eliminate long term risk to human life and property from hazards. Mitigation focuses on breaking the cycle of disaster damage, reconstruction, and repeated damage.

Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program (HMGP) assists in implementing long-term multi-hazard mitigation measures following major disaster declarations. Funding is available to implement projects in accordance with State, Tribal, and local priorities.

Pre-Disaster Mitigation

The Pre-Disaster Mitigation (PDM) program funds are allocated by Congress for an annual competitive application process for hazard mitigation planning and the implementation of mitigation projects. Funding is made available for measures that can be taken to reduce or eliminate overall risk from natural hazards.

Flood Mitigation Assistance

The Flood Mitigation Assistance (FMA) program makes funds available on an annual basis so that measures can be taken to reduce or eliminate risk of flood damage to buildings insured under the National Flood Insurance Program (NFIP).

**Cost Share Requirements**

|  |  |
| --- | --- |
| Program | Mitigation Activity Grant  (Percent Federal/non-Federal) |
| HMGP | Up to 75% / 25% |
| PDM | Up to 75% / 25% |
| FMA | Up to 75% / 25%, 90% / 10%, or 100% |

**Eligible Activities**

* Property Acquisition and Structure Demolition or Relocation
* Structure Elevation
* Mitigation Reconstruction
* Dry Floodproofing of Historic Residential Structures
* Dry Floodproofing of Non‐Residential Structures
* Minor Localized Flood Reduction Projects
* Structural Retrofitting of Existing Buildings
* Non‐Structural Retrofitting of Existing Buildings and Facilities
* Safe Room Construction
* Infrastructure Retrofit
* Soil Stabilization
* Wildfire Mitigation
* Post‐Disaster Code Enforcement
* 5% Initiative Projects
* Mitigation Planning and Planning-Related Activities (HMGP Only)

**Who is Eligible to Apply?**

State governments are eligible applicants. Each State government shall designate one agency to serve as the Applicant for each mitigation program. In North Carolina, that agency is the North Carolina Division of Emergency Management. All interested property owners should apply to NCEM through the local or county government or the local emergency manager. Individuals and businesses may not apply directly to FEMA. An approved and adopted Local Mitigation Plan is a prerequisite to apply for federal mitigation funding. Requests for state mitigation funding should be made to the applicable state agency.

**Eligibility Requirements**

All mitigation projects must be cost‐effective, meet both engineering and technical feasibility criteria, and clear Environmental Planning and Historic Preservation requirements in accordance with the State and Federal Guidance. In addition, all mitigation activities must adhere to all relevant statutes, regulations, and requirements including other applicable Federal, State, Indian Tribal, and local laws, implementing regulations, and Executive Orders.

* NFIP Participation Requirement
* Permanent or long-term solution
* Cost/Benefit Requirement
* Cost Share Requirement
* Environmentally Sound
* Complements State Priorities/ Local Mitigation Plan
* Supported by community
* Strictly Voluntary Participation
* Selected from Competitive process

**FLOODPLAIN MAPPING, MANAGEMENT, AND INSURANCE CONTACTS**

**NC FLOODPLAIN MAPPING PROGRAM http://fris.nc.gov/fris**

John Dorman, CFM, Director John.Dorman@ncdps.gov (919) 825-2310

Gary Thompson, PLS, Assistant Director Gary.Thompson@ncdps.gov (919) 948-7844

Tonda Shelton, CFM, Program Manager Tonda.Shelton@ncdps.gov (919) 825-2345

Tom Langan, PE, CFM, Engineering Supervisor Tom.Langan@ncdps.gov (919) 825-2328

Dan Brubaker, PE, CFM, Engineer Dan.Brubaker@ncdps.gov (919) 825-2300

Scott Gentry, PE, CFM, Engineer Scott.Gentry@ncdps.gov (919) 825-2318

Tyler Longberry, PE, CFM, Engineer Tyler.Longberry@ncdps.gov (919) 825-2338

David Herlong, Flood Warning Management Engineer David.Herlong@ncdps.gov (919) 825-2322

Randy Mundt, AICP, CFM, Community Development Planner III Randy.Mundt@ncdps.gov (919) 825-2339  
 Stacey Fuller Bobbitt, CFM, Community Development Planner II Stacey.Bobbitt@ncdps.gov (919) 825-2315

Steve Garrett, CFM, LOMC Manager/Community Development Planner II Steve.Garrett@ncdps.gov (919) 825-2316

Vacant, IT Manager for Applications (919) 825-2348

Jamie Hammermann, Database Administrator Jamie.Hammermann@ncdps.gov (919) 825-2308

Hope Morgan, PLS, GISP, CFM, GIS Manager Hope.Morgan@ncdps.gov (919) 825-2336  
 Colleen Kiley, GISP, GIS Analyst Colleen.Kiley@ncdps.gov (919) 825-2296

John Lay, GISP, CFM, GIS Analyst John.Lay@ncdps.gov (919) 825-2330

**NC FLOODPLAIN MANAGEMENT BRANCH http://flood.nc.gov/ncflood** Dan Brubaker, PE, CFM, State NFIP Coordinator Dan.Brubaker@ncdps.gov (919) 825-2300

Randy Mundt, AICP, CFM, Community Development Planner III Randy.Mundt@ncdps.gov (919) 825-2339

Milton Carpenter, CFM, Planner, Central Area Milton.Carpenter@ncdps.gov (919) 825-2302

Terry Foxx, CFM, Planner, Western Branch Terry.Foxx@ncdps.gov (828) 228-8526

Vacant, Planner, Eastern Branch (919) 825-2289

**NC HAZARD MITIGATION PLANNING** Chris Crew, CFM, State Hazard Mitigation Officer John.Crew@ncdps.gov (919) 825-2305

Ryan Cox, CFM, EM Planner II Ryan.Cox@ncdps.gov (919) 825-2311

John Mello, CFM, Mitigation Specialist John.Mello@ncdps.gov (919) 825-2334

Vacant, Mitigation Specialist (919) 825-xxxx

Vacant, Mitigation Specialist (919) 825-xxxx

**FEMA, REGION IV, 3003 Chamblee Tucker Rd - Hollins Bldg, Atlanta, GA 30341****-4112   
https://www.fema.gov/region-iv-al-fl-ga-ky-ms-nc-sc-tn**

Tamara Hansen, CFM, Floodplain Mitigation Specialist tamara.hansen@fema.dhs.gov(770)220-8835  
 Janice B. Mitchell, Insurance Specialist janice.mitchell@dhs.gov (770) 220-5441

Jason Hunter, CFM, Chief, Floodplain Management & Insurance Branch jason.hunter@dhs.gov (770) 220-5414

Kristen Martinenza, P.E., CFM, Chief, Risk Analysis Branch kristen.martinenza@fema.dhs.gov (770) 220-3174

FAX (770) 220-5440

**NFIP BUREAU & STATISTICAL AGENT – Region IV   
https://www.fema.gov/national-flood-insurance-program-bureau-statistical-agent-regional-support-offices**

Information about policies, ratings, coverage, claims, lender and agent workshops, etc:

David Clukie, CFM, Regional Liaison, NFIP Region IV DClukie@ostglobal.com (678) 808-8983

**NFIP CONSUMER & AGENT INFORMATION http://www.fema.gov/national-flood-insurance-program** *or* **http://www.floodsmart.gov**

NFIP Information and NFIP Agent Referral line (888) 435-6637

**COMMUNITY RATING SYSTEM**

**http://www.fema.gov/national-flood-insurance-program/community-rating-system Office / Fax Number**

Mandy Todd, AICP, CFM, ISO/CRS Specialist, 1993 Meadowood Lane, Longs, SC 29568 ktodd@ISO .com (843) 399-5127

Mike Bratcher, CFM, ISO/CRS Specialist, 213 West Broad Street, Beulaville, NC 28518 jbratcher@iso.com (910) 298-2303

**FEMA MAP INFORMATION eXchange (FMIX)** \_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **https://floodmaps.fema.gov/fhm/fmx\_main.html**

Technical assistance,LOMA/LOMR requests - ***toll free*** (877) 336-2627 (877-FEMA-MAP)

Flood Insurance Rate Maps and Flood Insurance Studies **https://msc.fema.gov/portal**

FEMA Map Service Center, P.O. Box 3617 Oakton, VA 22124-9617 (877) 336-2627 FAX (703) 212-4090

***Community Status Book*** – See Current Effective Map column for FIRM Index date **http://www.fema.gov/cis/NC.pdf**

**NFIP PUBLICATIONS & TECHNICAL BULLETINS**

**http://www.fema.gov/flood-insurance-library, http://www.fema.gov/floodplain-management-publications** *and* **https://www.fema.gov/media-library/resources-documents/collections/4**