Flood and Other Coastal Issues

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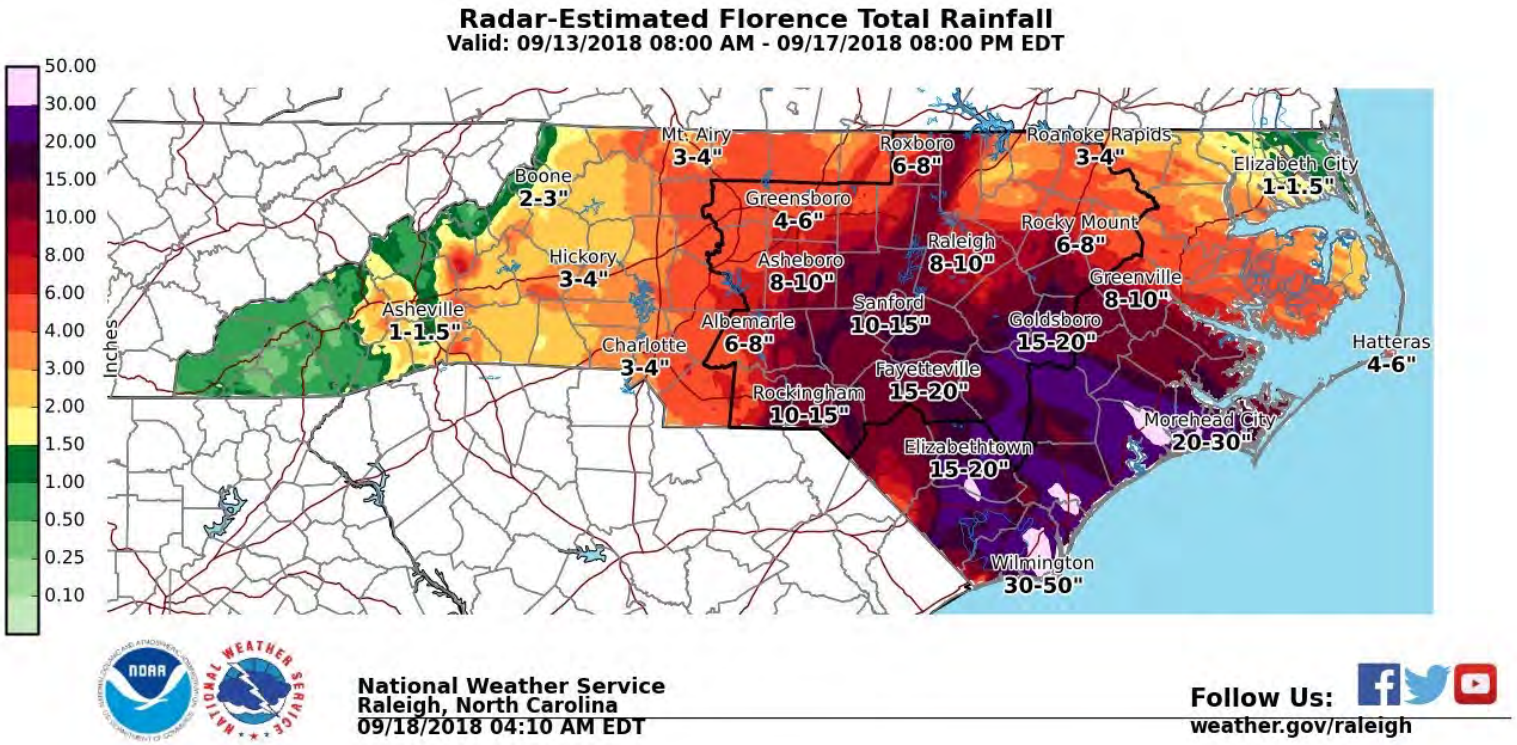
Frequency of NC Flooding

Figure 5 Flood Events by North Carolina Region (Storm Events Database)

Hurricane Florence

- 39 deaths in NC
- $23 billion in damage
- Had a bigger impact to the state than Hurricane Hazel (1954)
- $10B-13B uninsured flood losses

Hurricane Florence Rainfall



Cajun Navy

" 4 hours of sleep in over 48 hours. I'm tired, I'm wet, I can't stay off the phone. I'm flooded with calls. It's what we do… I need boats on standby. Still water and swift water boats. My guys are tired. We need some back up.

Donald, Cajun Navy

Stories from Florence

"It's kind of tough when you're operating a shelter and you see one of your teachers walk into that shelter and all she's got – all that's left – is what she's carrying in her hands."

(School superintendent)

We wouldn't ever imagined flooding like we've seen with this storm. Our home and everything in it was taken by the flood. Since we sit so far above historical flood levels, removing or insuring our belongings never happened.

Old River Farms

Recovering from a Flood

According to FEMA, 40% of businesses damaged during a natural disaster never reopen

Record river levels

D. INLAND FLOODING...

INLAND PENDER...NORTHEAST CAPE FEAR RIVER: THE GAUGE AT BURGAW REACHED 25.58 FEET EARLY ON SEPTEMBER 19TH, EXCEEDING THE CREST FROM HURRICANE MATTHEW (2016) BY OVER THREE FEET. HUNDREDS OF HOMES WERE FLOODED AND MANY ROADS WERE CLOSED ACROSS PENDER COUNTY INCLUDING INTERSTATE 40 AND STATE HIGHWAYS 133 AND 210.

BLADEN...CAPE FEAR RIVER: ACROSS BLADEN COUNTY THE CAPE FEAR RIVER CRESTED TWO TO SIX FEET HIGHER THAN DURING HURRICANE MATTHEW, SETTING A NEW RECORD STAGE AT LOCK AND DAM #1. IN BLADEN COUNTY THE TOWN OF KELLY WAS EVACUATED DUE TO FLOODING. THE BLACK RIVER IN PENDER COUNTY CRESTED ABOUT ONE FOOT HIGHER AT THE TOWN OF CURRIE THAN DURING HURRICANE MATTHEW.

INLAND NEW HANOVER...IMPACTS ARE STILL DEVELOPING. IN DOWNTOWN WILMINGTON THE HIGHEST STAGE EVER RECORDED OCCURRED DURING FLORENCE`S STORM SURGE, 8.27 FEET MLLW, BEATING RECORD LEVELS SET DURING HURRICANES HAZEL (1954) AND MATTHEW (2016). SUBSTANTIAL RIVER FLOODING DEVELOPED OVER THE NEXT WEEK, CAUSING 1 TO 1.5 FEET OF WATER TO FLOOD DOWNTOWN STREETS TWICE A DAY DURING HIGH TIDES.

ROBESON...ON THE LUMBER RIVER IN LUMBERTON NC SEVERE FLOODING DEVASTATED AREAS THAT WERE FLOODED DURING HURRICANE MATTHEW. A NINE-MILE PORTION OF INTERSTATE 95 WAS CLOSED NEAR LUMBERTON.

You Can't Just Move

~~97%~~ 98% of the US population lives in a county that has experienced a flood disaster

And You Can't Ignore It

Flooding is the most costly and lethal natural disaster

$7.96 Billion in losses on average per year

2013 - 2017: 114 deaths on average per year

90% of natural disasters involve flooding

Or insured at all…

Homeowners with flood coverage:

Less than 12%

In North Carolina…

NC Homeowners with Flood Insurance

Less than 5%

And it's not fully insured

Annual uninsured economic losses from flooding exceed insured losses by $10 billion (Swiss Re)

Four Trends in Flood Insurance

1. Move to actuarial rates
2. Loss financing
3. Mitigation
4. Move to private market

What Qualifies as a Flood?

"A flood is a **general and temporary condition** where **two or more acres** of normally dry land or **two or more properties** are **inundated by water or mudflow**."

What Qualifies as a Flood?

"**Collapse or subsidence of land along the shore** of a lake or similar body of water **as a result of erosion or undermining caused by waves or currents of water** exceeding anticipated cyclical levels…"

Historical Background

- Established in 1968 as part of HUD
- FEMA established in 1979
- WYO – 1983
- Moved under Homeland Security in 2003
- Intent was to encourage local regulation of flood plains and flood prone areas.
- 20,000+ communities have taken steps that averted $16 Billion in losses since 2000
- Initial focus was river flooding (Think Mississippi River)

NFIP Exposure as of June 2019

- TIV = $1.3 trillion – trending up slightly
- PIF = 5,057,090 down from 5.7 million in 2009 but trending up slightly since March
- 95% of flood policies are residential policies
- 35% are in Florida (1.7 million policies)

Current Flood Policies

- North Carolina has 141,000 NFIP policies
- For 3.8 million households
- NC DOI estimates 2 million more households need flood insurance
- Harsh reality: We aren't doing our job communicating the value of flood insurance
- Some good news: private market is offering flood coverage

Private Flood Coverage

- 3% - 4% of the total flood market
- Personal lines dominated by Assurant, AIG, and Swiss Re
- New flood companies in Florida which had highest private market growth
- Surplus lines market has over $1B in flood insurance premiums (mostly commercial)

Reauthorization and Major Changes

- NFIP is not a permanent program – must be reauthorized and funded by through the federal budget
- Many short-term extensions causing market disruption
- Biggert-Waters passed in 2012, extended the program through September 30, 2017
- Homeowners Flood Insurance Affordability Act passed in March 2014 after outcry from BW12 impact

Then…

- A short-term extension until December 8, 2017
- A short-term extension until January 19, 2018
- Lapse from January 20-22, 2018
- A retroactive short-term extension to February 8, 2018
- A short-term extension to March 23, 2018

But wait, there's more…

- A short-term extension to July 31, 2018
- A short-term extension to November 30, 2018
- A short-term extension to December 7, 2018
- A short-term extension to December 21, 2018

Things can always get worse…

- A short-term extension until May 31, 2019
- Actually not signed until December 22 but retroactive
- BUT…
  - No federal budget or continuing resolution
  - Partial government shutdown
  - Omnishambles

What Happens when NFIP Lapses?

- No new flood policies or increases in coverage
- No renewals of flood policies
- NFIP recommends agents/WYO companies NOT accept payments
- NAR estimates impact at 40,000 home closings a month
- Existing policies stay in force and claims are paid
- BUT borrowing authority goes from $30B to $1B
- Claims only paid to the extent of cash on hand and received during lapse

Omnishambles, NFIP Edition

- 12/27 NFIP ruled NFIP can't be renewed during the shutdown
  - No new policies
  - No renewal of existing policies
  - No coverage extensions
  - Claims still paid
- 12/28 Just kidding

More Extensions

- Extended from May 31 to June 14
- Extended until September 30, 2019
- Extended until November 21, 2019

House Bill

House committee action:

- 5-Year extension to 9/30/24
- NFIP-Private-NFIP
- Revolving loan fund for states to use for mitigation
- Updated and expanded flood mapping
- Repeal surcharges
- Authorize monthly payments
- Increase ICC coverage to $60,000
- Raise minimum loan for mandatory coverage to $25K (from 5K)

Senate Bill

- Cap annual rate increases at 9%
  - "Put guardrails on FEMA's new unproven rating methodology, known as Risk Rating 2.0"
  - Excludes catastrophic loss years in the average historical loss year calculation
- Monthly Installments
- Increases maximum coverage limits
- Increases ICC coverage to $60,000

Senate Bill

- Freezes interest on the debt and redirects to the Flood Mitigation Assistance Program
- Authorizes an additional $1 billion for mitigation
- Authorize creation of a low-interest mitigation loans
- Revolving loan fund – partnership with states
- Increase premiums by 25% a year for properties that refused a "bona fide" offer of mitigation

Senate Bill

- Requires FEMA to expand introductory class for all agents who write for NFIP/WYO
- Annual continuing education requirement for insurance agents
- Require disclosure of flood risk and prior flood damage to lessors and homebuyers prior to transfer
- Authorizes $400 million/year for Flood Mapping Program
- Double the statue of limitations to sue to two years

Senate Bill

- Study:
  - Ability to offer business interruption coverage
  - Participation rates
  - Feasibility of selling or licensing the use of NFIP claims data to the private sector
- Establish an Agent Advisory Council
- Develop fee schedule based on costs to develop flood maps and to charge private entities to use the maps

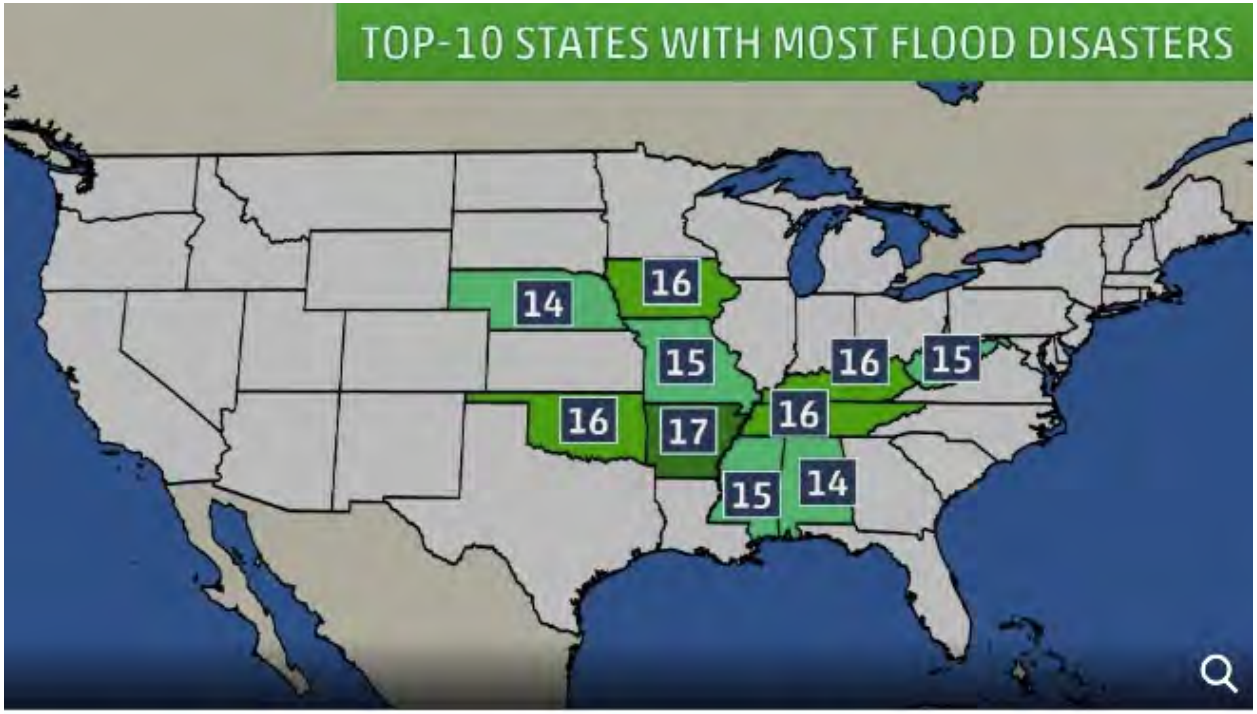
Flood Insurance Exposure Shift

- NFIP created to address river flooding issues
- Population shift to the coastal areas (>50%)
- 2005 Hurricane Katrina – huge impact to NFIP
- 2016-2018 saw record flooding triggered by hurricanes

River Flooding Issues

- Long lead time – weeks to months
- Snow melt is primary cause
- Repetitive losses
- Known problem areas with some predictability
- Levees and floodgates are primary control mechanisms

River Flooding – most frequent



Numbers on the map indicate the number of flood disasters in each of the top 10 states, 2008-17.

(The Pew Charitable Trusts/FEMA Database of Disaster Declarations)

Mississippi River 2019

- Longest flood in recorded history (226 days)
- Over 200 days above flood stage in several locations
  - Red River Landing was above flood stage from December 28, 2018 until August 10, 2019
- Triggered by record rains on top of snow melt
  - "Bomb cyclone"
  - Hurricane Barry – Arkansas record rainfall from a tropical system

Coastal Flooding

- Hurricanes less frequent than river flooding
- Much less predictable
- Storm surge vs. rising water
- Erosion during storms (winter and summer)
- “Wind driven water” misconception
- Wind versus water/flood problems when settling claims

Coastal Flooding – most expensive

- TS Allison (2001) - $1,105,003,344
- Ivan (2004) – $1,607,512,533
- Katrina (2005) – $16,257,744,061
- Ike (2008) - $2,702,388,727
- Sandy (2012) – $8,804,242,152
- Irma (2017) – $1,054,248,877
- Harvey (2017) – $8,908,547,689

Other Flooding Issues

- If it rains where you live, you may have a flood risk
- Development can cause flooding, even away from a body of water
- Unless you live where there is no chance of rising water, mudflow, or shore erosion, you have a flood risk.

Challenges

- Coastal development – risk more difficult to quantify
- NFIP is not actuarially sound
- Wind/water loss allocation is problematic
- Issues with additional living expenses and loss of use
- Map and modeling accuracy problems

Dwelling Form

- 92% of NFIP policies
- Single family detached homes – own or rent
- Up to four units if not a condo
- Dwelling unit in a condo building
- Townhouse
- Business contents in a non-residential condo

Preferred Risk Policy

- 37% of NFIP policies
- In zones B, C, or X. (Not in a special flood hazard area)
- 25% - 30% of flood claims paid on properties not in the SFHA
- NFIP grandfathering rules do not apply to the PRP
- After 4/1/15 “Property Newly Mapped into SFHA” with the PRP rate not a true PRP policy

Preferred Risk Policy

- Ineligible if in the past 10 years:
  - 2 or more flood claims or federal flood disaster payments over $1000
  - 3 flood claims or federal disaster payments of any amount
  - 1 flood claim and one federal flood disaster payment over $1,000
- 1.8 million PRP policies in force

Property Newly Mapped into SFHA

- If the flood zone has changed to a SFHA, the PRP can't be renewed (as of 4/1/15)
- Premium starts at the PRP rate but is no longer a PRP policy
- Rate increases to full rate faster than pre-4/1/15 PRP extension

General Property Form

- Residential with 5 or more units
  - Extended stay hotels, apartments, co-ops
  - Dorms
  - Assisted Living Facilities
  - Non-residential buildings
- Not for condo associations

RCBAP (Residential Condo Building Association Policy)

- Sold to Condo Associations only (not unit owners)
- Building and common contents
- Up to $250,000 per unit
- 75% or more is residential use
- Unit owners can buy coverage for contents on the dwelling form

Flood Zones

- A and V zones: 1% annual risk, 1 in 4ish chance during 30 year mortgage
- AE is newer format, replaces A1-A30
- AH/AO have 1% risk of flooding from 1-3 feet
- AR – decertified flood protection system, in process of being restored
- A99 – 1% chance of flooding but will be protected by a Federal flood control system (under construction)
- V zones include the ability of building to withstand the impact of waves over 3 feet

Flood Zones

- B, X (shaded) zones: .2 % chance of annual flooding
- C and X (unshaded): < .2% chance of annual flooding
- D – undetermined risk
- Coastal Barrier Resources System – NO NFIP insurance unless built prior to 1982 & participating community

Multiple Zones

- Must use highest risk zone building occupies
- Watch additions – may extend into higher zone

Discrepancy resolution

- Can appeal to lender's company to determine if you have better information
- Can appeal to FEMA:
  - Letter of Determination Review
  - Letter of Map Amendment
  - Letter of Map Revision – Fill

Limitations of Flood Zones

- Risk varies within flood zones
- Modeling limitations
- Mapping errors and outdated maps
  - Some maps 40 years old!
- Changes to surrounding terrain

Participating Community

- Community must participate in order for residents to purchase flood insurance from NFIP
  - Adopt a resolution of intent to participate
  - Adopt and submit a floodplain management ordinance and FIRM
- NOTE: Private flood may be available!

Participating Community

- Communities that participate that are then withdrawn/ suspended
  - Residents not able to purchase NFIP flood insurance
  - Existing policies not renewed
  - No federal grants or loans in flood hazard areas
  - No federal disaster assistance for insurable buildings
  - No federal mortgage insurance or loan guarantees in SFHA
- Must cooperate!

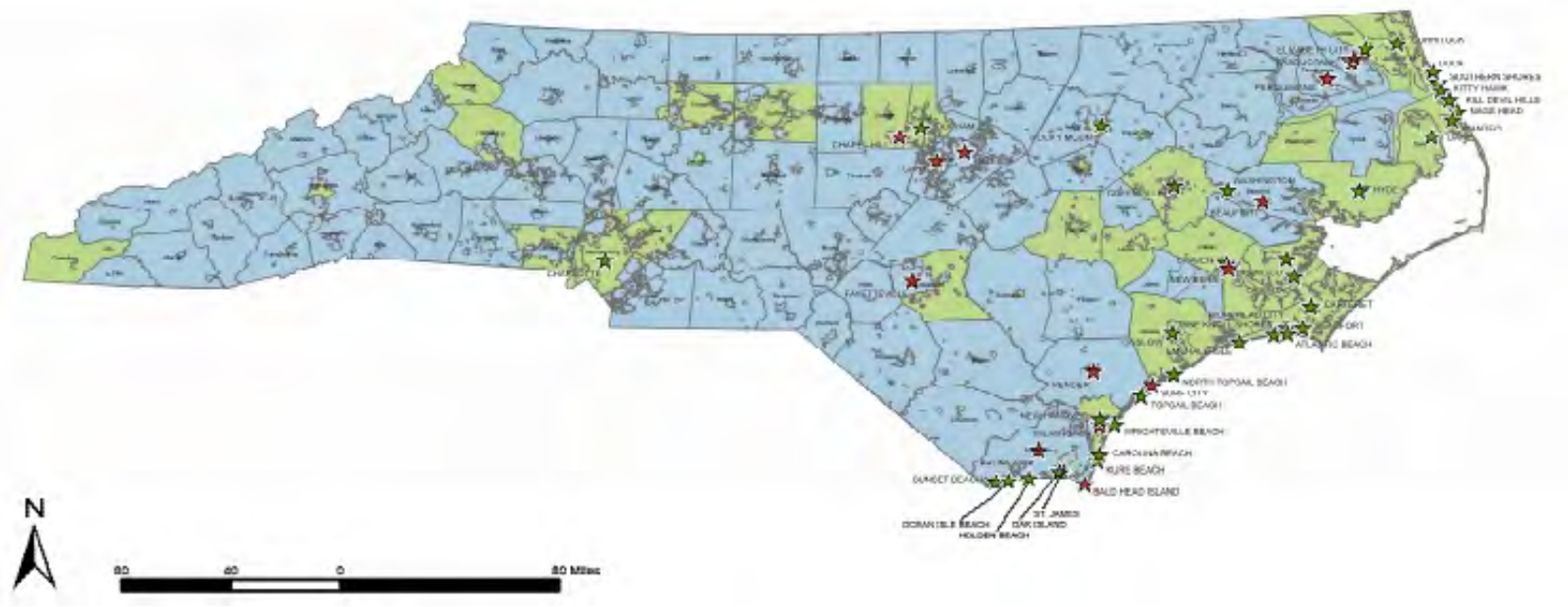
Community Rating System (CRS)

- 70% of all flood policies are written in CRS communities.
- Class 1 – 9 with 1 being the best (10 is no rating)
- CRS communities qualify for premium discounts
- Each step produces an additional 5% discount (Max 45%)
- IBC Interaction – Wrightsville Beach went from a class 5 to a class 8 due to NC opting out of IBC update (now 7)

Community Rating System (CRS)

- Must recertify every year
  - Repetitive loss property review
  - Information on all new/improved structures in SFHA
  - Submit 30 elevation certificates
- 1,506 communities have qualified (5% of total)
- Average 53 additional communities per year
- Mitigation much higher in CRS communities

NC CRS Participating Communities



Ineligible Buildings

- 1316 List – violations of law, regulation, or ordinance
- Buildings over water
- Underground buildings
- Must have 2 or more outside rigid walls, fully secured roof, and resist flotation, collapse, and lateral movement
- Additional listing in flood manual and online

Emergency Program

- Initial phase of community participation
- Lower limits (Ex: $35,000 for single family dwelling)
- Six months to adopt codes

Flood Maps

- Flood Maps
  - Flood Hazard Boundary Map (FHBM) for initial hazard ID
  - Flood Insurance Rate Map (FIRM) for regular communities
  - Letter of Map Change (LOMC) includes LOMA and LOMR
- FEMA Flood Map Service Center (MSC):
  https://msc.fema.gov/portal
- NC Flood Insurance Risk Information (FRIS):
  https://fris.nc.gov/fris/

Flood Map Limitations

- Many of the current flood maps do NOT take rainfall into consideration
- Current maps created with technology that can be significantly incorrect
- FEMA has limited time and money to create maps
- Wide variance within zones

Flood Map Limitations

- Higher populated areas get more attention
- They also tend to be wealthier areas that can afford to hire engineers and protest the maps
- Recent study says true flooding risk is 3X FEMA's current maps
- FEMA warns not to use flood maps as blueprints for risk – they are not "absolute lines" where flooding will happen

Mapping Updates

- New maps being developed based on updated models
- Wrightsville Beach – appealed new map and won
- Dare County – 15,970 mapped to a lower zone (they didn't appeal)
- Map change appeals
- Premium changes – 5 year phase-in

Elevation Certificate

- Updated in 2015, expired November 30, 2018 but not replaced yet…
- Building Information
- FIRM Information
- Flood proofing and vents

Current Flood Rates

Determined by:

Flood zone per FIRM

and

Lowest Floor Level per Elevation Certificate

(if available)

Limits

- Residential $250,000/$100,000
- Commercial $500,000/$500,000
- Non-condo residential $500,000 ($100,000 contents)
- RCBAP allows up to $250,000 per unit
- Must buy maximum allowable amount before excess

Available Deductibles

Pre-FIRM:

- $1500 for values up to $100,000
- $2,000 for values over $100,000

Post-FIRM:

- $1,000 deductible for values up to $100,000
- $1,250 deductible for values over $100,000

Available Deductibles

- $10,000 deductible now available
  - CAUTION – this applies separately to building and contents. Actual total deductible is $20,000
  - CAUTION #2 – Lenders must agree to accept
  - CAUTION #3 – Consider wind & hail/hurricane deductible if coastal property

Waiting periods

- 30 day waiting period is default
- Date of VALID check or credit card payment starts clock if no closing
- Immediate coverage for new/increased/extended mortgage – *if required*
- 30 day waiting period doesn't apply if initial purchase of flood insurance is during the 13-month period after map revision
- 30 day wait if cash purchase!
- If lender determines flood needed on existing loan or a forced-placed policy the waiting period DOES apply now!

Pre-FIRM & Grandfathering

- **Pre-FIRM** if built/substantially improved before initial rate map (and not since) – considered a subsidized rate
- **Grandfathered** if built in compliance with an existing flood map at time of construction – lower rate but not "subsidized" rate
- Map changes – 1 year at PRP rate, then annual rate increases until full-risk rate (Property Newly Mapped into SFHA)

Changes to Existing Policies

- What can you change?
  - Named Insured
  - Building description
  - BFE
  - Community number
  - Lowest floor
- Current insurer responsible for current and prior year (unless another insurer had it)
- More than two years back, submit to NFIP
- Refunds now 5 years prior instead of 6 for endorsements
- Federal Policy Fee and Surcharges generally not refundable

Impact from Katrina

- Losses of $16.25 billion in excess of funds available – became debt
- Over 166,000 claims, average loss $97,474
- Coastal surge and levee issues
- Wind/water lawsuits
- ALE/Loss of use issues

Impact from Katrina

- Drew attention to the inherent structural problems with the program
- Government Accountability Office (GAO) has said:
  - "By design" it is "not actuarially sound"
  - Not structured to build a surplus
  - Unable to purchase reinsurance (this has changed!)
  - Statutory limits on rate increases
  - Can't reject high-risk applicants
  - No distribution of risk so vast majority are high risk

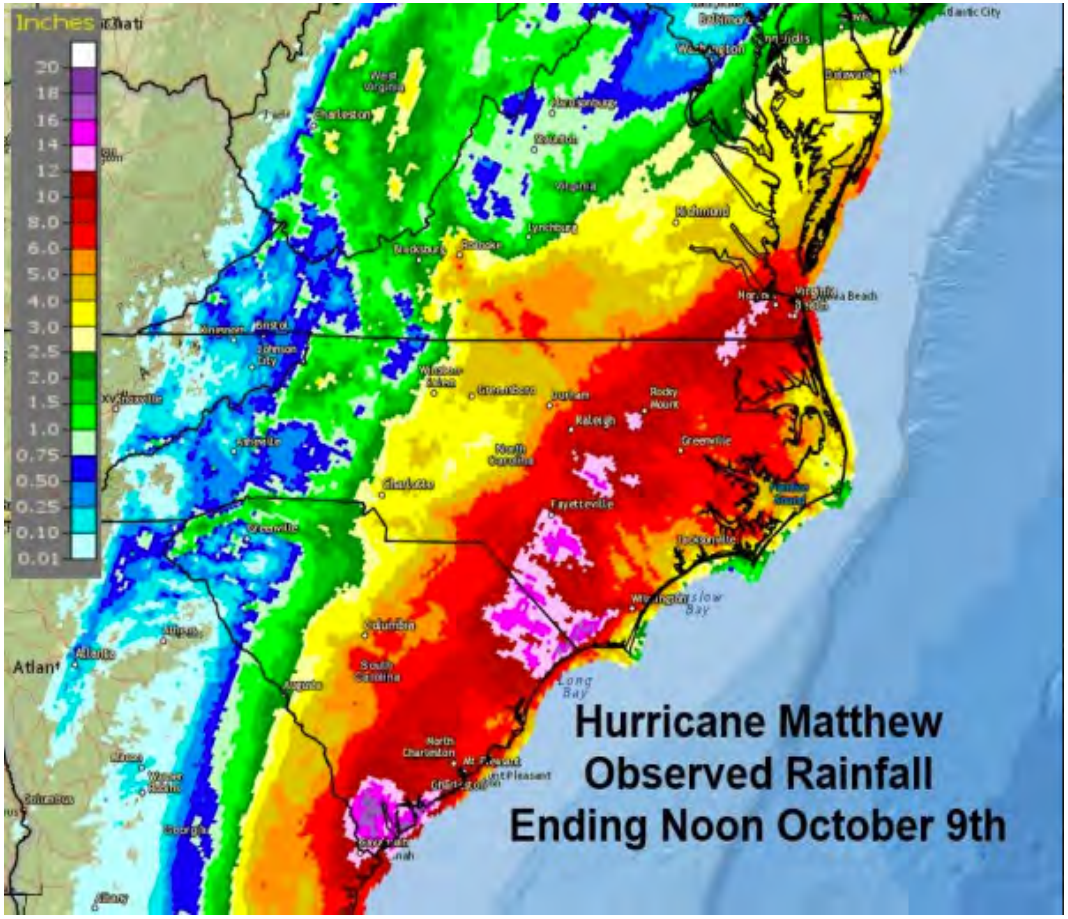
Impact from Sandy

- NFIP losses of $8.75 billion, over 132,000 claims
- Some claims overpaid – some underpaid with accusations of fraud
- 19,000 claims eligible for review, over $50 million additional payments to policyholders
- Basement claims
- 1/3 of homes subject to mandatory flood insurance had NO coverage
- 80% of other homes with losses – NO coverage

Impact from Sandy

- Problems with adjusters not well-educated in flood losses
- Map updates required more people to purchase flood insurance
- Economic impact on property values
- Unexpected loss – denial of risk
- More confusion over “hurricane” coverage and deductibles

Hurricane Matthew



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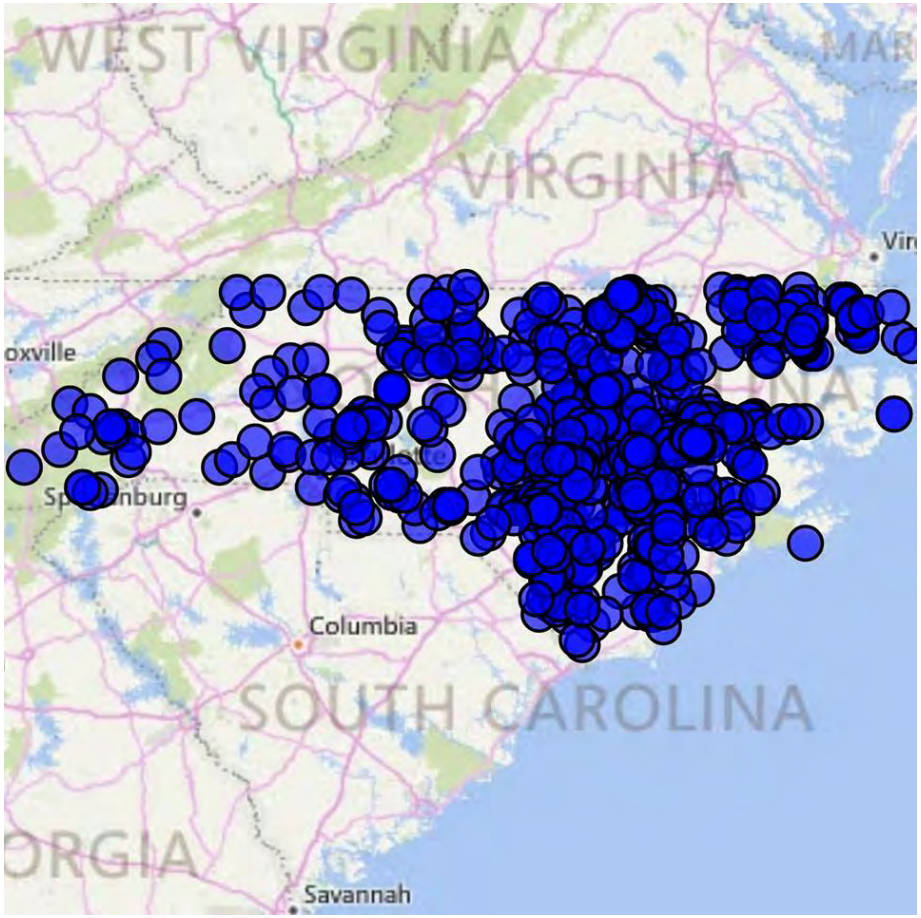


Hurricane Matthew Flooding

- $4.8 Billion in property and economic damage just in NC
- 1.5 Billion in flood property damage in NC
- 100,000 structures flooded
- 46 deaths in US, 29 in NC
- NC swift water rescues: 2,336 rescues
- More than a dozen river level records – exceeding Hurricane Floyd
- Never made landfall in NC
- NFIP losses of $649.5 million

Hurricane Matthew Flooding

- Fayetteville/Lumberton area had significant rain just before Matthew
- Lumberton lost water service
  - No toilets
  - No way to wash hands, shower, wash clothes
  - No water to drink
- Crime
- Businesses lost

Hurricane Matthew Flooding

- 81,979 households requested help from FEMA
- The area has received both federal and state relief funding
  - Block Grant of $237 million (only 6% has been spent!)
  - First 311 days the state couldn't access funds
- FEMA emergency payments do not cover 100% of repair costs
- Many people dependent on volunteer organizations such as Baptists on Mission and Habitat for Humanity

Hurricane Matthew Flooding

Fair Bluff, NC:

- 111 homes damaged by Matthew, FEMA has approved 71 elevations/relocations/ demolitions
- Population has gone from 1,000 to 450

Harvey – August 25 2017

- Category 4 storm with 130 mph winds
- 27 trillion gallons of rain in 6 days
- 60.58" of rain (tropical system record)
- $125B estimated total losses
- NFIP losses $8.9B
- 82 deaths
- 78% of flood losses were OUTSIDE the SFHA

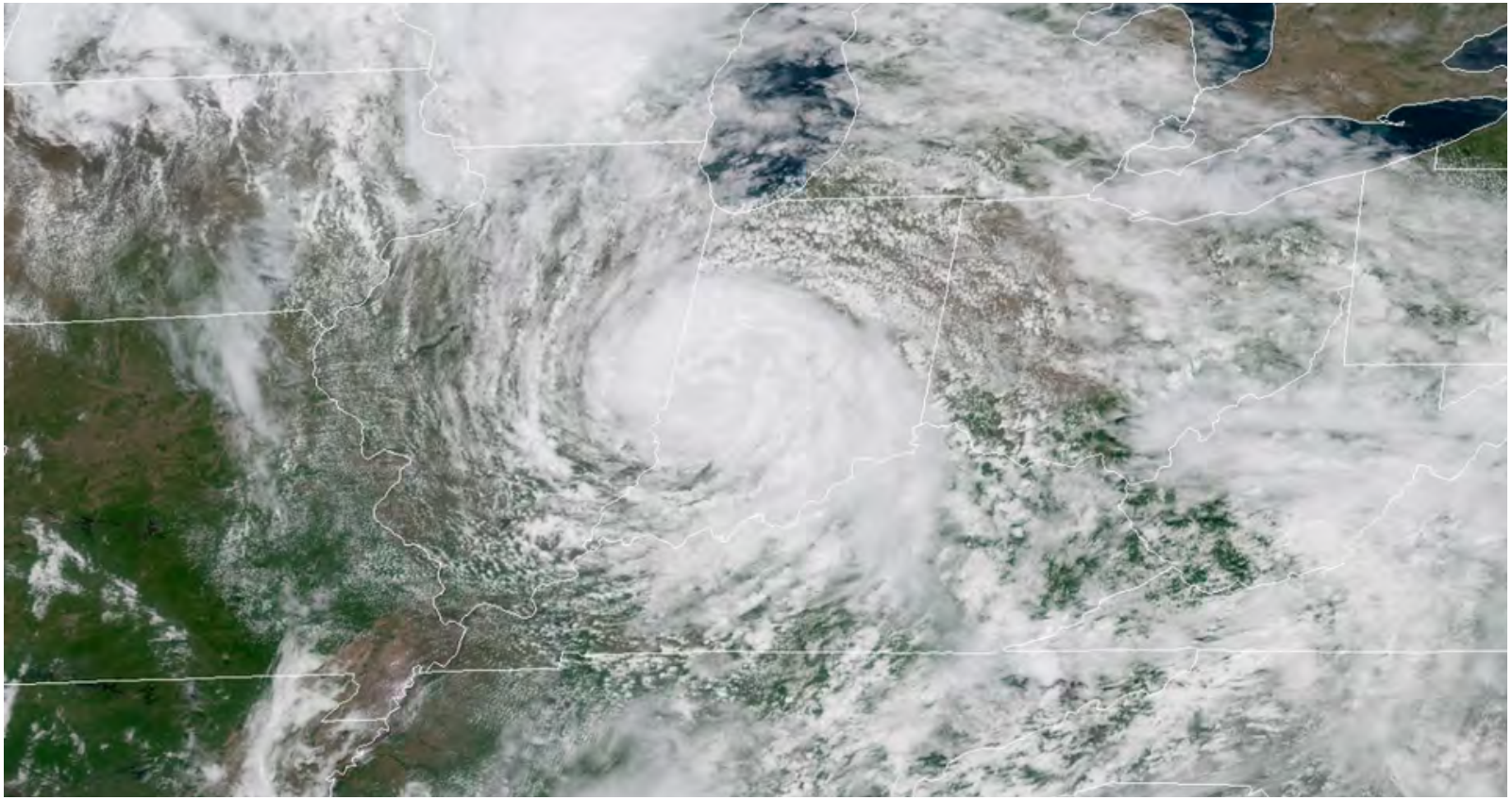
Irma – September 10 2017

- 185 mph winds for 37 hours
- Most ACE (Accumulated Cyclone Energy) on record in tropical Atlantic at 67.5
- 650 miles across – created a huge storm surge
- Estimated total losses of $65 billion
- NFIP losses of $1.1B

Maria – September 16 2017

- Category 4 with 155 mph winds
- USVI, Puerto Rico
- 100% of Puerto Rico without power
- NFIP losses of $32.5 million (few had coverage)
- 2,975 deaths

Alberto – May 2018



Subtropical Storm Alberto

- Max intensity 65 mph (prior to landfall)
- Landfall near Laguna Beach, FL
- Five deaths in NC
- 3rd most intense in month of May in history
- Formed at 19.3° N, 2nd most southern storm in history
- 11th storm to reach Lake Huron as a tropical depression
- Brown ocean effect

Florence and Michael

- Florence NFIP losses $648,333,990 as of January 2019
- 85% of Florence flood losses were uninsured
- FEMA said, “We won’t make you whole.”
- Many businesses still closed
- Many homes uninhabitable
- Michael flood losses estimated at $3 billion – As of January $201 million had been paid by NFIP.

Fair Bluff NC – 20 Years

1999: Hurricane Floyd

- "100 year flood event"
- $6 Billion in damage
- 10" of rainfall
- River crest 13.6'

Fair Bluff NC – 20 Years

2016: Hurricane Matthew

- "500 year flood event"
- $4.8 Billion in damage
- 14" of rainfall
- River crest 16.65'

Fair Bluff NC – 20 Years

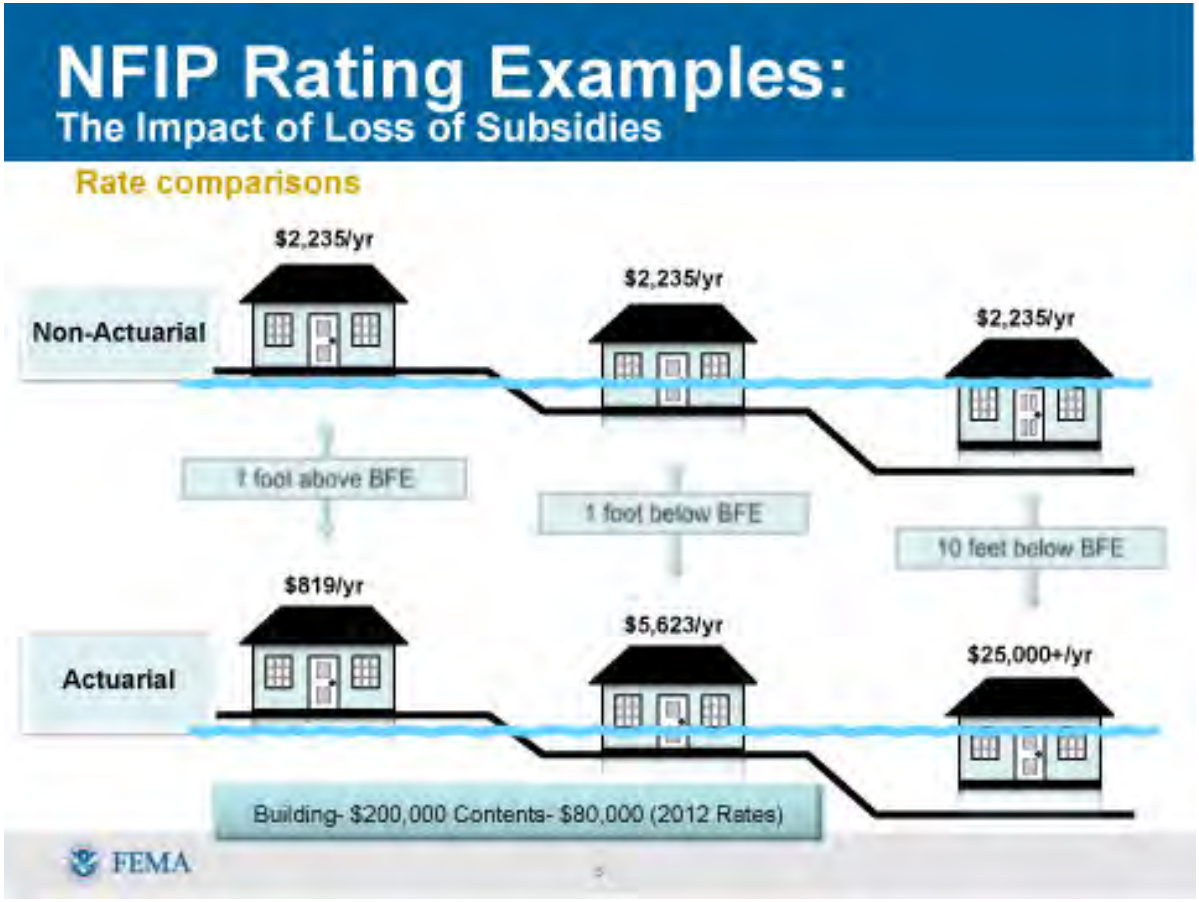
2018: Hurricane Florence

- "1000 year flood event"
- $17 Billion in damage
- 17" of rainfall
- River crest 17.03'

Trend 1: Actuarial Rates

- Biggert-Waters in 2012 attempted to phase out all pre-FIRM rates
  - Eliminated the assumption of policies
  - Lapsed policies triggered the full rate
  - Substantial improvement threshold reduced to 30%
  - Established a 50% threshold for primary dwellings
  - Established a 80% threshold (292 days) for replacement cost
    - Must be insured or spouse – other family don't count!
    - MUST respond to letter verifying occupancy
    - Response is under penalty of perjury

Biggert-Waters 2012



HFIIA - 2014

- Restored the ability to assume a flood policy
- Slowed rate increases for primary homes
- Restored 50% substantial improvement threshold
- Increased policy fee, added new surcharges, Reserve Fund Fee
- Modified mandatory purchase requirement for non-garage detached structures
- Allows policyholder and spouse to have two primary residences

Other Changes

- Policy lapse of more than 90 days triggers full rate
- Flood proofing certificate not issued until building is complete
- Rates for structures below BFE available
- Insurers must report current flood zone and FIRM information – full rate if determinable
- Insurers must offer lowest premium rate available based on information from agent and insured

Other Changes

- Can now get surcharge pro-rate refunds if:
  - Sold house/contents
  - Cancel and rewrite for common expiration date
  - Duplicate policies
  - Nullify if property didn't close
  - Mapped out of SFHA, converted to RCBAP, or no longer required
- New $25 policy fee for tenant with contents-only coverage – must check the box!

Trend 2: Financing NFIP Losses

- Debt after Katrina was $16.9B
- After Sandy, it increased to $24B
- When Harvey hit, debt stood at $23B
  - NFIP borrowing authority was $30B with anticipated claims of $11 Billion – not enough cash to pay claims!
- Congress cancelled $16 of debt
- As of September 10, 2018 the NFIP debt was $20.525 billion with $9.475 billion remaining in borrowing authority.

2017 CBO Report

- Costs of NFIP exceed premiums by $1.4B annually
- Shortfall is primarily in the coastal counties
- Coastal counties are 10% of counties in the NFIP but represent 75% of policy count
- 4% of the counties with shortfalls had 90% of the shortfall
- Net surplus of $200M in all inland counties

Distribution of Policies

- 3% in Zone V (Only 15% are currently paying full rate)
- 44% in Zone A
- 32% outside of SFHA
- 21% - ????

Causes of Loss

- 35% Hurricane (storm surge)
- 16% Hurricane (rain)
- 36% Inland Flooding
- 5% Tropical Storms
- 2% Other

56% related to tropical systems

Reinsurance

- September 2016 – first placement
- January 2017 – $1.042 billion of risk to 25 reinsurers
- Premium $150 million
- 26% of losses between $4 billion and $8 billion from a single flooding event (17.2% chance in 2017)
- Will not reduce NFIP debt, but designed to prevent accumulation of more debt

2018 Reinsurance Placement

- 28 Reinsurers
- Covers 18.6% of losses between $4B and $6B and 54.3% of losses between $6B and $8B.
- Total placement is $1.46B for a cost of $235 million
- ONE event cover

NFIP Cat Bond

- Effective August 1, 2018 – July 31, 2021
- $500 million
- 3.5% of losses between $5 billion and 10 billion + 13% of losses between $7.5 billion and $10 billion
- $62 million premium for the first year
- Total risk transfer with reinsurance of $1.96 Billion

2019 Reinsurance

- 28 Reinsurers
- Covers:
  - 14% of losses between $4B and $6B
  - 25.6 % of losses between $6B and $8B
  - 26.6% of losses between $8B and $10B

2019 Cat Bond

- April 17, 2019 – 3 year $300 million bond
- 1st year premium is $32 million
- Covers 2.5% of losses between $6B and $8B
- Covers 12.5% of losses between $8B and $10B

NFIP Reinsurance

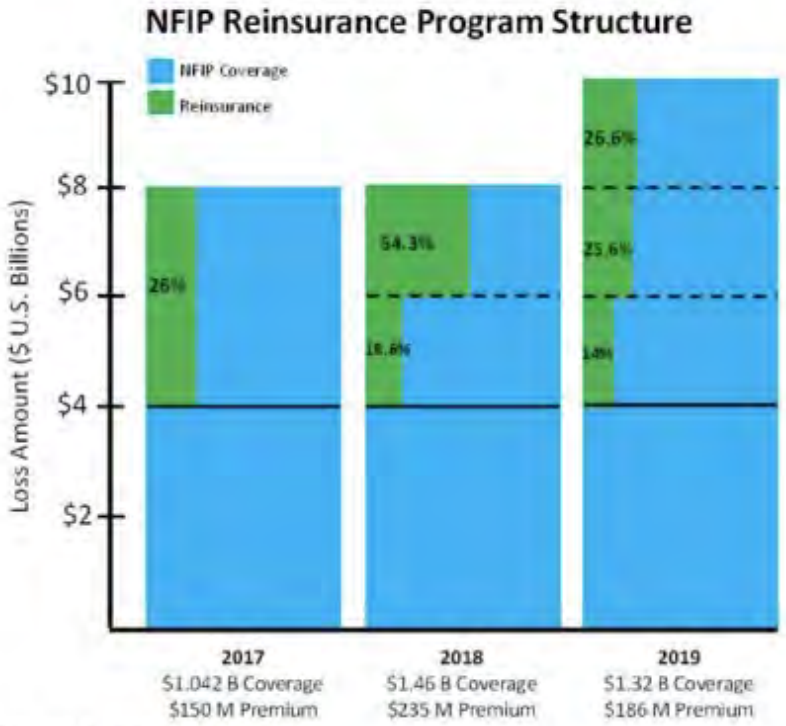


Figure 6 (FEMA, 2019a)

Repetitive Loss Properties

- 2 or more claims of $1,000 or more within 10 years
- Over 122,000 repetitive loss properties
- To participate in the Community Rating System, must take action on repetitive loss areas (not just properties)
- 90% were built prior to 1975

Severe Repetitive Losses

- About 1% of covered properties, >30% of claims
- 4 or more losses over $5,000
- BW12 added: AND cumulative > $20,000
- 2 or more claims where total > market value of property
- Within 10 years, more than 10 days apart

Severe Repetitive Losses

- 19,600+ properties have claims exceeding value
- Example:
  - Mississippi home flooded 34 times
  - Value $69,900
  - Claims paid 663,000
  - Alabama home worth $153,000 paid $2.3 million
  - Houston home worth $116,000 paid $1.6 million

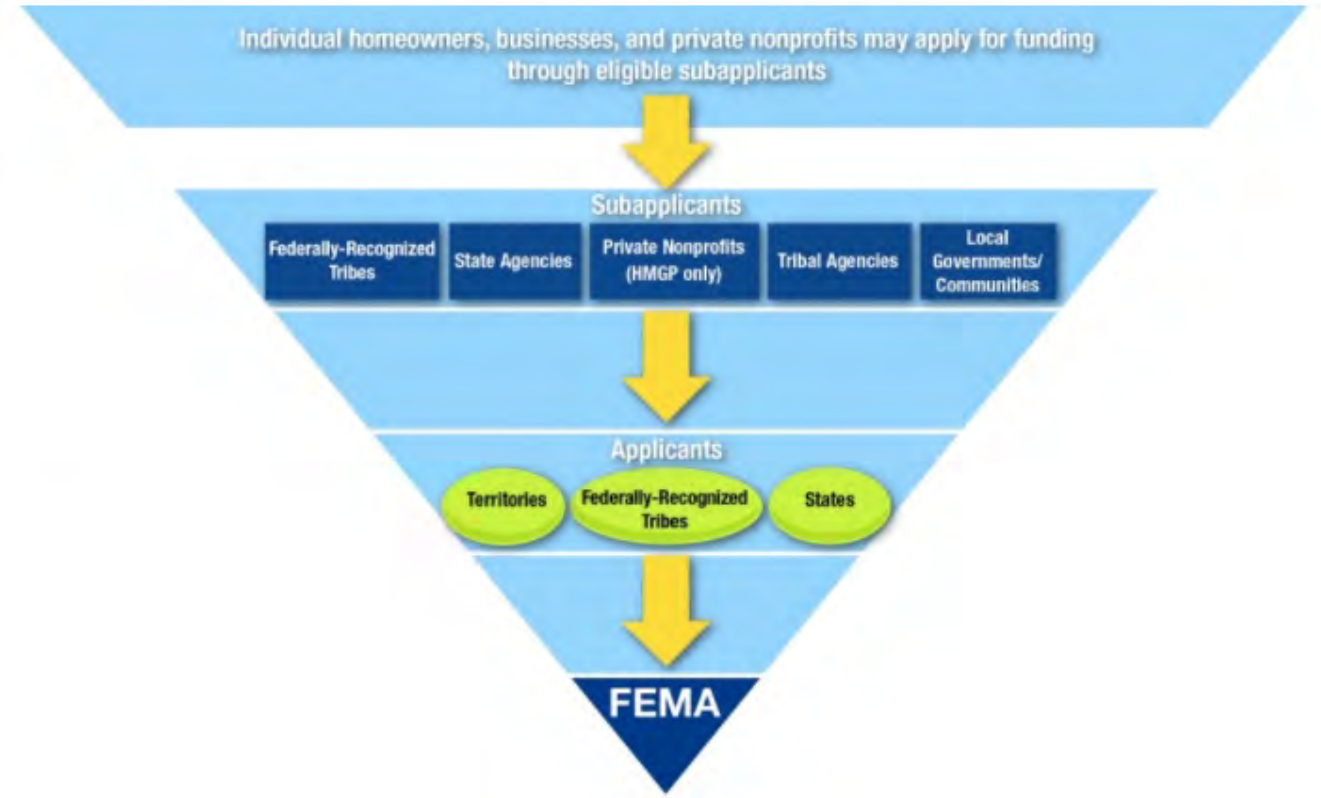
FEMA Grant Programs

- Highest priority are SRL properties
- FY 2018 Flood Mitigation Assistance grant program had $160M available
- FY 2018 Pre-Disaster Mitigation grant program had $235.2M available
- FEMA may pay up to 90% for repetitive loss property mitigation
- Coordinated with state and local grants and ICC coverage

Increased Cost of Compliance

- Repetitive or Severe Losses (2 claims > 50% of value in total)
- Community MUST require mitigation
- $30,000 limit
- Includes elevating, floodproofing, relocation, or demolition
- Can use in conjunction with new mitigation program

NFIP Mitigation Grants



Why Mitigation?

- FM Global found for every dollar spent on mitigation, $105 of losses are avoided
- More resilient structures reduce stress on financing mechanisms
- Mitigation is the only effective and practical solution

NFIP Mitigation – Case Study

Santa Rosa Island, Florida Population 2,500 29 square miles

- All A-zone properties must conform to V-zone building codes
- 3-foot freeboard
- Explain to property owners:
  - Cancel flood insurance if no mortgage but pay loss out of pocket
  - Pay 4 years of premiums equal to $25,000
  - Pay $100,000 to elevate, 6 year payback due to lower premiums
- Received $4 million in grants to rebuild/raise 17 homes

NFIP Mitigation – Case Study

- Chris Bisel in Meyerland neighborhood, SW side of Houston
- 3800 SQFT home
- 2001 Hurricane Allison – 10” of flooding
- 2015 Memorial Day rain – 34” of flooding
- Approved for a $350,000 grant to raise his home 5 feet
- 2016 Tax Day Flood – 20” of flooding
- 2017 Harvey – 55” of water

Mitigation Challenges

- Elevating structures makes them inaccessible to the handicapped/elderly/injured
- Public bathrooms – ground level or elevated
  - 20’ elevation means a 300’ ramp
  - Elevators in a high-corrosive environment also problematic

Private Flood Options

- BW12 – lenders must accept private flood insurance if at least as broad as NFIP policy
  - Who determines “at least as broad”?
  - NOT you
  - Lenders have attorneys, let them decide
- BW12 – also increased the lender’s penalty for non-compliant private flood policies to $2,000 per policy

Alternative Flood Programs

- Primary Coverage
  - 25+ private market insurers in Florida
  - Lloyds, Chubb, Homeowners Choice, and others offer flood
  - May get loss of use coverage
  - May endorse homeowners policy (low risk areas)
- Can self-insure if no lender

Alternative Flood Programs

- Excess Coverage
  - Sits above NFIP policy
  - If value > NFIP limit – OFFER EXCESS
  - Get signed rejection
  - Frame it
- ACORD 60 or other documentation on flood rejection

New Private Market Options

- NC Rate Bureau is working on forms and rates for admitted carrier private flood
- At least one Florida company has expressed interest in selling private flood in NC
- Some companies offering flood as an endorsement to the homeowners policy
  - One deductible
  - One court system
  - No reauthorization madness
  - More precise rating

Private Flood - Cautions

- Lender must accept
- Potential loss of NFIP subsidized rate
- Stability of private market
- Future rate increases in the private market
- ISO form does NOT provide for non-owned debris removal

Avoiding E&O Risk

- DO NOT sign the form asking you to attest to coverage at least as broad as NFIP
- Warn the client of any potential implications of leaving NFIP
- Identify additional coverage available with the private insurer
- Always Always Always offer flood coverage and excess flood if values exceed NFIP limits
- If non-participating community, offer private flood if available and inform the client if it's not

Other Recent Changes

- Lenders are now required to escrow flood policies (with some exceptions)
- Can move from an incorrect form to a correct form and keep limits as long as they don't exceed maximum for the policy form
  - Dwelling to RCBAP
  - General Property Form to Dwelling

Risk Rating 2.0

- Since 1970's NFIP rates have been based on the flood zone per the flood map and the base flood elevation on the elevation certificate
- Risk Rating 2.0 is a shift to more accurate rating
- Effective October 1, 2020 for single family homes
- Considers:
  - Type of flood
  - Cost to rebuild
  - Distance from potential flooding source
  - Fairer rates for lower-value homes

NC Coastal Property Insurance Pool (NCIUA)

- Joint Underwriting Association
  - Functions like an insurance company
  - Market of last resort
  - Member companies are all admitted carriers who write property insurance in the state
  - No surplus is distributed to members, all is retained for future losses – unique to NCIUA

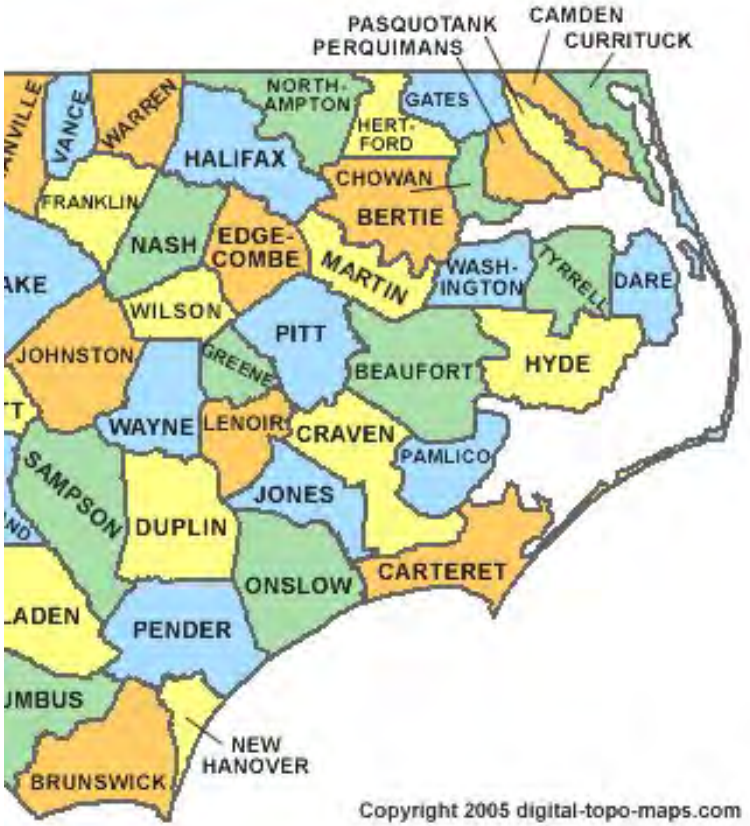
NC CPIP

- North Carolina Insurance Underwriting Association formed in 1969 for barrier islands only
- Added wind & hail coverage for 18 coastal counties in 1998
- Homeowners added in July 2003 (18 coastal counties)
- TIV peaked in 2014 at $91.1B, now just under $75B (March 2019)

NC CPIP Counties

- Beaufort
- Brunswick*
- Camden
- Carteret*
- Chowan
- Craven
- Currituck*
- Dare*
- Hyde*
- Jones
- New Hanover*
- Onslow*
- Pamlico
- Pasquotank
- Pender*
- Perquimans
- Tyrrell
- Washington

NC CPIP Counties



NCIUA Coverage

- Residential – full homeowners
- Commercial
- Wind and Hail only
- 74.6% of residential risk is coastal (not beach)
- Less than10% of total risk is commercial, 74% is wind only

Coverage and Limits

- Maximum limits
  - Residential $750,000
  - Contents 40%
  - Commercial $3 million/$6 million aggregate
- Deductibles
  - 1% named storm deductible
- Excess Value Issues
  - Must insure to 100% of value with excess coverage

Four Issues in Wind and Hail Insurance

1. Rates
2. Loss financing
3. Mitigation
4. Move to private market

NCIUA – Rates

- NC Rate Bureau sets the manual rate
- Legislature sets the surcharges
- NCDOI approves the plan of operation and forms
  - Forms may lag the private market
  - Many private market endorsements not available

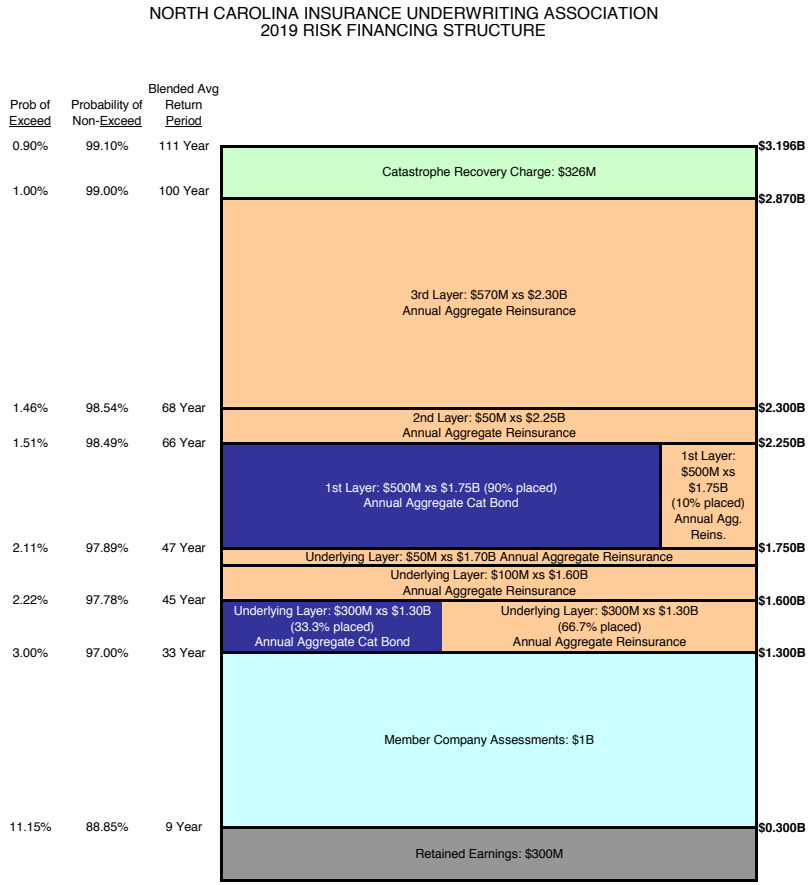
Loss Financing

- House Bill 1305 – retained surplus and ended distributions to member companies
- Allowed NCIUA to pursue reinsurance
- Deficit financing options
  - Surplus
  - Reinsurance
  - Capital Markets
  - Catastrophe Recovery Surcharge

NC CPIP

- Reinsurance
  - Aggregate
  - Traditional market vs. capital markets
  - Member companies provide $1 billion in free reinsurance
- Take-out program recently implemented

NCIUA Reinsurance - 2019



Notes: return periods are based on projection of 11/1/18 exposure ($73.585B of TIV) and model results to 9/30/19 (estimated $71.545B of TIV), model results are based on Hurricane (blended average of RMS LT&NT and AIR LT&NT wDSxSS) and Severe Storm (blended average of RMS and AIR) per occurrence modeling, $3.500M brokerage split between NCIUA and NCJUA based on proportional share of total 2018 reinsurance costs.

NCIUA - Mitigation

- Mitigation Credits Available
  - Hip Roof most popular
  - Opening protection
  - IBHS Gold/Silver/Bronze
- Training for IBHS Fortified Roof evaluators and contractors
- IBHS info: https://disastersafety.org/fortified/fortified-home/

NCIUA - Mitigation

- Pilot program – roof replacement (IBHS Bronze Level 2)
- Work with IBHS
- Video of wind impact (https://vimeo.com/17764719)
- Presentations at the White House and World Bank
- NC is the world leader in wind mitigation initiatives
- Mitigation sub-committee actively exploring options to improve wind mitigation in NC

NCIUA - Mitigation

- IBHS Fortified:
  - Straps for continuous load path
  - Ring-shank nails to attached roof and wall sheathing
  - Sealed roof deck (4-inch ice/water adhesive strips)
  - High wind rated shingles
  - High wind rated siding
  - Change entry doors from inward swing to outward swing

Mitigation Pilot Program

- Reactive:
  - If roof damaged >50%, can get an IBHS Bronze Roof for no extra cost
  - 51 roofs done before Florence - average upgrade cost $3,332
  - Challenges after catastrophe – logistics of replacement
- Proactive:
  - If you replace your roof with IBHS Bronze Roof, will pay up to $600 for the IBHS inspection
  - 6 homes

How did they do in Florence?

- Of 12 claims in the storm area on houses with IBHS roof, only one had major damage
- IBHS reported out of 299 homes with IBHS approved roofing, there was one with major damage and one with minor damage.

Strengthen Your Roof Program

- Up to $6,000 in grant funding to install Fortified Roof by July 1, 2020
- 36,681 visits to strenthenyourroof.com
- 1,214 applications
- 1,056 approved
- Skewed to smaller homes, lower value
- 5.8% of policyholders

Mitigation Challenge

- How much incentive does it take to spur action?
- How to communicate the advantages of mitigation?
- Mitigation is key to addressing affordability and availability of insurance in areas subject to natural disasters
- Mitigation reduces
  - Damages and out of pocket expenses for homeowners
  - Claims costs to NCIUA
  - Reinsurance premium

Shift to the Private Market

- NCIUA has implemented a take-out program for homeowners and homeowners wind
- Policies are moving to the private market, especially wind-only policies
- Exposure is decreasing in the NCIUA
- Impact from Florence to be determined – initial indications are that coverage is being moved to the NCIUA again

Claims Handling

Wind

or

Water?

NFIP Claims Handling

- Adjusters are independent
- Advanced payments not always offered
- MUST file proof of loss form!
- Generally takes longer to receive claim payment (60 days)
- Recoverable depreciation
- Dispute resolution
  - Appeal to FEMA
  - Federal courts have jurisdiction

NFIP vs. FEMA (Harvey)

The average FEMA grant in 2017 was $4,300.

The average flood insurance claim was $115,000.

Dave Maurstad,

FEMA Deputy Associate Administrator

FEMA Relief money

- Take photos of everything
- FEMA will ask you to apply for a Small Business Loan (you don't have to take it)
- Any money from SBA > $25,000 will put a lien on your house
- Must be current with IRS
- MUST HAVE A FEDERAL DISASTER DECLARATION

NCIUA Claims Handling

- NC allows 3 years to file a claim
  - Yes, some people do wait that long
- Priority is proper payment of claim and policyholder satisfaction
- Agent held responsible for explaining coverage
- In a catastrophe, the member insurer is responsible for adjusting if they have underlying policy with a NCIUA wind policy

NCIUA Dispute Resolution

- Appeal to NCIUA
- Appeal to NCDOI
- Appeal to NC courts

Hurricane Florence

- Some member companies did not respond and refused to adjust claim at first
- NCIUA mailed checks the same day they received the adjuster's final report
- Hundreds of independent adjusters meant variance in how the claims were adjusted
- Issue with additional damage from Hurricane Michael
- Industry as a whole did not perform as well as in past storms

Claims Handling – Wind and Flood

- Flood v Wind losses
  - Policy language – concurrent causation
  - NC holds anti-concurrent causation clauses to be enforceable
  - TBD if Florence claims will test
  - Mississippi restricts ACC clauses to situations where covered and excluded perils contemporaneously converge, operating in conjunction, to cause the same loss.
  - Most likely – determination of proportionate damage by wind and water

Claims Handling

- Best scenario – eyewitness accounts of timeline of damage and cause
- Reality – rely on expert opinions
- Reality – courts play a significant role in final determination
- Reality – Every case is unique, no rule of thumb
- Public misconception of storm surge being wind damage "Wind driven water"

E&O Considerations

- Most common errors
  - Failure to procure 29%
  - Failure to recommend 18%
  - Failure to identify 8%
- Type of Transaction
  - Renewal 38%
  - New business, new client 24%
  - New business, existing client 22%

E&O Considerations

- Verify named insured(s)
- Verify mortgagee
- Any changes to the structure in the past year?
- Review deductibles
- Verify limits and match whenever possible
- Is YOUR office ready to handle a catastrophe?
  - Westport $25K expenses to handle claims operations

E&O Considerations

- OK to talk about hurricane deductibles, not OK to talk about hurricane coverage
- Always offer!
- Always document rejection
- Offer excess if values over $250,000
- Advise policyholder to read their policy
- Don’t be an adjuster, especially in a cat situation

Remember

EVERYONE

is in a flood zone

Stony Creek Neighborhood

Barbara Murdock – was flooded in Floyd in New Jersey, moved to NC and asked the question, "Do you have flood insurance?"

Her agent told her, "You don't need that, it's not in a flood zone." (Zone X)

Another agent: "You don't need it, why are you going to pay extra for that when you don't need it?"

Flood Insurance Challenges

- Impact of rising sea levels – estimated 49 million housing units at risk
- Over $1 trillion of infrastructure within 700 feet of the coast
- Population expansion and development
- Higher economic damages
- Difficulty quantifying the risk
- Flood modeling requires a LOT of data – flooding is very localized
- Current models don't take into account the entire loss period
- History doesn't always tell you about the future!

Flood Modeling

- NFIP insures primarily residential – less incentive to model privately
- 2.2 million kilometers of river network in the US
- Multi-dimensional
  - Streams
  - Vulnerability
  - Speed
  - Duration
  - Dimension of time
- Different depths of water can cause same damage

Flood Modeling

- Mitigation efforts must be cost-effective
- A and V zone mitigation has a higher value than lower risk zones
- Low NFIP rates hinder mitigation
- Reinsurance available, as modeling improves capital markets could have interest
- Market willing to cover – at an actuarially sound rate

Flood Modeling

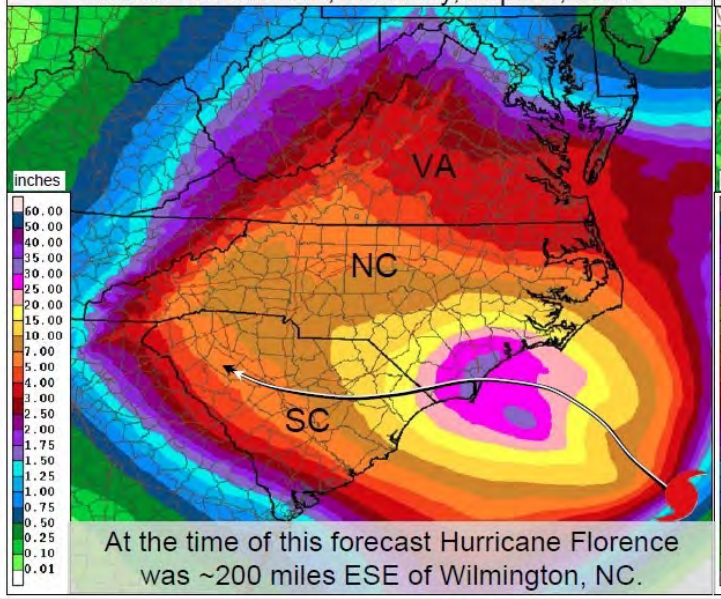
- Map Accuracy is critical
  - Geocoding accuracy
    - Small risks OK but large properties need work
  - Exposure accuracy
    - Digital Terrain Model (DTM) for horizontal perspective
    - Satellite can have 1 meter or more error
    - Currently 10 meter resolution – need better

Pretty darn close…

5-Day Forecast vs. Observed Rainfall

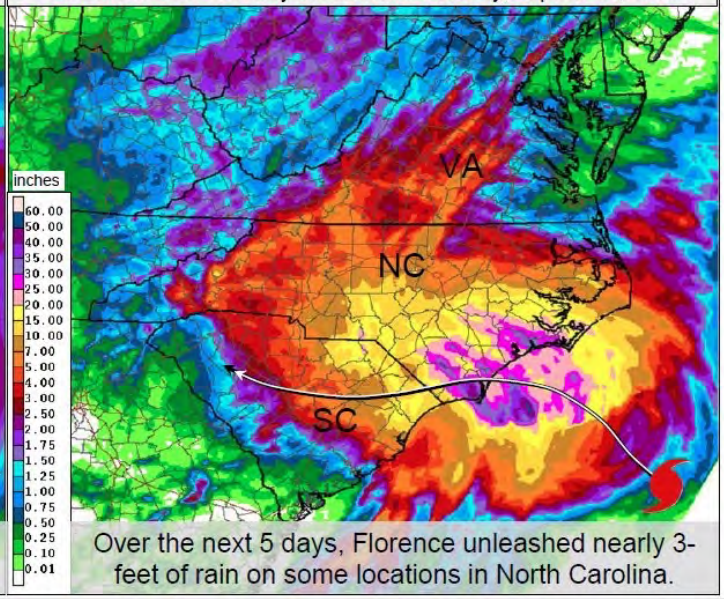
As Hurricane Florence approached the North Carolina Coast last Thursday, Sep. 13, 2018, the NWS was forecasting extreme rainfall and catastrophic flooding in the coming days. Here's a look at how the forecast compares with the estimated rainfall.

WPC 5-day Quantitative Precipitation Forecast (QPF)
Issued 4:51 am EDT, Thursday, Sep. 13, 2018



At the time of this forecast Hurricane Florence was ~200 miles ESE of Wilmington, NC.

NWS 5-day Quantitative Precipitation Estimate (QPE)
Valid 8 am EDT Thursday to 8 am EDT Tuesday, Sep. 13-18, 2018



Over the next 5 days, Florence unleashed nearly 3-feet of rain on some locations in North Carolina.

Wind Models

- There are several widely accepted models in use
- One challenge – PML is not completely correlated with hurricane category
- Public dismisses wind models but believes flood map delineations are perfect!

Your gift…

- Flood marketing bundle
  - Templates you can use to offer flood insurance to your prospects and clients
  - Includes scripts, Special Report, social media posts, more
- Copy of the slides from today's presentation in PDF format
- Link to App State Study

Just give me your business card/name and email and I'll send you the links to download the materials

Questions?