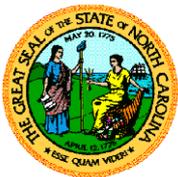


# Brunswick County Preliminary Flood Hazard Data Public Meeting

18 August 2015





# Why Are We Here

- \* New flood hazard data has been released as ‘Preliminary’ for Brunswick County
- \* Statutory ‘Due Process’ for review/comments on new data
- \* Develop an understanding for both the process and the results of updating flood hazard data
- \* Local government hosts this meeting to identify resources that can help you find answers to your questions



# PURPOSE OF NFIP

- \* To make flood insurance available
- \* To identify floodplains and areas at risk of flooding
- \* To provide standards, guidance, and a framework to help communities manage floodplains

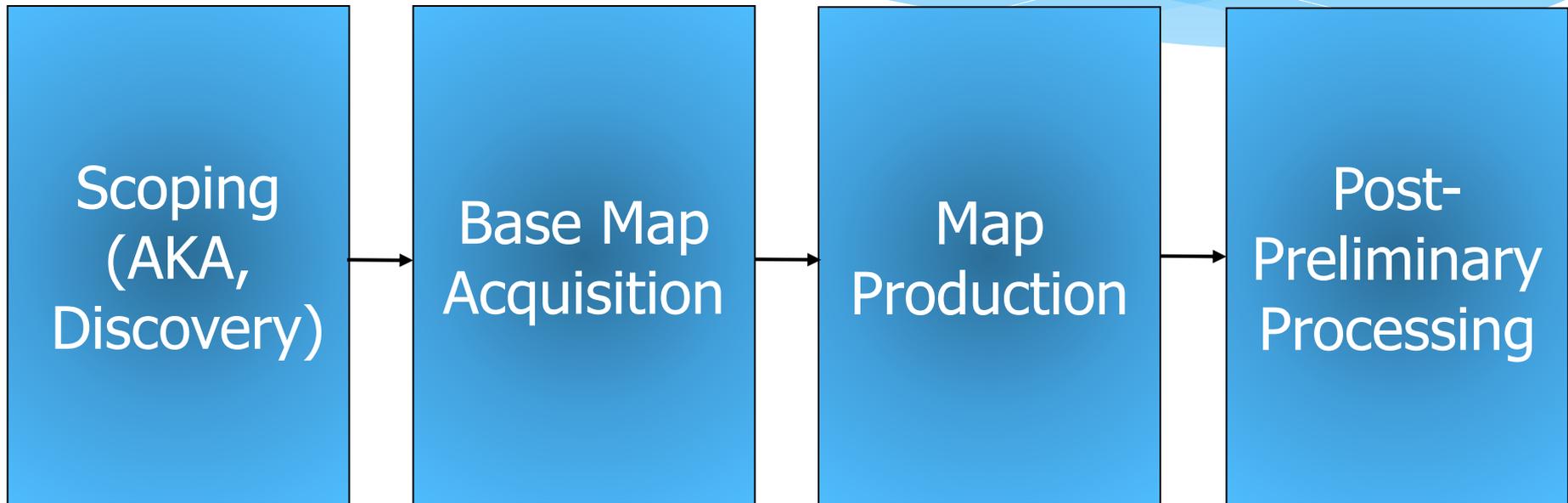
# DEFINITIONS

- \* **Digital Flood Insurance Rate Map (DFIRM)**
  - \* A digitally-produced FIRM, whether viewed in hardcopy or in digital form
  - \* All FIRMs produced by the North Carolina Floodplain Mapping Program are DFIRMs
- \* **Flood Insurance Study (FIS)**
  - \* Details the examination, evaluation, and determination of flood hazard areas
  - \* FIRMs are part of the FIS
- \* **Base Flood Elevation (BFE)**
  - \* As shown on the FIRM, represents whole-foot elevations of the 1% annual chance flood
  - \* Regulated to the nearest tenth of a foot; detailed information provided in the FIS and displayed on the FRIS

# DEFINITIONS

- \* Special Flood Hazard Area (SFHA)
  - \* The 1% annual chance floodplain, where NFIP regulations must be enforced by the community as a condition of participation in the NFIP
- \* Floodway (and Non-Encroachment Area)
  - \* The portion of the SFHA, including the channel of a river or other watercourse, that must be reserved (free of development) in order to allow the discharge of the base flood without increasing the water-surface elevation more than one foot at any point along the stream

# MAPPING PROCESS



# POST-PRELIMINARY PROCESSING

- ⦿ Preliminary flood hazard data (FIS/FIRM) for Brunswick County mailed on August 29, 2014
- ⦿ 90-Day Appeal/Protest Period: **TBD; likely August/September, 2015**
- ⦿ Meeting with Public Officials: September 16, 2014
- ⦿ Public Participation Meeting: **August 18, 2015**
  - \* Opportunity for public to view, comment on, and ask questions about the new flood hazard data
- ⦿ Letter of Final Determination: FEMA determines flood hazard data is official for flood insurance rating and floodplain management applications

# POST-PRELIMINARY PROCESSING

## Local Responsibilities

- ⦿ Work with Citizens to understand preliminary data
- ⦿ Review preliminary data for errors and missing information within the 90-day review period
- ⦿ Forward appeals and/or comments from the public and local officials to the state and FEMA
- ⦿ Adopt Ordinances Changes

# POST-PRELIMINARY PROCESSING

## Appeals

- \* An appeal is a formal objection to new or revised BFEs, SFHA and Floodway boundaries in the preliminary data that is submitted during the 90-day appeal period
- \* Appeals are based on data that show proposed BFEs to be scientifically or technically incorrect

*See Expanded Appeals Process Fact Sheet  
for additional information and online resources*

# Expanded Appeals Process (New)

- \* Due Process required for all proposed changes in the SFHA with possible insurance impacts; now includes:
  - \* Changes to BFE
  - \* Modification of any SFHA boundary
  - \* Zone designations
  - \* Floodway boundaries (increases and decreases in extent)

Scientific and/or Technical data still required as part of an Appeal

# POST-PRELIMINARY PROCESSING

## Comments

- ⦿ A comment is a formal objection to the information in the FIS Report and/or shown on the FIRM panels not related to BFEs
- ⦿ Comments generally involve concerns regarding the corporate limits, Extraterritorial Jurisdiction (ETJ) boundaries, and road names or locations

# POST-PRELIMINARY PROCESSING

## Appeals & Comments

### SUBMIT TO:

\* John Dorman, Director  
NCFMP  
4218 Mail Service Center  
Raleigh, NC 27699-4218  
(919) 825-2310

\* Luis Rodriguez, Chief  
Engineering Management Branch  
Federal Insurance and Mitigation  
Administration  
FEMA  
500 C Street, S.W., Room 423  
Washington, D.C. 20472  
(202) 646-4064

The appeal period for Brunswick County is  
TBD ; likely August/September, 2015

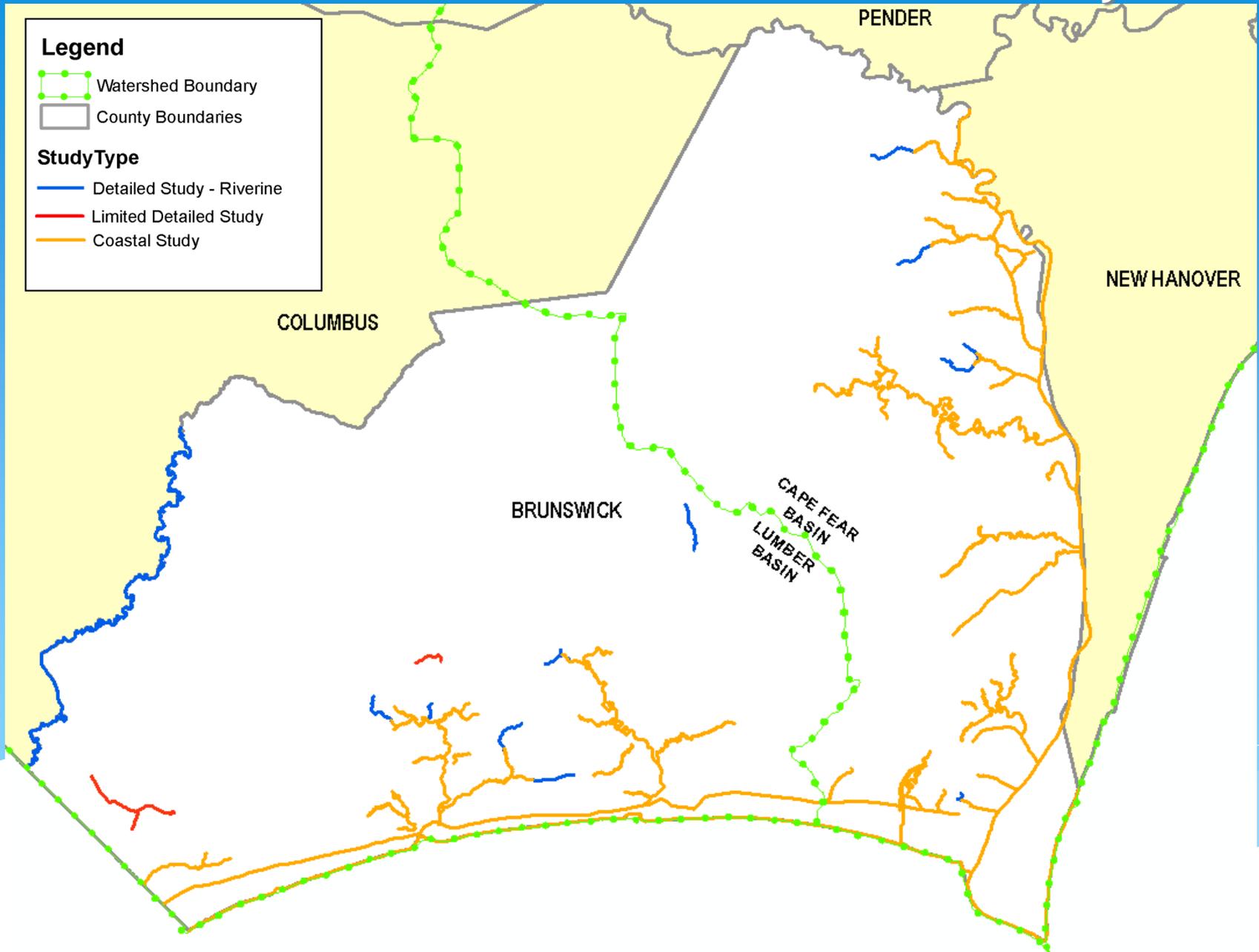
# POST-PRELIMINARY PROCESSING

## Effective Date

- \* Changes to the preliminary flood data [i.e. flood zones, boundaries and base flood elevations] will not affect flood insurance policies until the **effective** date of the FIS
- \* This date will be established by FEMA through the Letter of Final Determination (LFD) once submitted appeals and comments are evaluated and resolved

# Brunswick County Revision

# Streams Studied in Brunswick County

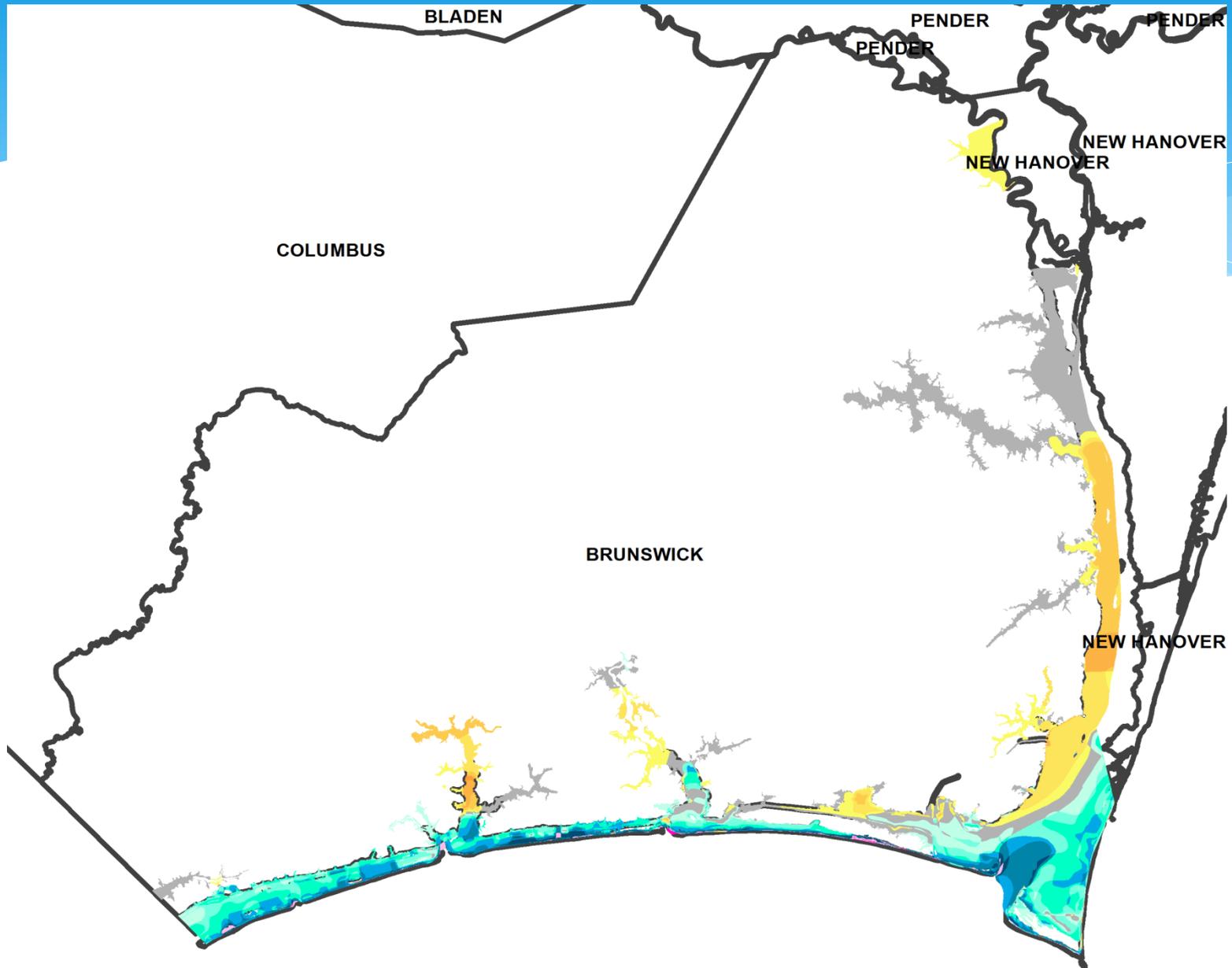


# Brunswick County: By the numbers...

<b>Item</b>	<b>Quantity</b>
Detailed Study (includes coastal)	110.6 miles
Limited Detailed Study	6.8 miles
Redelineation	N/A
Printed Cross Sections	3,906
Special Flood Hazard Area	347 sq miles
County Area	894 sq miles

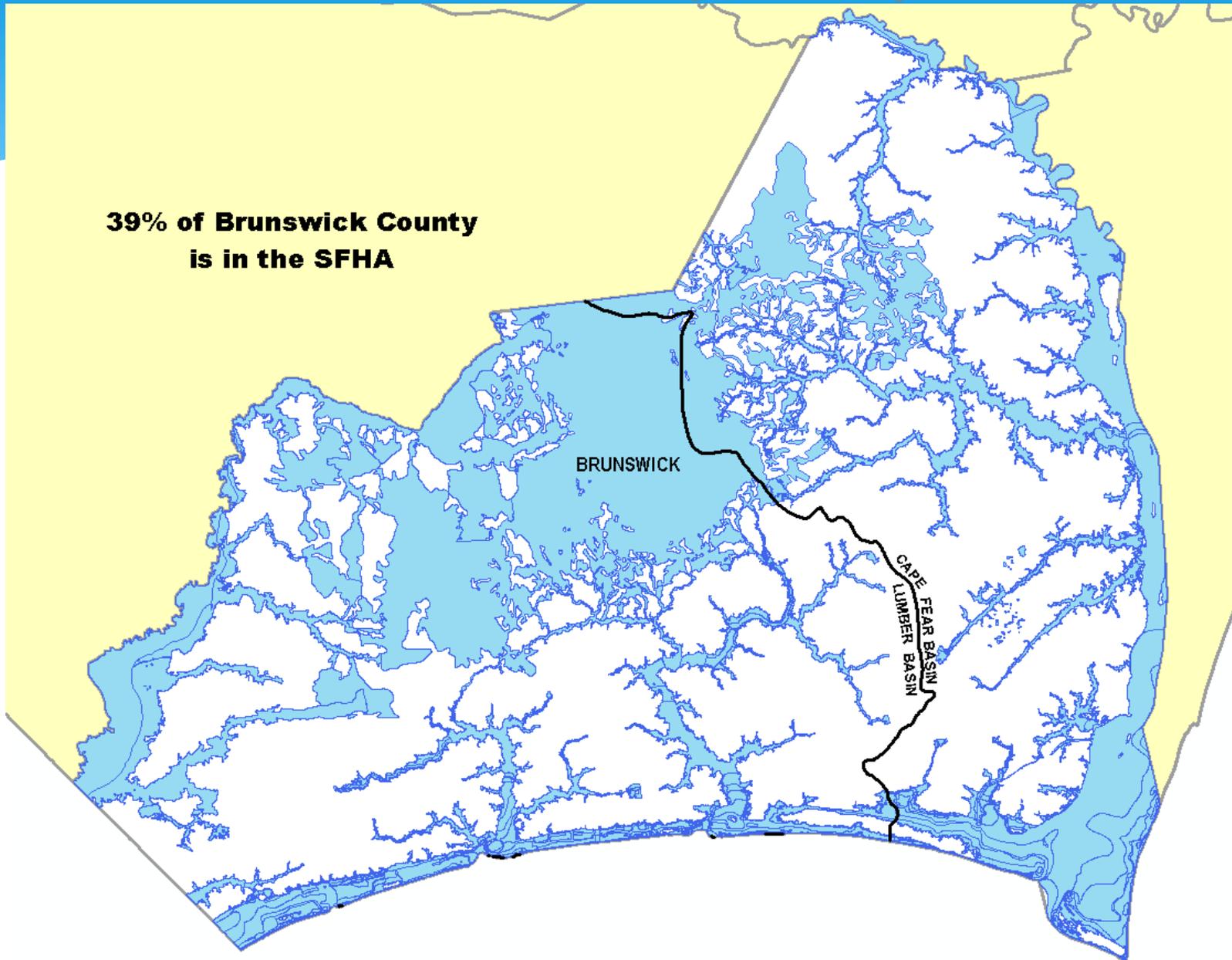
Effective maps for Brunswick County are dated June 2, 2006, February 16, 2007, and October 16, 2008.

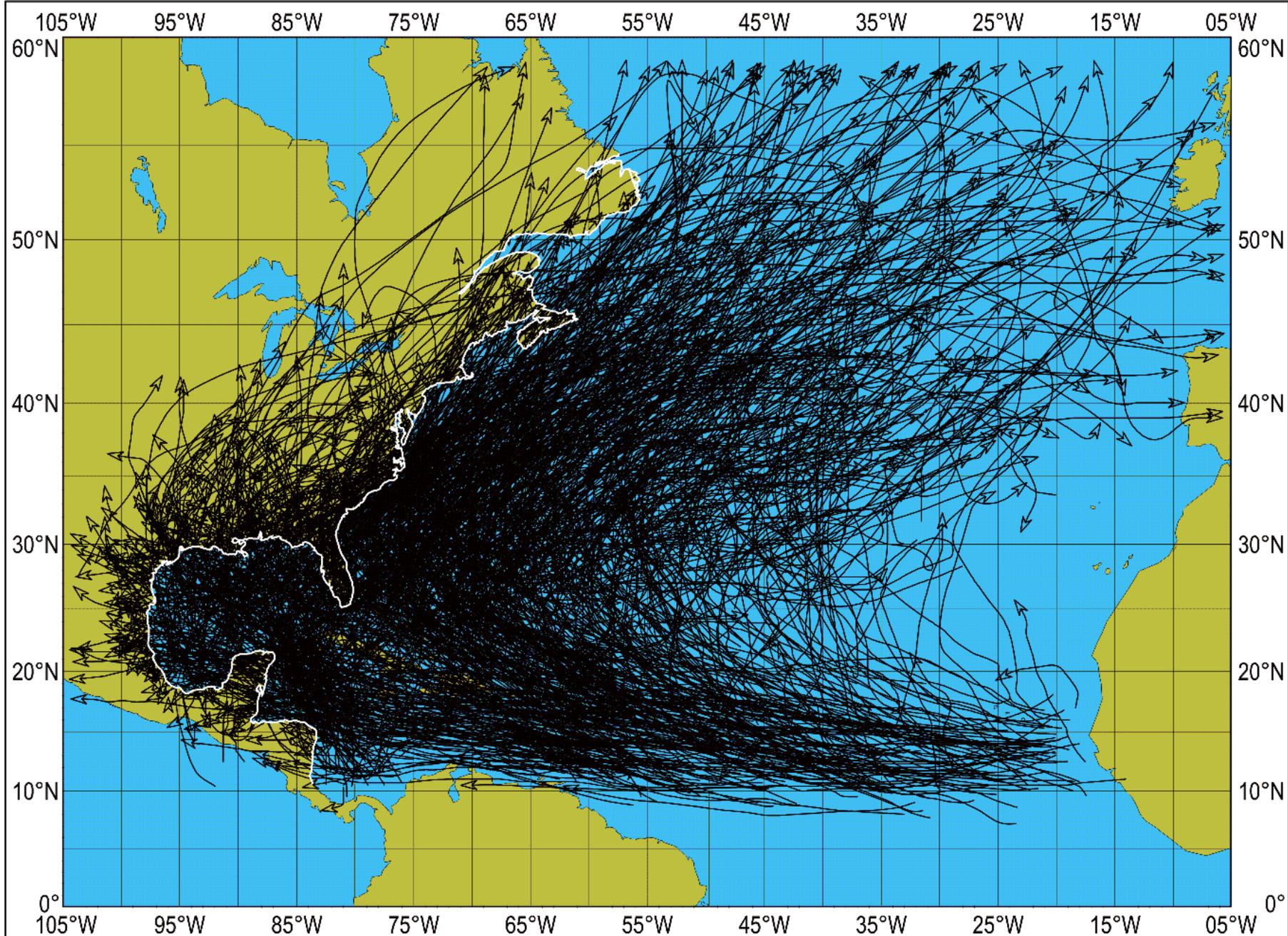
# What are the Changes: Big Picture



# Brunswick County Floodplains

**39% of Brunswick County  
is in the SFHA**





**NORTH ATLANTIC TROPICAL STORMS AND HURRICANES, 1851-2004 (1325 STORMS)**

NOAA

# The Need for Coastal Flood Hazard Studies

The coast of North Carolina can expect to receive a tropical storm or a hurricane once every four years, while a tropical cyclone affects the state every 1.3 years.

## North Carolina Tropical Cyclone Statistics (1886-1996)

	Direct Land falling Tropical Cyclones in NC	Tropical Cyclones that passed through NC
<b>Number of Storms</b>	28	82
<b>Percentage of Storms</b>	2.9	8.6
<b>Average number of years between storms</b>	<b>4</b>	<b>1.3</b>
<b>Average number of storms per year</b>	0.25	0.74

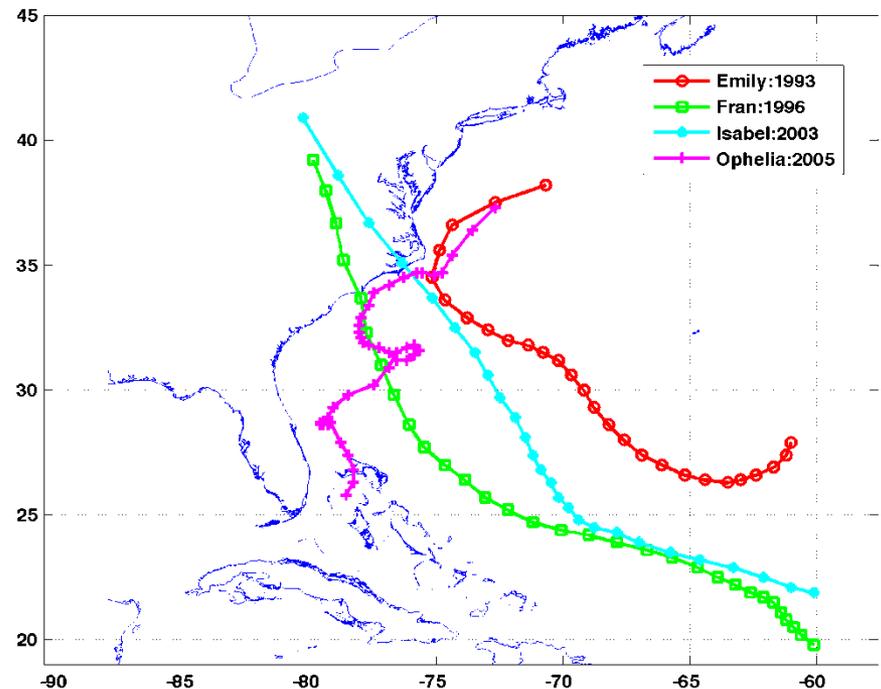
Table 1. Number and percentage of hurricanes and tropical storms to make direct landfall in North Carolina from 1886 through 1996. Number of years between storms (period) and number of storms per year (frequency) are also given. Data compiled from the Colorado State Tropical Cyclone database.

# Context for the New Study

- Significant Surge Events since 1980

- \* Effective Studies
  - \* Surge Data Circa 1980
- \* FEMA Moratorium
- \* NCFMP Studies
  - \* No Surge Update
  - \* Redelineation
  - \* New Studies
    - \* Wave Height
    - \* Wave Analysis

- Fran
- Isabel
- Ophelia
- Gulf Coast



\* On October 1, 1988, the definition of the Coastal High Hazard Area in the NFIP regulations was revised as follows:

***“An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.”***

# Coastal Flood Hazard Analyses



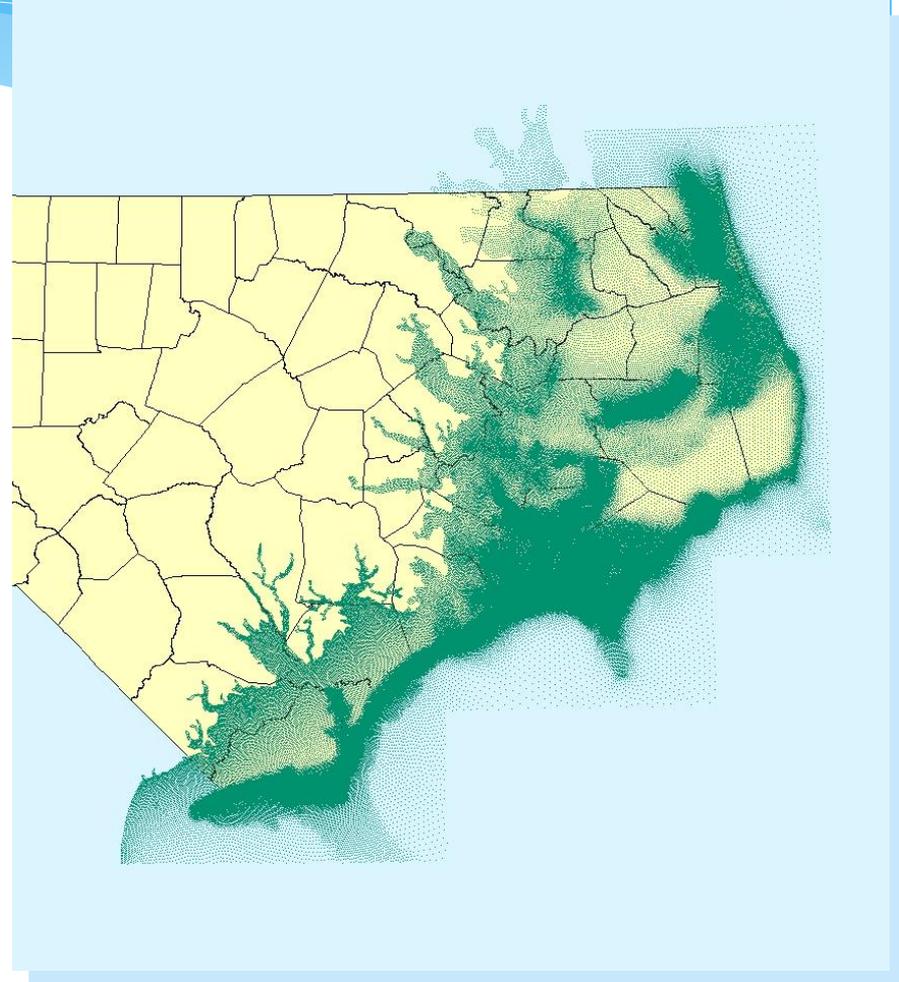
# NCFMP Coastal Restudy

## \* Scale

- \* Entire Coastline
  - \* Barrier Islands
  - \* “Closed Coast”
    - \* Bays – Ablemarle, Pamlico
    - \* ICW
    - \* Rivers

## \* Scope

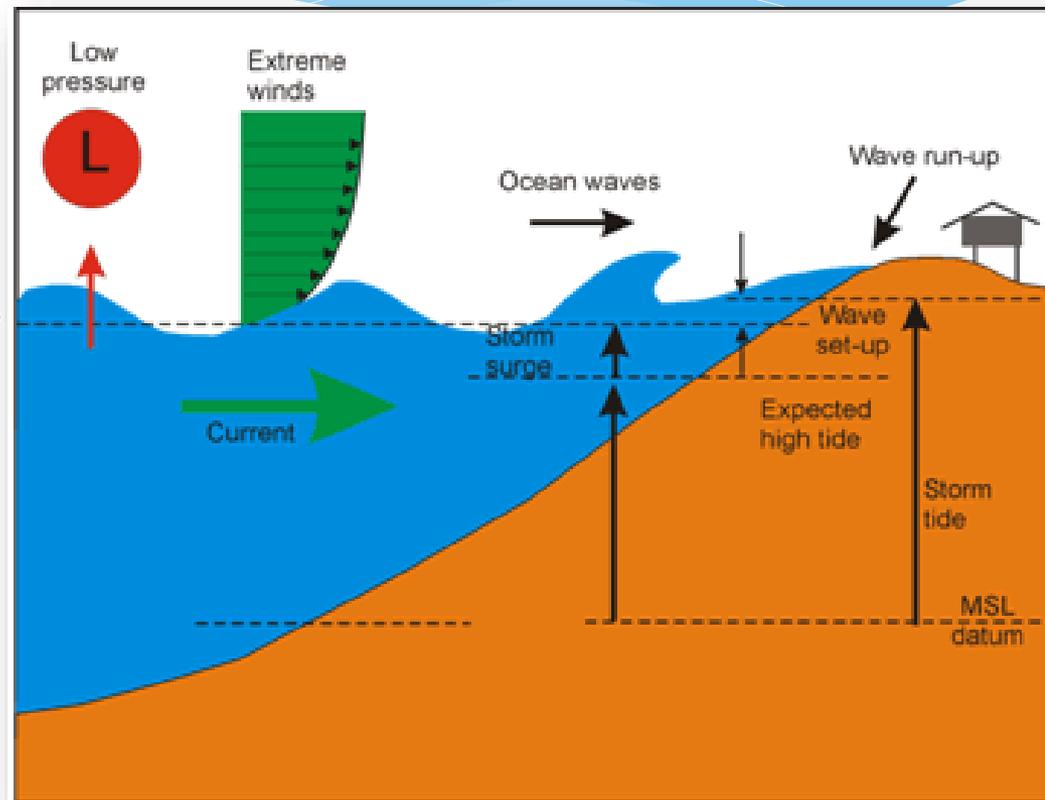
- \* Storm Surge
- \* Onshore Wave Analysis
- \* DFIRM Production



# FEMA Coastal Flood Hazards

BFE on FIRM includes 4 components:

1. **Storm Surge**
2. **Wave Setup**
3. **Overland Waves**
4. **Wave Runup**



# FEMA Coastal Flood Hazards

BFE on FIRM includes 4 components:

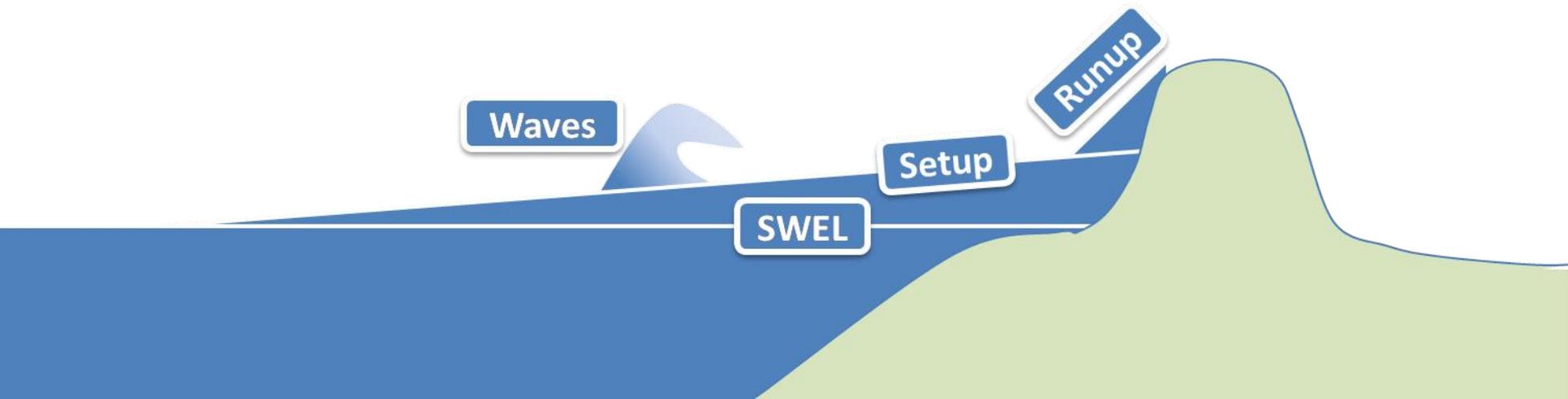
Storm surge stillwater elevation (SWEL)

Wave setup (Wind forcing component from SWAN added to ADCIRC model)

Wave height above storm surge elevation

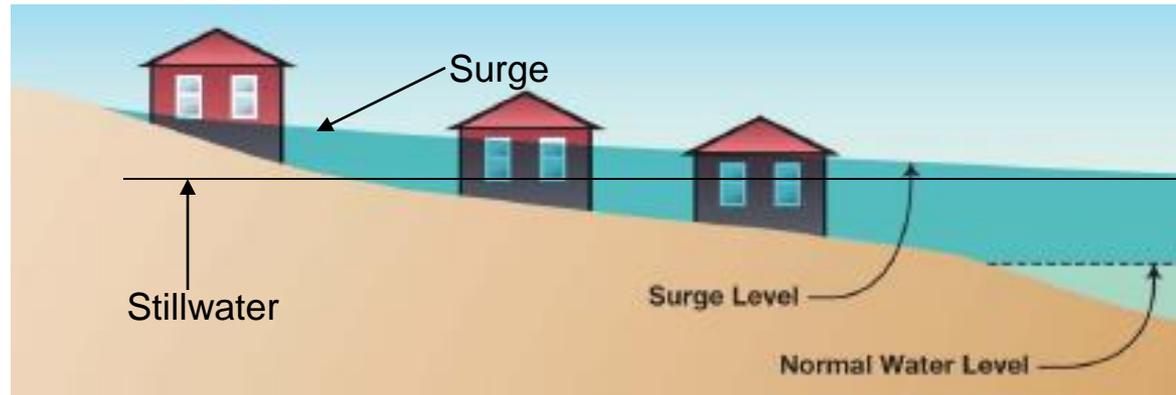
Wave runup above storm surge limits

All applied to an eroded beach profile

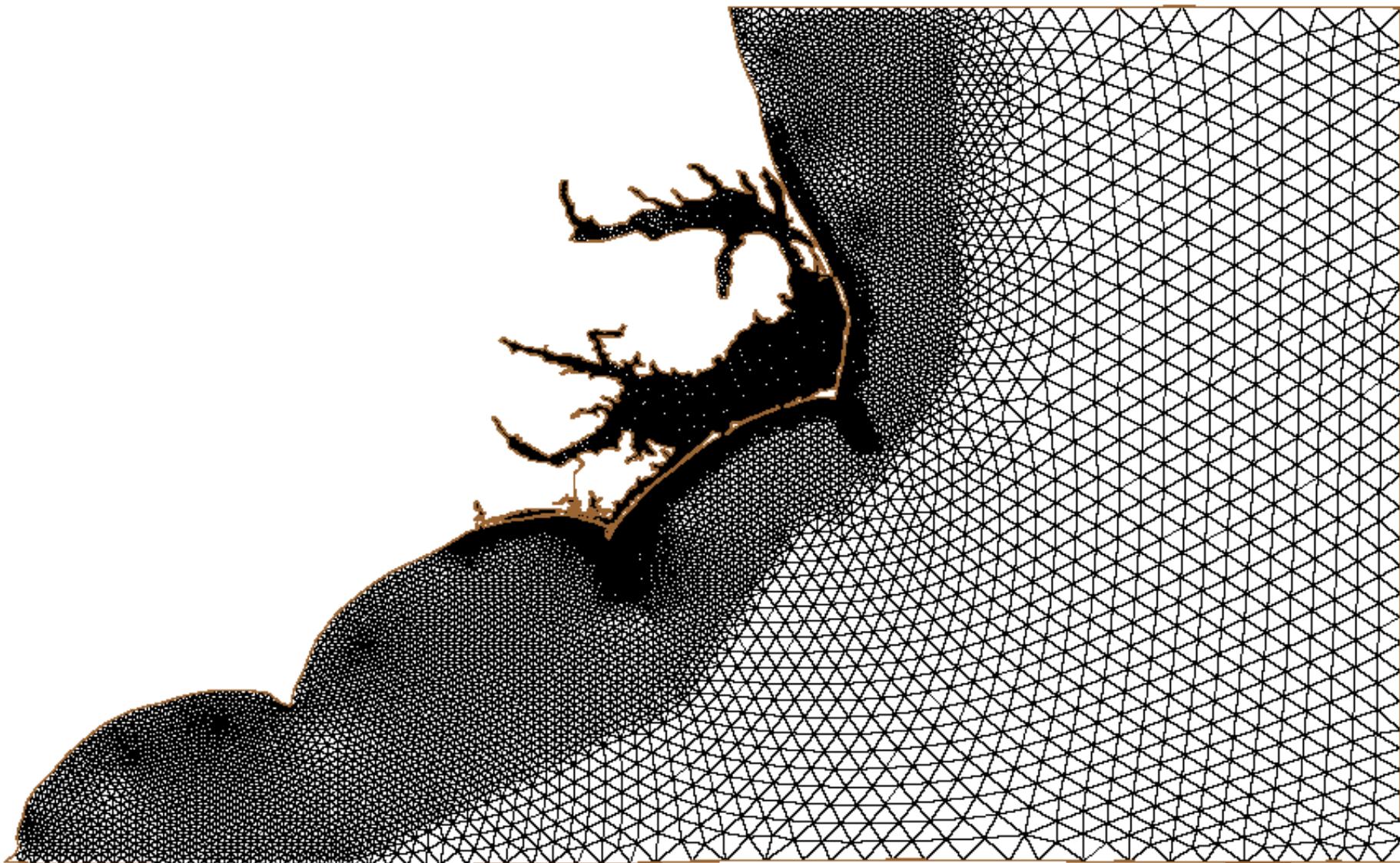


# What is Storm Surge?

- **FEMA** – increase in stillwater elevation caused by a strong onshore wind.
- Combined effect of the increase in sea level by the water being pushed against the shore by an approaching storm and the winds pushing against the shore.

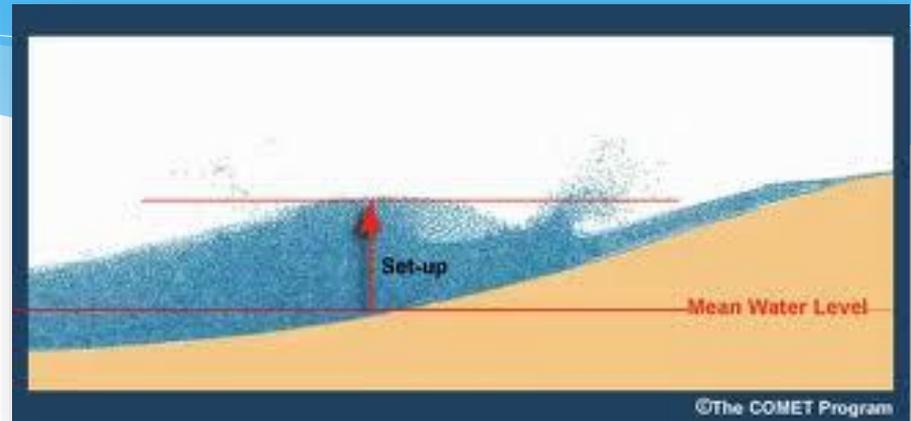


# North Carolina's Surge Mesh



# Wave Setup & Runup

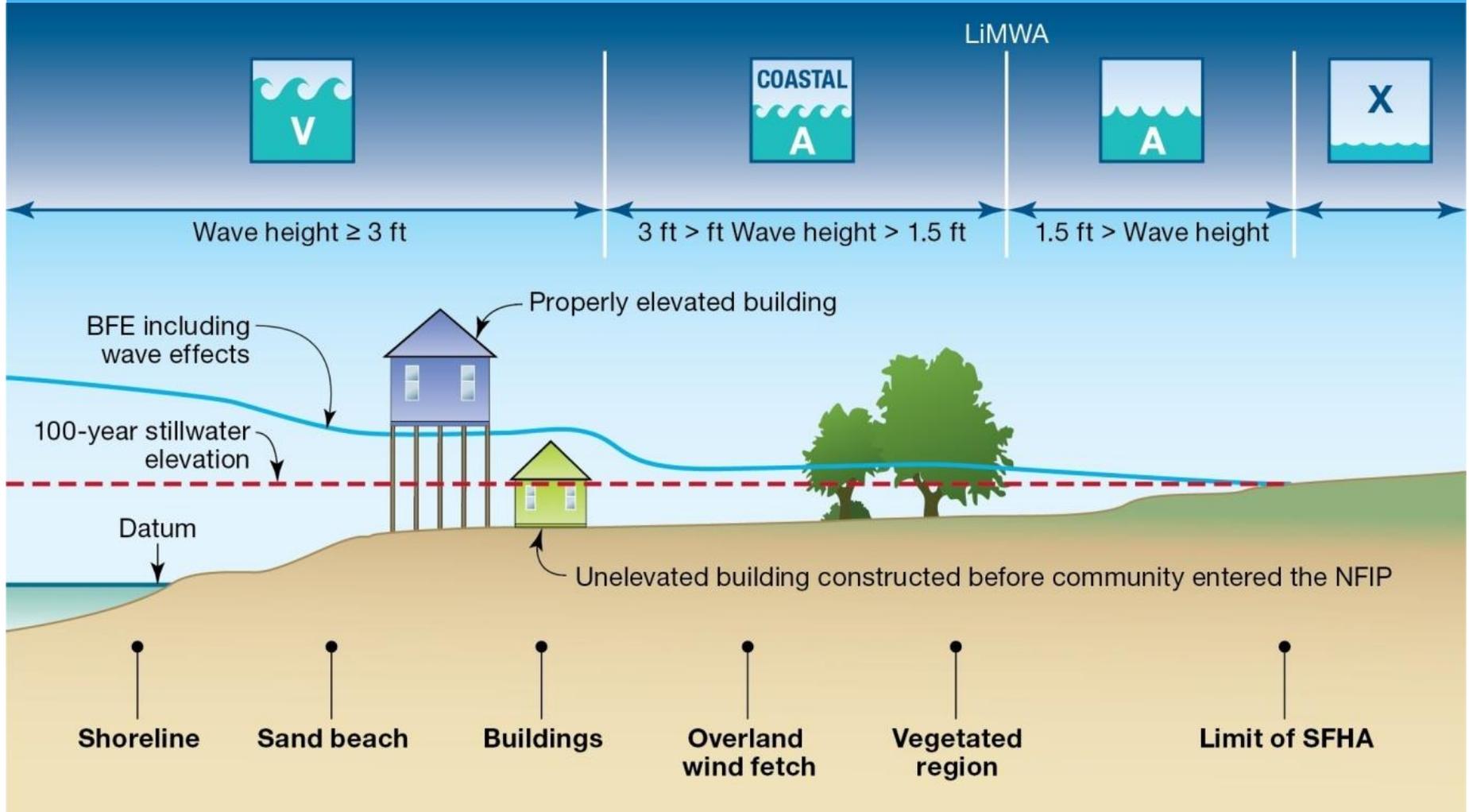
- \* **Wave Setup:** a rise in MWL above SWEL due to the transfer of momentum from breaking waves to the water column



- \* **Wave Runup:** the uprush of waves on steep features at the water's edge



# Coastal Flood Hazards



# Coastal Flood Zone Designations

- \* VE: coastal high hazard zone, waves >3ft, catastrophic structural damages expected
  - \* Common at open coast shoreline, bay shoreline, open water areas
  - \* Can regenerate inland in low-lying or over-water areas
  - \* Extended to PFD by default
- \* AE: subject to inundation by 1% flood, BFE shown, waves present
  - \* Representative of most of coastal floodplain

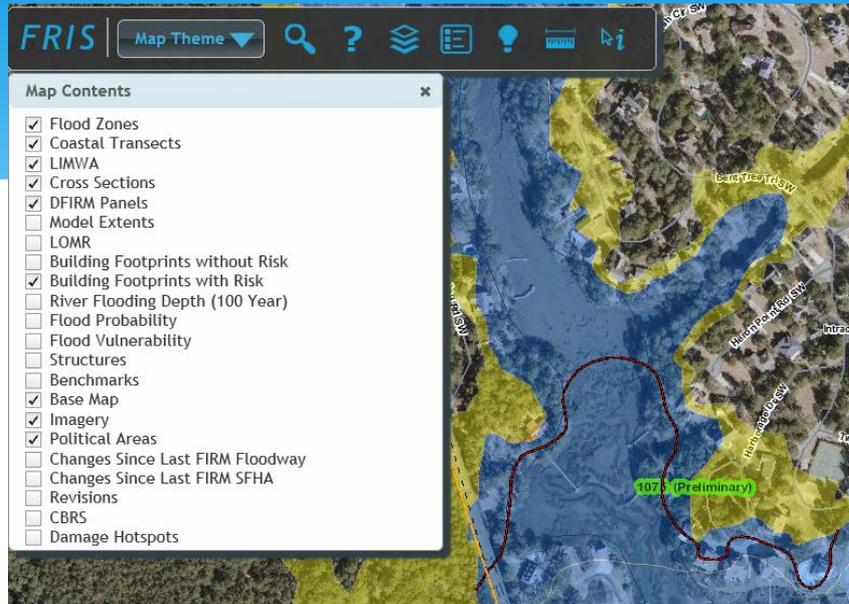
# Coastal Flood Zone Designations

- \* **LiMWA:** Limit of Moderate Wave Action, delineates extent of waves >1.5ft, moderate structural damages expected
  - \* Bisects AE Zone
  - \* Several instances may occur across floodplain
- \* **AO:** subject to inundation by 1% flood, shallow flooding - sheet flow (susceptible to scour/erosion), 1% water depths shown
  - \* Typical on the backside of dunes (overtopping)
- \* **AH:** subject to inundation by 1% flood, shallow flooding – ponding, BFE's are provided



# LiMWA example

\* FRIS:



\* DFIRM:



# Procedure Memorandum 50

- \* LiMWA
  - \* Introduction
  - \* FP Management Guidance
  - \* CRS
  - \* Determination
  - \* Mapping
  - \* Cartographic Definition

US Department of Homeland Security  
500 C Street, SW  
Washington, DC 20472



FEMA

December 3, 2008

**MEMORANDUM FOR:** Regional Mitigation Division Directors  
Regions 1 – X

*Michael K. Buckley*  
**FROM:** Michael K. Buckley, Acting Assistant Administrator  
Mitigation Directorate

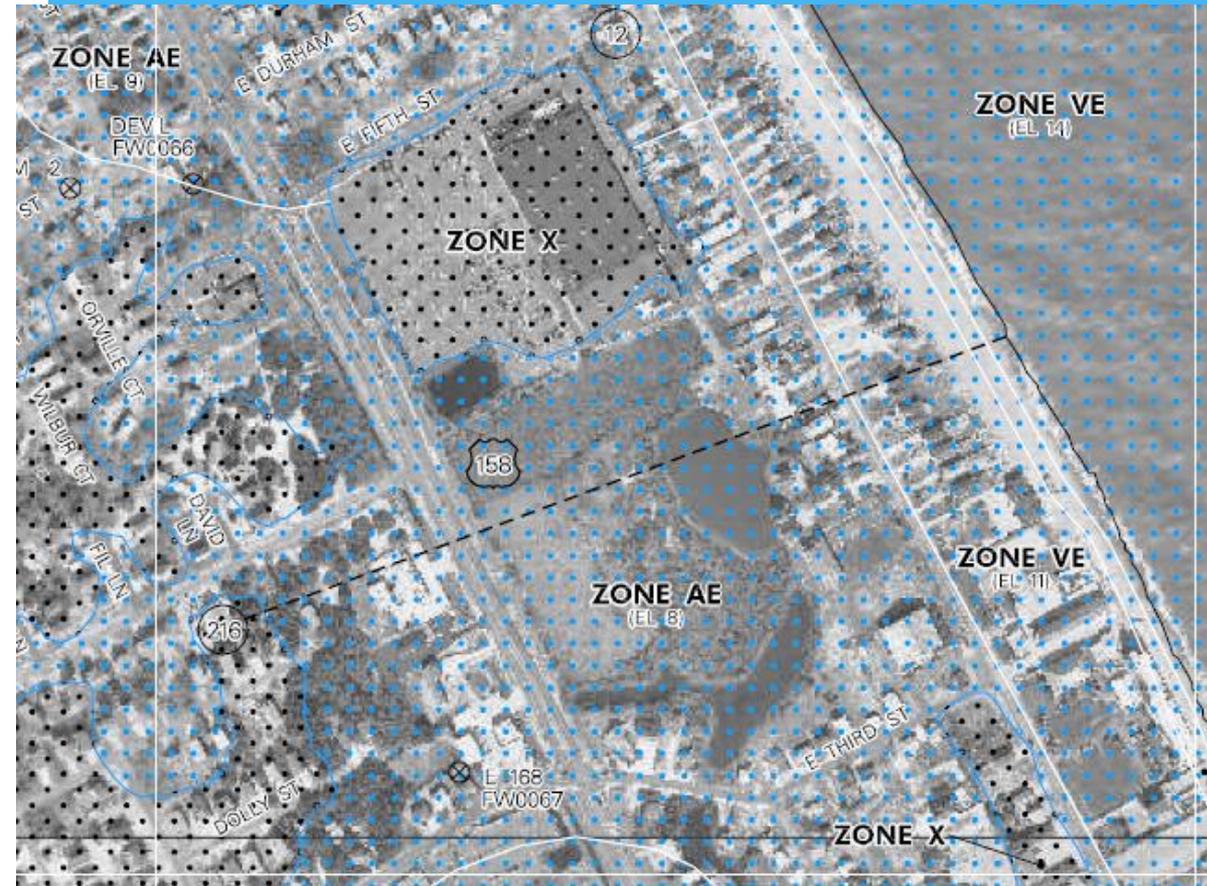
**SUBJECT:** Procedure Memorandum No. 50 – Policy and Procedures for  
Identifying and Mapping Areas Subject to Wave Heights Greater  
than 1.5 feet as an Informational Layer on Flood Insurance Rate  
Maps (FIRMs)

**EFFECTIVE DATE:** Immediately

**Background:** Flood hazard identification under the National Flood Insurance Program (NFIP) divides coastal flood hazard areas into two flood zones: Zone VE and Zone AE. Present NFIP regulations make no distinction between the design and construction requirements for coastal AE Zones and riverine AE Zones. However, evidence suggests that design and construction requirements in some portions of coastal AE zones should be more like VE Zone requirements. Post-storm investigations have shown that typical AE Zone construction techniques (e.g., wood-frame, light gauge steel, or masonry walls on shallow footings or slabs, etc.) are subject to damage when exposed to waves less than 3-feet in height. One of the hazard identification criteria for VE Zone designation is where wave heights are estimated to be equal to or greater than 3 feet. Laboratory tests and field investigations confirm that wave heights as small as 1.5 feet can cause failure of the above-listed wall types. Other flood hazards associated with coastal waves (e.g., floating debris, high velocity flow, erosion, and scour) also damage AE Zone-type construction in these coastal areas.

In the past, some Flood Recovery Maps, developed in response to significant coastal flooding events, have shown the landward limit of the area subject to wave heights greater than 1.5 feet. This limit has been provided to communities and shown on the recovery maps as an informational layer to assist in safe rebuilding practices. The NFIP Community Rating System provides credits for communities that adopt and enforce more stringent floodplain management requirements in these areas. The 2006 *International Building Code* references the American Society of Civil Engineers (ASCE) 24-05 *Flood Resistant Design and Construction* standard, which has specific design requirements that apply to areas which may be affected by waves greater than 1.5 feet (which ASCE 24 refers to as Coastal A Zones). In addition, every Federal Emergency Management Agency (FEMA) coastal construction publication since the issuance of "FEMA 55 Coastal Construction Manual," dated June 2000, has recommended the use of VE

# How Is Wave Action Modeled?



- WHAFIS
  - Transects
    - LiDAR
    - Field Survey
  - Field Visits
  - Vegetation
  - Buildings
- Models how topography and obstructions diminish wave action.

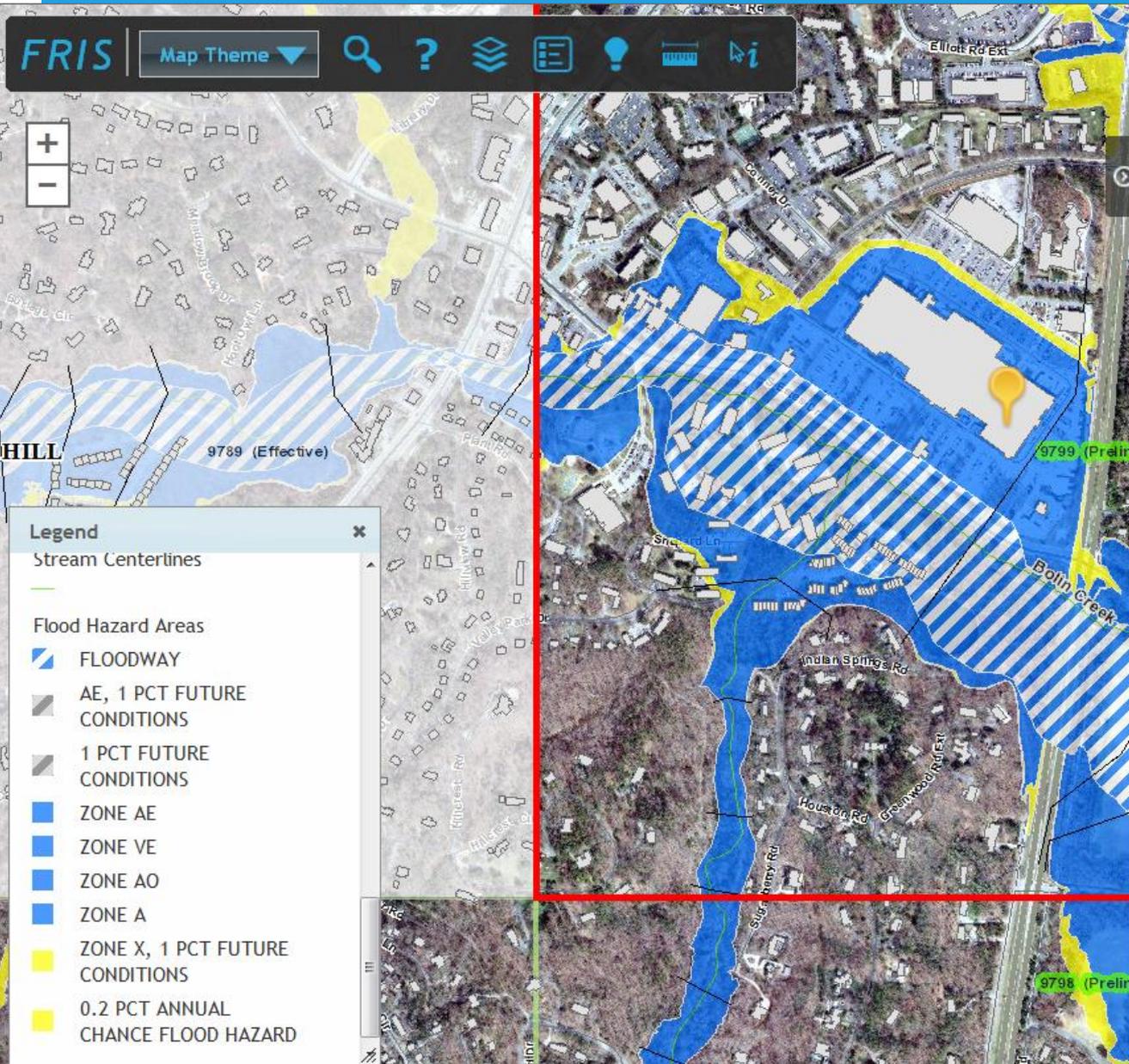
# Accessing Digital Flood Hazard Data from the Flood Risk Information System (FRIS)

**<http://fris.nc.gov/fris/>**

# Flood Data in Digital Database Format

- \* Key Elements of the data include:
  - \* Zone designations
  - \* Base Flood Elevations
  - \* Depth of water elevations on buildings
- \* Print-on-demand available
  - \* Flood Information Study (FIS)
  - \* Flood Insurance Rate Maps (FIRMs)
- \* FRIS shows updated Panels with **Green** Borders; effective panels shaded out in the “Preliminary” view

# FRIS FIRM Map Symbolology



Who Am I : General Public ▼ Preliminary ▼

**Flood Information**

Preliminary Panels are outlined in  ?

**This panel's status is Preliminary.**

**213 S Estes Dr, Chapel Hill, NC**  
[Google Street View](#)

📍 Map Location

Flood Zone: **AE** ↑

Flood Source: Bolin Creek

Base Flood Elevation: 261.5 ft 🔊 More ▼

County: Orange

Political Area: Town Of Chapel Hill

CID: 370180

Panel: 9799

Map Number: 3710979901L

Preliminary Issuance Date: **08/30/13**

Latitude: 35.92702

Longitude: -79.02612

[▶ Risk Information](#)

[▶ Financial Vulnerability](#)

[▶ FIS Reports](#)

[▶ Map Export](#)

[▶ Data Export](#)

# FRIS FIRM Map Symbology

The interface displays a map of Carolina Beach, NC, with flood zones overlaid. The map shows various streets and a large body of water. A yellow area on the left side of the map is labeled 'ZONE VE (EL 16)'. A blue area in the center is labeled 'ZONE VE (EL 11)'. A yellow pin on the map is labeled '3130 (Preliminary)'. The top left corner features the 'FRIS' logo and a 'Map Theme' dropdown menu. The top right corner has 'Who Am I: Advanced' and 'Preliminary' dropdown menus. The right side of the interface contains a 'Flood Information' panel with a 'Preliminary Panels are outlined in' checkbox and a question mark icon. Below this is a green bar with the text 'This panel's status is Preliminary.' The panel lists the following information:

- Map Location
- Flood Zone: VE
- Flood Source: Atlantic Ocean
- Base Flood Elevation: 16 ft
- County: New Hanover
- Political Area: Town Of Carolina Beach
- CID: 375347
- Panel: 3130 [Download](#)
- Map Number: 3720313000K
- Preliminary Issuance Date: 08/29/2014
- Latitude: 34.03054
- Longitude: -77.89272

A yellow box at the bottom of the panel contains the following text:

- Address locations are approximate.
- [299 S Carolina Beach Ave, Carolina Beach, NC](#)

The bottom of the interface features a vertical list of menu items:

- Risk Information
- Financial Vulnerability
- FIS Reports
- Flood Risk Management Plan
- Engineering Models
- Map Export

# FRIS Data Downloads



## Data Search

County:

DFIRM:

Stream:

Select a DFIRM Panel to view additional datasets.

Select a stream to see Engineering Models.

## Brunswick

- Shapefiles
- Preliminary Transect Locator
- Preliminary Shapefiles
- Preliminary Index Map
- Preliminary File Geodatabase
- LiDARD2
- LiDARBE
- LIDAR DEM 50
- LIDAR DEM 20
- LIDAR Bare Earth
- File Geodatabase
- Effective Index Map

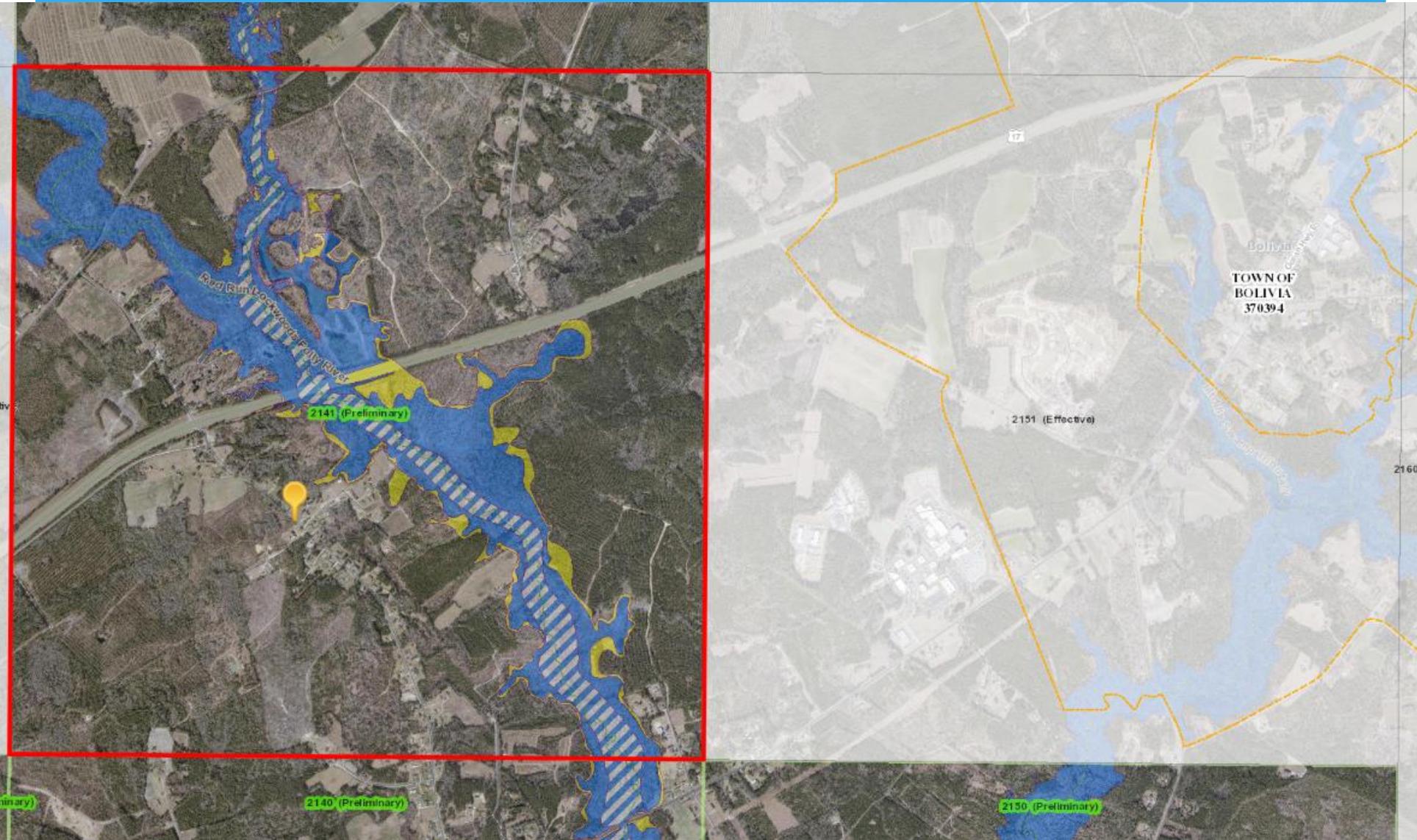
## Engineering Models

Click the Model name to download the .zip file.

Model	Start	End	Study Type
Calabash River	Approximately 2.4 miles upstream of NC 179	Approximately 100 feet downstream of Angel Trace Road	DETAILED STUDY



# Effective view vs Preliminary



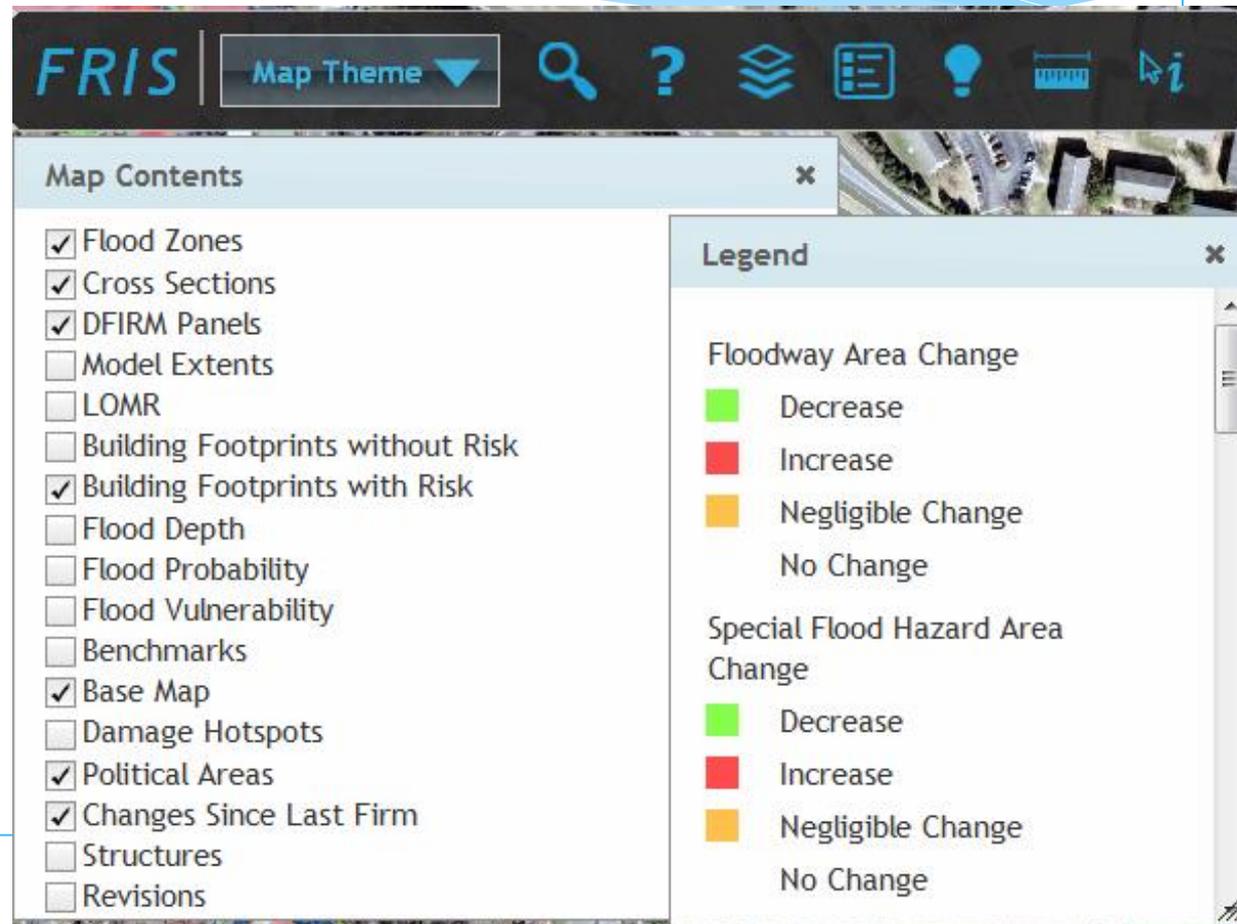
# Changes Since Last FIRM

Click 'LAYERS' on the Tool bar (for Map Contents)

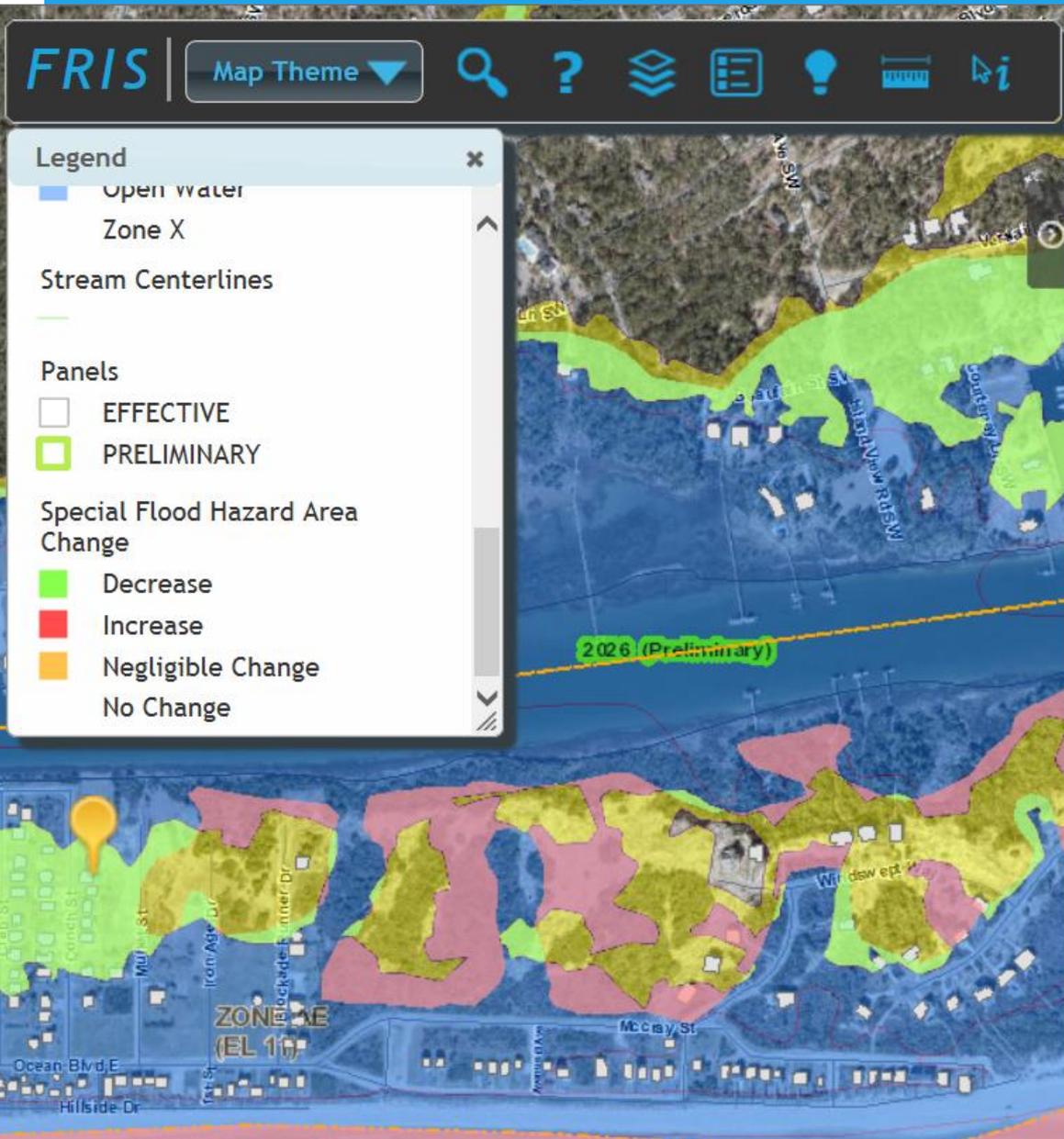
Click 'LEGEND'

Green = Decrease

Red = Increase



# Changes Since Last FIRM



Who Am I : General Public

Preliminary

## Flood Information

Preliminary Panels are outlined in

**i** This panel's status is Preliminary.

Map Location

Flood Zone: 0.2% Annual Chance Flood Hazard

Flood Source: Atlantic Ocean

Base Flood Elevation: Not available for this area. More

County: Brunswick

Political Area: Town Of Holden Beach

CID: 375352

Panel: 2026 [Download](#)

Map Number: 3720202600K

Preliminary Issuance Date: 08/29/2014

Latitude: 33.91692

Longitude: -78.25736

**i** Address locations are approximate.

**i** [174 Conch St, Supply, NC](#)

# FRIS Display View/Print/Map Export

FRIS

Change Map ▾



Who Am I : General Public ⓘ ▾

Effective ▾

▸ Flood Information

▸ Risk Information

▸ Financial Vulnerability

Map Export

Select a map template

- Current View
- Regulatory

Select PDF paper size

- 8.5 x 11
- 11 x 17

Print

Who Am I : General Public ⓘ ▾

Effective ▾

## Flood Information

**i** Click the map to view information.



Map Location

Flood Zone: AE ⓘ

Flood Source: East Tarboro Canal

Base Flood Elevation: 45.8 ft ⓘ

Vertical Datum: NAVD88

County: Edgecombe

Political Area: Town of Tarboro

Jurisdiction: Town of Tarboro

CID: 370094

Panel: 4738

Map Number: 3720473800J

Effective Date: 11/03/04

Latitude: 35.9037

Longitude: -77.51986

▸ Risk Information

▸ Financial Vulnerability

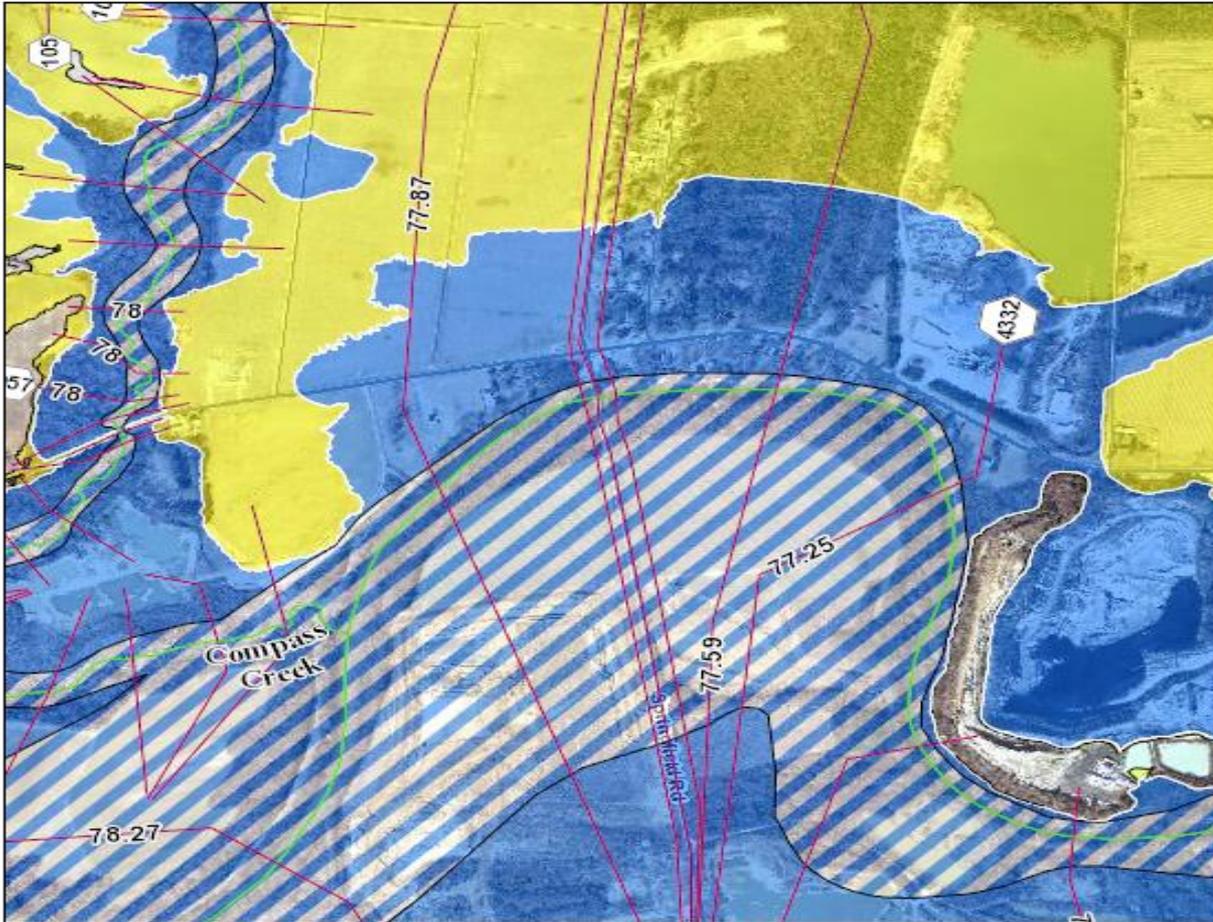
▸ Map Export

▸ Data Export

# FRIS Produce a FIRMETTE

Northing = 469,057, Easting = 1,547,434

Northing = 468,887, Easting = 1,558,705



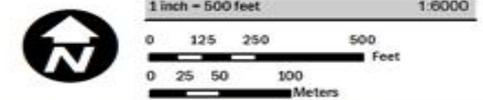
Northing = 459,749, Easting = 1,547,292

Northing = 809,320, Easting = 2,371,197



	Without Base Flood Elevation (BFE) <i>Zone X, X1, X2</i>
	With BFE or Depth <i>Zone A1, A2, A3, A99, X1, X2, X3</i>
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard <i>Zone X</i>
	Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
	Areas Determined to be Outside the 0.2% Annual Chance Flood Hazard <i>Zone X</i>
	Jurisdiction Boundary
	FIRM Panel Boundary

North Carolina State Plane Projection Feet (Zone 3200)  
Datum: NAD 1983 (Horizontal), NAVD 1988 (Vertical)



**NATIONAL FLOOD INSURANCE PROGRAM**  
FLOOD INSURANCE RATE MAP

**NORTH CAROLINA**  
Panel(s): 3860, 3861, 3870, 3871

**FEMA National Flood Insurance Program**

CONTAINS:  
COMMUNITY CID  
City of Rocky Mount 370092

**Notice to User: The Map Number(s) shown below should be used when placing map orders; the Community Number(s) shown above should be used on insurance applications for the subject community.**

SELECTED PANELS:

MAP NUMBER	EFFECTIVE DATE
3720386000J	11/03/04
3720386100J	11/03/04
3720387000J	11/03/04
3720387100J	11/03/04




This is an official copy of a portion of the above referenced flood map. This map incorporates changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov).



## FEMA: National Flood Insurance Program

Page 2 of 2



**Panel(s):** 0810,0820,0710,0720

**CONTAINS:**

**COMMUNITY:** CID  
CITY OF DURHAM 370086

**Notice to User:** The Map Number(s) shown below should be used when placing map orders; the Community Number(s) shown above should be used on insurance applications for the subject community.

**SELECTED PANELS:**

MAP NUMBER	EFFECTIVE DATE
3720661000K	06/02/07
3720662000K	06/02/07
3720071900K	06/02/07
3720072900K	06/02/07

**NOTES TO USERS**

Base map information and geospatial data used to develop this FIRMette were obtained from various organizations, including the participating local community(ies), state and federal agencies, and/or other sources. The primary base for this FIRM is aerial imagery acquired by the State in 2010. Information and geospatial data supplied by the local community(ies) that met FEMA base map specifications were considered the preferred source for development of the base map.

See geospatial metadata for the associated digital FIRMette for additional information about base map preparation. Base map features shown on this FIRMette, such as corporate limits, are based on the most up-to-date data available at the time of publication. Changes in the corporate limits may have occurred since this map was published. Map users should consult the appropriate community official or website to verify current conditions of jurisdictional boundaries and base map features. This map may contain roads that were not considered in the hydraulic analysis of streams where no new hydraulic model was created during the production of this statewide format FIRM.

See geospatial metadata for the associated digital FIRMette for additional information about base map preparation. Base map features shown on this FIRMette, such as corporate limits, are based on the most up-to-date data available at the time of publication. Changes in the corporate limits may have occurred since this map was published. Map users should consult the appropriate community official or website to verify current conditions of jurisdictional boundaries and base map features. This map may contain roads that were not considered in the hydraulic analysis of streams where no new hydraulic model was created during the production of this statewide format FIRM.

Flood elevations on this map are referenced to either or both the North American Vertical Datum of 1988 (NAVD 88) or National Geodetic Datum of 1929 (NGVD 29), and are labeled accordingly. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. To obtain current elevation, description, and/or location information for bench marks shown on this map, or for information regarding conversion between NGVD 29 and NAVD 88, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.nga.noaa.gov/>.

**LEGEND**

-  Coastal Barrier Resources System (CBRS) Areas
-  Otherwise Protected Areas (OPA)
-  Letters of Map Revision (LOMR)
-  1% Annual Chance Floodplain Boundary
-  0.2% Annual Chance Floodplain Boundary
-  Floodway Boundary
-  Limit of Study
-  Easement, Culvert, Aqueduct, or Storm Sewer
-  Accredited or Provisionally Accredited Levee, Dike or Floodwall
-  Non-accredited Levee, Dike or Floodwall
-  Hydrographic Feature
-  Profile Baseline
-  1% Annual Chance Cross Section
-  Coastal Traversed
-  North Carolina Geodetic Survey Bench Mark  
(for more information on visit <http://www.ngs.noaa.nc.us/>)
-  National Geodetic Survey Bench Mark  
(for more information on visit <http://www.ngs.noaa.gov/>)
-  NGVD 29 2-9 m Vertical Control Marks or Contracted Established MCHP Bench Marks  
(for more information on visit <http://www.ngs.noaa.nc.us/>)
-  M 1.5  
Spot Mile Marker

**NOTES TO USERS**

This is an official FIRMette of a portion of the effective panels listed in the Title Block shown on Page 1. The information represented on this FIRMette was extracted from the effective digital flood hazard data available at [www.floodmaps.nc.gov/fis](http://www.floodmaps.nc.gov/fis).

Base flood elevation data, floodway, nonencroachment widths, information on certain areas no in the Special Flood Hazard Areas protected by flood control structures, and other pertinent data are available in the Flood Insurance Study (FIS) available at [www.floodmaps.nc.gov/fis](http://www.floodmaps.nc.gov/fis). Users should be aware that flood elevations shown on this FIRMette represent elevations rounded to one tenth of a foot (0.1') and should be utilized in conjunction with data available in the FIS.

The FIS report also provides instructions for determining a floodway using non-encroachment widths for flooding sources studied by limited detailed methods.

**MORE INFORMATION**

Letters of Map Amendment (LOMA)	1-877-336-2627 <a href="http://www.fema.gov/">http://www.fema.gov/</a>
Letters of Map Revision (LOMR)	919-715-5711 <a href="http://www.ncfloodmaps.com">www.ncfloodmaps.com</a>
Flood Insurance Availability	
North Carolina Division of Emergency Management (NCEM)	919-715-5711 <a href="http://www.ncdinem.com/">http://www.ncdinem.com/</a>
National Flood Insurance Program (NFIP)	1-877-638-8620 <a href="http://www.fema.gov/national">http://www.fema.gov/national</a>
Questions about this FIRMette	1-877-336-2627 <a href="http://www.fema.gov/">http://www.fema.gov/</a>

**MAP REVISIONS**

There are no map revisions for the selected area.

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# IMPACT OF NEW MAPS ON FLOOD INSURANCE RATES

The slide features a solid blue background. At the bottom, there are several overlapping, wavy, light blue shapes that create a sense of movement or a horizon line.

# SAMPLE FLOOD INSURANCE RATES

<b>Zone X</b>	<b>\$1,330*</b>
<b>Zone AE</b>	<b>\$1,677</b>
<b>Zone VE</b>	<b>\$3,523</b>

Rates are as of April 2015 and are subject to change

- \* If the structure has not had previous flood claims or received previous Federal Disaster Assistance payments, it might qualify for a Preferred Risk Policy in Zone X with the lowest possible rate of \$367 for \$100,000 building/\$40,000 contents coverage

Flood insurance coverage of \$100,000 building/\$25,000 contents on an NFIP compliant structure.

# SAMPLE FLOOD INSURANCE RATES

## Flood Insurance Premiums When Structure is Built ABOVE the BFE\*

Lowest Floor Elevation	Rates Effective April 2015	
	AE Zone	VE Zone
<b>BFE</b>	<b>\$1,677</b>	<b>\$3,523</b>
<b>BFE + 1 ft.</b>	<b>\$773</b>	<b>\$2,793</b>
<b>BFE + 2 ft.</b>	<b>\$519</b>	<b>\$2,066</b>
<b>BFE + 3 ft.</b>	<b>\$429</b>	<b>\$1,532</b>
<b>BFE + 4 ft.</b>	<b>\$394</b>	<b>\$1,361</b>

\* Flood insurance coverage of \$100,000 building/\$25,000 contents on an NFIP compliant structure with a policy deductible of \$1000.

# SAMPLE FLOOD INSURANCE RATES

## Flood Insurance Premiums When Structure is Built BELOW the BFE\*

Lowest Floor Elevation	Rates Effective April 2015	
	AE Zone	VE Zone
<b>BFE</b>	<b>\$1,677</b>	<b>\$3,523</b>
<b>BFE - 1 ft.</b>	<b>\$3,837</b>	<b>\$4,453</b>
<b>BFE - 2 ft.</b>	<b>Submit for Rate</b>	<b>\$5,478</b>
<b>BFE - 3 ft.</b>	<b>Submit for Rate</b>	<b>\$6,726</b>
<b>BFE - 4 ft.</b>	<b>Submit for Rate</b>	<b>Submit for Rate</b>

\* Flood insurance coverage of \$100,000 building/\$25,000 contents on an NFIP compliant structure with a policy deductible of \$1000.

# LOCAL FREEBOARD & NFIP STATISTICS

<b>Community</b>	<b>Joined NFIP (Regular Program)</b>	<b>Freeboard</b>	<b>Policies</b>	<b>Insurance in Force</b>
<b>Brunswick County</b>	<b>5/15/1986</b>	<b>2 feet</b>	<b>3,954</b>	<b>\$1,055,082,400</b>
<b>Village of BaldHead Island</b>	<b>5/15/1986</b>	<b>0</b>	<b>1,019</b>	<b>\$322,236,200</b>
<b>Town of Belville</b>	<b>6/2/2006</b>	<b>2 feet</b>	<b>36</b>	<b>\$10,324,000</b>
<b>City of Boiling Springs Lakes</b>	<b>3/2/1989</b>	<b>2 feet</b>	<b>121</b>	<b>\$29,794,800</b>

# LOCAL FREEBOARD & NFIP STATISTICS

<b>Community</b>	<b>Joined NFIP (Regular Program)</b>	<b>Freeboard</b>	<b>Policies</b>	<b>Insurance in Force</b>
<b>Town of Bolivia</b>	<b>6/2/2006</b>	<b>2 feet</b>	<b>2</b>	<b>\$378,000</b>
<b>Town of Calabash</b>	<b>2/4/1988</b>	<b>2 feet</b>	<b>67</b>	<b>\$16,466,000</b>
<b>Town of Carolina Shores</b>	<b>1/26/1999</b>	<b>0</b>	<b>290</b>	<b>\$83,300,200</b>
<b>Town of Caswell Beach</b>	<b>1/17/1986</b>	<b>2 feet</b>	<b>654</b>	<b>\$140,390,500</b>

# LOCAL FREEBOARD & NFIP STATISTICS

<b>Community</b>	<b>Joined NFIP (Regular Program)</b>	<b>Freeboard</b>	<b>Policies</b>	<b>Insurance in Force</b>
<b>Town of Holden Beach</b>	<b>5/26/1972</b>	<b>0</b>	<b>1,969</b>	<b>\$518,173,400</b>
<b>Town of Leland</b>	<b>10/19/1992</b>	<b>2 feet</b>	<b>381</b>	<b>\$107,742,100</b>
<b>Town of Navassa</b>	<b>6/2/2006</b>	<b>2 feet</b>	<b>7</b>	<b>\$1,415,000</b>
<b>City of Northwest</b>	<b>11/12/1998</b>	<b>2 feet</b>	<b>4</b>	<b>\$917,000</b>

# LOCAL FREEBOARD & NFIP STATISTICS

<b>Community</b>	<b>Joined NFIP (Regular Program)</b>	<b>Freeboard</b>	<b>Policies</b>	<b>Insurance in Force</b>
<b>Town of Oak Island</b>	<b>7/1/1999</b>	<b>2 feet</b>	<b>3,599</b>	<b>\$865,489,700</b>
<b>Town of Ocean Isle Beach</b>	<b>11/17/1972</b>	<b>3 feet</b>	<b>2,956</b>	<b>\$697,876,100</b>
<b>Town of Sandy Creek</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Town of Shallotte</b>	<b>1/3/1986</b>	<b>0</b>	<b>139</b>	<b>\$40,948,300</b>

# LOCAL FREEBOARD & NFIP STATISTICS

<b>Community</b>	<b>Joined NFIP (Regular Program)</b>	<b>Freeboard</b>	<b>Policies</b>	<b>Insurance in Force</b>
<b>City of Southport</b>	<b>4/15/1977</b>	<b>3 feet</b>	<b>420</b>	<b>\$118,114,300</b>
<b>Town of Saint James</b>	<b>6/27/2000</b>	<b>2 feet</b>	<b>768</b>	<b>\$240,456,800</b>
<b>Town of Sunset Beach</b>	<b>11/17/1972</b>	<b>1 foot</b>	<b>1,849</b>	<b>\$468,068,700</b>
<b>Town of Varnamtown</b>	<b>5/30/2001</b>	<b>0</b>	<b>8</b>	<b>\$2,468,000</b>

# IMPACT ON FLOOD INSURANCE RATES AS A RESULT OF NEW LEGISLATION

Highlights of the  
Homeowners Flood Insurance  
Affordability Act of 2014 (HFIAA)

# HFIAA Provisions

## \*Rate-increase limitations

- Limit increases for *individual premiums* to 18% of premium
- Limit increases for average *rate classes* to 15%
- **The annual surcharge and Federal Policy Fee are not included in the rate calculation** and could result in the total amount charged to the policyholder to increase more than 18%

## \*Deductibles

- Maximum residential **deductible limits are increased** from \$5,000 to **\$10,000**.

# What's Changing for Pre-FIRM

## \* **Subsidized rates to be *phased out***

- Non-primary residences
- Business properties
- Severe repetitive loss properties (1-4 residences), and properties where claims payments exceed fair market value

## \* **New policies to be *issued at full-risk rates***

- After a lapse in insurance coverage
- Properties for which there was a refusal to mitigate

# What's Changing for Pre-FIRM

## \*Pre-FIRM Non-Primary Residence Policies

- **25% annual increase at policy renewal** until premium reaches full-risk rate
- Includes vacation homes, secondary residences, and rental properties

## \*Pre-FIRM Business Policies

- **Future rates will increase by 25% per year** until premium reaches full-risk rate until FEMA can separate businesses from other non-residential structures

# HFIAA Provisions

## \*Federal Reserve Fund

- The Federal Reserve Fund was implemented in 2013 to help cover costs when claims exceed the annual premium collected by the NFIP.
- On April 1, 2015, the Federal Reserve Fund assessment was added to additional policies.

<b>Policy</b>	<b>2014 Fee</b>	<b>2015 Fee</b>
<b>Preferred Risk Policy (PRP)</b>	<b>0\$</b>	<b>10%</b>
<b>Property Newly Mapped into SFHA</b>	<b>0%</b>	<b>15%</b>
<b>All other policies</b>	<b>5%</b>	<b>15%</b>

# HFIAA Provisions

## \*Federal Policy Fee

- The Federal Policy Fee will increase by \$1 for most policies except Preferred Risk Policies.
- Federal Policy Fee for Preferred Risk Policies is \$22.
- Federal Policy Fee for all other policies is \$45.

# HFIAA Provisions

- \* **All policies get a new annual surcharge based on occupancy**
  - \$25 for primary residential: single-family and individual condominium units
  - \$250 for non-residential properties, non-primary residential properties, and multifamily residential
  - Surcharges would be deposited in the NFIP Reserve Fund, which was established to ensure funds are available for meeting the expected future obligations of the NFIP

# HFIAA Provisions

## \*Properties Newly Mapped in SFHA

- Eligible to receive a Preferred Risk Policy for 1 year after the maps become effective. However, the Federal Policy Fee will be \$45 rather than \$22.
- Rates at renewal will increase no more than 18% each year.
- Grandfathering remains a cost-saving option for policyholders when new maps show their structure in a higher risk area (increased BFE or Zone AE to Zone VE).

# Grandfathering

- \* **When the FIRM changes, the NFIP provides a lower-cost flood insurance rating option referred to as “grandfathering”. Grandfathering is available to property owners who:**
  - Have flood insurance policies in effect when the new flood maps become effective and maintain continuous coverage; OR
  - Have built in compliance with the FIRM in effect at the time of construction.

# IMPACT OF NEW MAPS

The slide features a solid blue background. At the bottom, there are several overlapping, wavy, light blue shapes that create a sense of movement or a horizon line. The text 'IMPACT OF NEW MAPS' is centered in the upper half of the slide in a white, sans-serif font.

# IMPACT ON LOMCs

- ⦿ Community receives Summary of Map Actions (SOMA) listing all LOMAs, LOMRs, and LOMR-Fs issued since last FIS effective date
- ⦿ SOMA online at - <http://www.ncfloodmaps.com/soma.htm>
- ⦿ Preliminary SOMA shows how each LOMC was affected by the preliminary flood hazard data
- ⦿ Possible Actions:
  - \* **Incorporated** (if LOMC is map-able)
  - \* **Superseded** (if flood hazard was restudied and ground elevation is below new BFE)
  - \* **Revalidated** (if LOMC is unaffected by map revision but is too small to show on FIRM)
- ⦿ Revalidation letters are sent to affected communities prior to the new FIS effective date and will become effective the following day

# USE OF PRELIMINARY DATA

- ◎ For areas currently in Zones X (Shaded or Unshaded):
  - \* Use of Preliminary data is not required:
    - \* May be used in cases where the structure or development will be located in Zone AE
- ◎ For areas currently in Zone AE, where...
  - ◎ Higher BFEs/wider floodways – **encourage** use of new data
  - ◎ Lower BFEs/narrower floodways- apply ‘Effective’ data until LFD is issued; beneficial flood insurance for lowering risk
- ◎ If communities wish to enforce more stringent data, they must adopt the Preliminary data

# FURTHER INFORMATION



## Using Data from Preliminary Flood Maps

Preliminary flood hazard maps contain valuable information that can be used for floodplain management before they become effective. This fact sheet provides guidance on how these data can and should be used in accordance with the National Flood Insurance Program (NFIP) regulations, at 44 Code of Federal Regulations, Section 60.3, under specific Subparagraphs as cited throughout this document.

### Background

A Flood Insurance Study (FIS) uses detailed hydrologic and hydraulic analyses to model the 1% annual chance flood event, determine Base Flood Elevations (BFEs), and designate floodways and flood risk zones (e.g., Zones AE and VE). The flood hazard data are shown in tables in a FIS Report, shown graphically as flood profiles, and portrayed planimetrically on a Flood Insurance Rate Map (FIRM).

New flood hazard information is released to the public as a preliminary FIS Report and FIRM for review and comment during a statutory 90-day appeal period. The preliminary BFE and floodway data are subject to change until a notice of final flood elevation determination is provided in a Letter of Final Determination (LFD) to the community.

Most communities participating in the NFIP have a FIRM depicting areas expected to be inundated during the 1% annual chance flood (i.e., Special Flood Hazard Areas [SFHAs]) determined by using one of two types of engineering methods: 1) detailed studies which determine BFEs, and 2) approximate studies which do not determine BFEs and are designated as Zone A.

### Applicability

When land has been designated as being located in the SFHA on a community's Flood Hazard Boundary Map (FHBM) or FIRM, and no BFEs or floodway have been identified, communities are required to apply the provision contained in Subparagraph 60.3(b)(4). This provision requires that communities:

***Obtain, review and reasonably utilize any base flood elevation and floodway data available from a Federal, State, or other source...***

Communities should use preliminary flood data as criteria to require that new construction and/or substantial improvement projects are built such that the lowest floor is elevated to or above the BFE. Communities should also prohibit any encroachment in the floodway that would result in any increase in base flood levels during the occurrence of a base (1% annual chance) flood discharge event. Subparagraph 60.3(b)(4) also states that BFE or floodway data obtained should be used as long as they:

***Reasonably reflect flooding conditions expected during the base flood; are not known to be scientifically or technically incorrect; and represent the best data available.***

***Data from a preliminary FIS constitute available data.***

### Use of Preliminary FIS Data

#### **Land Currently within Zone A**

For areas currently identified within a Zone A on the community's effective FHBM or FIRM, the BFE and floodway/non-encroachment data from a preliminary FIS Report constitute available data under Subparagraph 60.3(b)(4). The requirement in Subparagraph 60.3(b)(4) is an important floodplain

## Best Available Data Fact Sheet

- \* Available online at [www.ncfloodmaps.com/fact\\_sheets.htm](http://www.ncfloodmaps.com/fact_sheets.htm)
- \* Provides information as to what data may be used immediately from the preliminary FIS Report as best available data for Zone A areas (BFEs, floodway/non-encroachment area data)
- \* Not applicable for this release

# IMPORTANT DATES

- ⦿ Preliminary Period: Current, in progress
- ⦿ Appeal Period:
  - \* TBD
- ⦿ Letter of Final Determination – TBD

# QUESTIONS?

