



After **Sandy** – Best Practices & Changes in 2014

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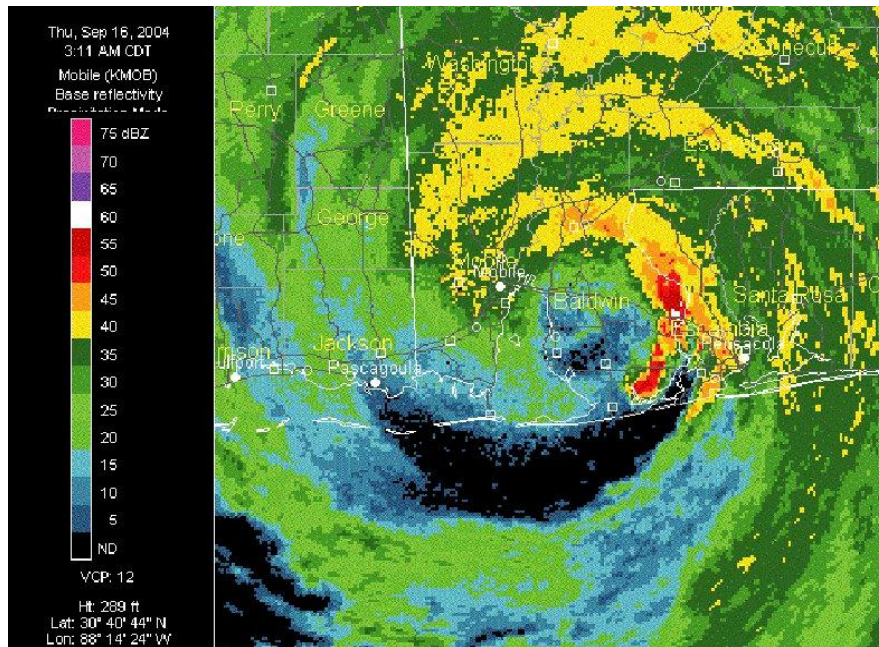
Faculty

John G. Minor, CGC, CFM



Career High Lights

- General Contractor - N.C., Fl. & S.C. for more than 20 yrs
- Appraiser / Umpire/ Expert
- Trained Thermographer – Building Diagnostician
- Flood Plain Manager - FEMA L273
- UF, FSU Stromrisk.org, SERRI, National Hurricane Conference
- DIY – “Last House Standing” - mitigation industry expert



This portion of the conference will recent science behind & the preparation of a property so as to be hardened against wind damage

WIND DAMAGE – PREVENTION - SCIENCE



Wind Damage – Science - IIBHS – Test Facility

This facility is located in South Carolina just south of Charlotte, N.C. The wind “tunnel” has 105 – 310 hp fans with water entrained to replicate rain on a roundtable exposing all faces of the building.



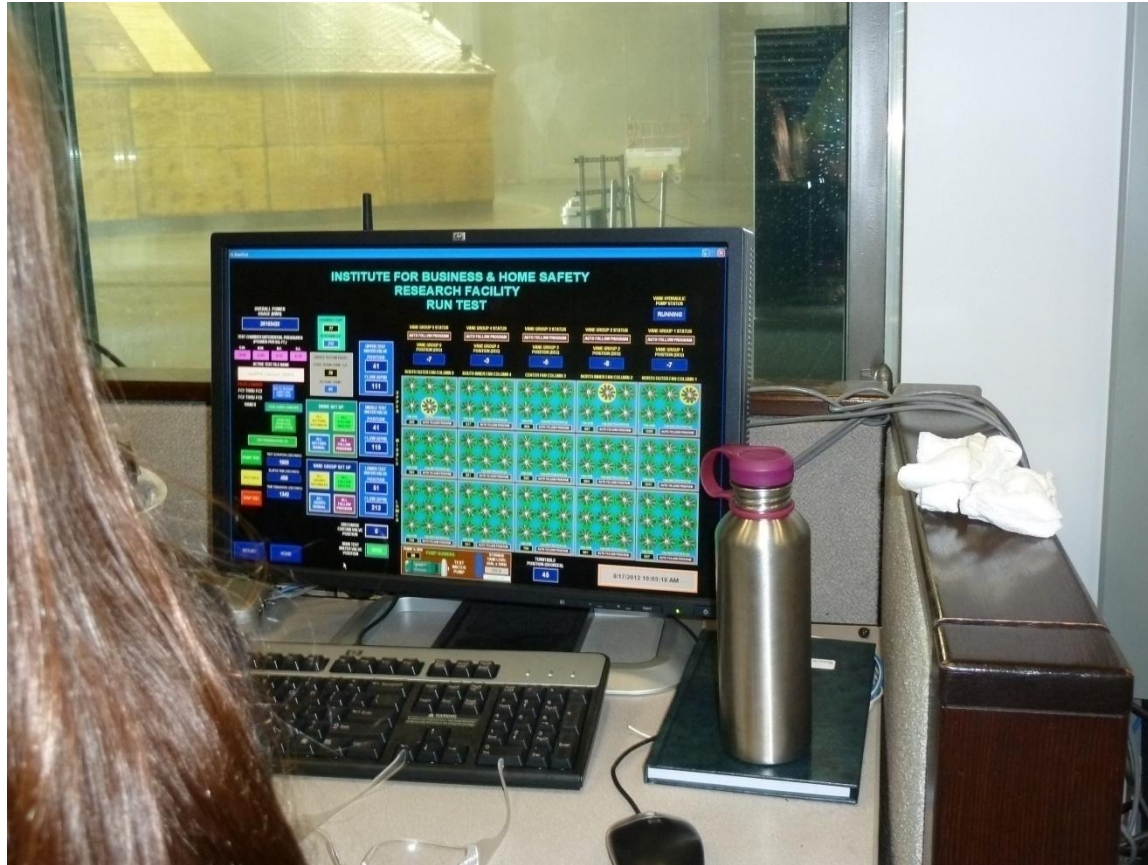
Wind Damage – Science - IIBHS – Test Facility

One of 105 fans



Wind Damage –Science - IIBHS – Test Facility

Baffles to replicate the ebb and flow of a windstorm



Wind Damage – Science - IIBHS – Test Facility

Computers monitor every fan, baffle and the rotation of the replica single family home



Wind Damage –Science - IIBHS – Test Facility

Careful documentation of conditions, before during and after each test



Wind Damage – Science - IIBHS – Test Facility

Careful study goes into damages that result from windstorm

Wind Characteristics - angle of attack, run up speed

Thermal aging of shingles, advent of “lifetime “shingles



Wind Damage – Science - UF @ IIBHS – Test Facility

The University of Florida Coastal Engineering program is working with SERRI the DHS and others at the IIBHS facility. UF is one of the leaders in the field of the study of extreme weather and its effect on structures.



Wind Damage – Science - UF @ IIBHS – Test Facility

2010 International Building Code is no longer based on the ASCE 05.



Wind Damage – Science - UF @ IIBHS – Test Facility



Wind Damage – Prevention

SERRI test roofs– 3 manufacturers 150 mph rated shingles, 25 yr comps and dimensional “lifetime” shingles. Different damage profiles



Wind Damage – Science - UF

UF Hurricane Research Team – Hurricane Isaac



Wind Damage – Science

This the facility often referred to as “The Ultimate Hurricane Simulator”



Wind Damage – Prevention



Wind Damage – Science

Hurricanes can drop as much as 2.4 trillion gallons of water per day



Wind Damage – Prevention



Wind Damage – Prevention – Roof Underlayment

Use of a double underlayment barrier specifically at the seams of modern plywood provides good protection from water leaks due to roof damage, resulting in less claims and lower premiums thru wind mitigation credits



Wind Damage – Prevention - IIBHS – Test Facility

Gable End Bracing – installed to protect an area susceptible to wind damage potentially resulting in building failure



Wind Damage – Prevention – DIY Network

Installation of hurricane protection @ window openings



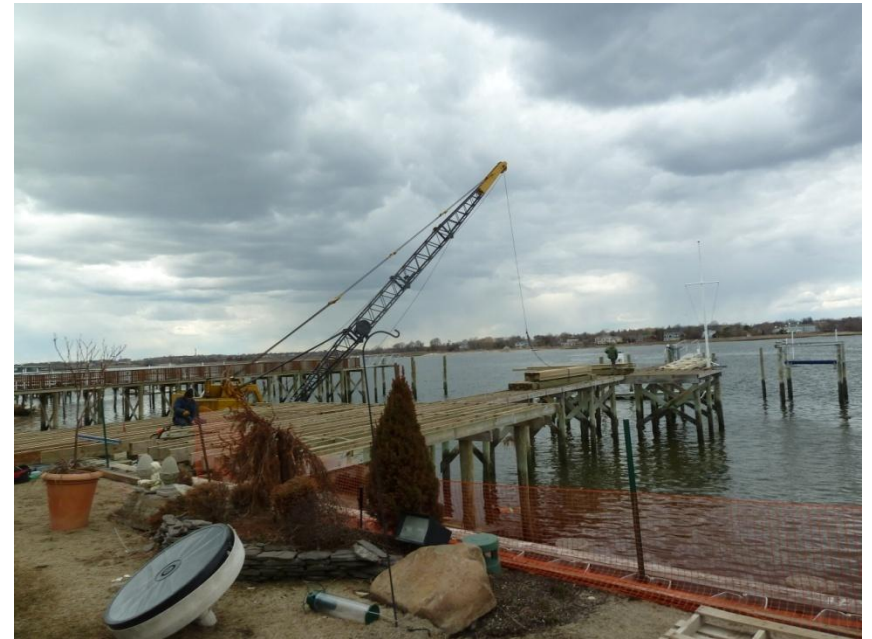
Understanding the unique challenges of waterfront properties

HURRICANE SANDY -DAMAGE

WIND V FLOOD

Hurricane Sandy

- 2 costliest storm in US history up to 75 B
- Largest Atlantic storm on record 1,100 miles in diameter
- 286 people killed in 7 countries





1.29.2013 President Obama signed (P.L. 113-2) SRIA

SANDY RECOVERY IMPROVEMENT ACT



PUBLIC ASSISTANCE ALTERNATIVES

Fact Sheet

- FEMA is authorized to develop alternative procedures that an applicant may elect to use for Public Assistance permanent work and debris removal projects.
- FEMA may expeditiously implement this authority as a pilot program until such time that the Agency promulgates implementing regulations.
- Once implemented, FEMA may apply these alternative procedures to future emergencies and major disasters, but may also do so in current declared events for projects where construction has not yet begun.
- These alternative procedures will, at minimum, include the following specified procedures:



PERMANENT WORK ALTERNATIVES

Fact Sheet

Permits permanent work grants to be based on fixed estimates, with applicants accepting responsibility for any actual costs above the estimate—this will significantly accelerate the distribution of grant funds and significantly reduce administrative costs associated with grants based on actual costs.

- o Permits FEMA to accept the mutually agreed upon certified cost estimates prepared by applicants' licensed engineers.
- o Applicants may request to utilize a FEMA-funded, independent validation of project estimates for permanent repair projects with an estimated federal share of at least \$5 million.
- o Allows applicants accepting grants based on fixed estimates to use any cost savings for activities that reduce risk in future disasters and other activities to improve future PA operations.
- o Permits applicants to consolidate multiple permanent work projects.
- o Eliminates the reduction in awards previously required by law for applicants who determine that the public welfare would not be best served by restoring a damaged facility or its function to the pre-disaster design (so-called “alternate projects”).



DEBRIS REMOVAL WORK ALTERNATIVES

Fact Sheet

- Permits debris removal grants to be based on fixed estimates, with applicants accepting responsibility for any actual costs above the estimate—this will significantly accelerate the distribution of grant funds and significantly reduce administrative costs associated with grants based on actual costs.
- o Permits applicants to retain income from debris recycling without an offset from their grant.
- o Allows the use of a sliding scale for applicants' debris removal cost share to incentivize faster and more cost-efficient debris removal.
- o Permits the establishment of financial incentives for a FEMA-approved pre-disaster debris management plan and at least one pre-qualified debris contractor.
- o Allows applicants to use excess funds for activities to improve future debris removal operations.
- o Permits the reimbursement of straight time force account labor costs for applicants' employees performing debris removal work.



HAZARD MITIGATION

Fact Sheet

Streamlined Procedures: Directs FEMA to expedite the National Environmental Policy Act and the National Historic Preservation Act compliance processes. Additionally, FEMA may implement streamlined procedures that consider multiple structures as a group for an analysis of cost-effectiveness and satisfaction of cost-share requirements.

- Advance Assistance: Allows FEMA to provide up to 25 percent of the estimated costs for eligible hazard mitigation measures to a State grantee before eligible costs are incurred.
- Allows FEMA to waive notice and comment rulemaking to expeditiously implement state administration of Hazard Mitigation Grant Program (HMGP), if FEMA determines that doing so is necessary to expeditiously implement the administration of HMGP by States as a pilot program.
- Once implemented, FEMA may apply this provision to previously declared disasters for which the application period has not ended as of January 29, 2013 and all future disasters.



DISPUTE RESOLUTION PILOT PROGRAM

Fact Sheet

- Directs FEMA to establish a nationwide dispute resolution pilot program, including arbitration by an independent review panel, for Public Assistance projects.
- • This nationwide dispute resolution pilot program will only be available for:
 - o Disputes in an amount of at least \$1 million; and
 - o Projects with a non-federal cost share requirement; and
 - o Applicants that have completed a first appeal pursuant to 44 C.F.R. § 206.206.
- • FEMA will establish an independent arbitration review panel and decisions made by the independent review panel will be binding.
- • Requests for review under this nationwide dispute resolution pilot program, once implemented, must be submitted by December 31, 2015.
- • Arbitration available under this nationwide dispute resolution pilot program is separate and distinct from the arbitration process established for Public Assistance projects for major disasters declared in response to Hurricanes Katrina and Rita.

Finding a flood zone

The Federal Emergency Management Agency develops Flood Insurance Rate Maps to show potential flood areas. These maps are used by home lending organizations and insurance companies to determine whether flood insurance may be mandatory for a homeowner. Areas that are within an A or V designation fall within a mandatory insurance zone. Some of the zones in our area:

Zone V
Areas along the coast that may see storm-induced waves higher than 3 feet along with flooding.

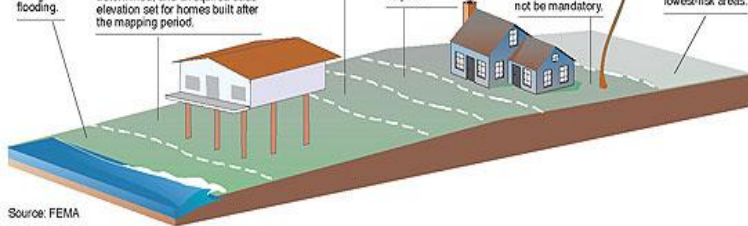
Zone AE, VE or Zone A followed by a number:
These are zones within the mandatory area where a more detailed engineering analysis has been done, a specific level of potential flooding has been determined, and a required base elevation set for homes built after the mapping period.

Zone AH
These are areas where flooding between 1 to 3 feet is likely to occur.

Zone AO
This is an overwash area, where water may rise 1 to 3 feet and move with some velocity, usually because terrain is sloped.

Shaded Zone X
Known as the 500-year flood plain, it represents a .2 percent chance of flood in a given year. Insurance would not be mandatory.

Unshaded Zone X
These areas are outside the 500-year flood plain and are considered the lowest-risk areas.



Assistance to individuals & households, Unified Federal Review, Small Project Threshold , Essential Assistance & Tribal Requests for Major Disasters & Recommendations for Reducing Costs to Future Disasters

SRIA – ADDITIONAL SECTIONS

Fact Sheet

Federal Assistance to Individuals and Households.

- Provides the Agency explicit authority to lease and repair rental units for use as direct temporary housing.

Unified Federal Review.

- Requires the President, in consultation with the Council on Environmental Quality and the Advisory Council on Historic Preservation, to establish a unified and expedited interagency environmental and historic preservation process for disaster recovery projects within 18 months of enactment.

Small project threshold review.

- By January 29, 2014, FEMA will evaluate and report to Congress whether an increase in the Public Assistance small project threshold is appropriate. FEMA will then take appropriate action based on the outcome of the report. FEMA must review the small project threshold every three years thereafter.

Fact Sheet

Essential Assistance.

- Authorizes FEMA to reimburse straight-time force account labor costs for state, tribal and local government employees performing emergency protective measures, if such work is not typically performed by those employees and is the type of work that may otherwise be carried out by contract or agreement with private entities or individuals.
- Affirms that child care expenses are an eligible expense for reimbursement as part of Other Needs Assistance.

Individual Assistance Factors.

- Requires FEMA to review and revise through rulemaking the factors considered when evaluating the need for the Individual Assistance Program in a major disaster or emergency by January 29, 2014.

Fact Sheet

Tribal Requests for a Major Disaster or Emergency Declaration under the Stafford Act.

- Amends the Stafford Act to provide for an option for the Chief Executive of a federally recognized Indian tribe to make a direct request to the President for a major disaster or emergency declaration. The amendment provides that Tribes may elect to receive assistance under a State's declaration, provided that the President does not make a declaration for the Tribe for the same incident.
 - Authorizes the President to establish criteria to adjust the non-federal cost share for an Indian tribal government consistent to the extent allowed by current authorities.
 - Requires FEMA to consider the unique circumstances of tribes when it develops regulations to implement the provision.
 - Amends the Stafford Act to include federally recognized Indian tribal governments in numerous references to state and local governments within the Stafford Act.
- o Include recommendations on improving resiliency of states, local, and tribal communities to lower future response and recovery costs.

Fact Sheet

- **Recommendations for Reducing Costs to Future Disasters.**
- • Requires FEMA to make recommendations for the development of a national strategy to reduce costs on future disasters by July 30, 2013. The recommendations for the National Strategy should:
 - o Respect the constitutional roles and responsibilities of the different levels of government, as well as the private sector;
 - o Address vulnerability to damage from flooding, severe weather, and other hazards;
 - o Analyze gaps and duplication of emergency preparedness, response, recovery and mitigation at all levels of government; and
 - o Include recommendations on improving resiliency of states, local, and tribal communities to lower future response and recovery costs.



FLOOD ZONES – FEMA

Flood Zones – FEMA

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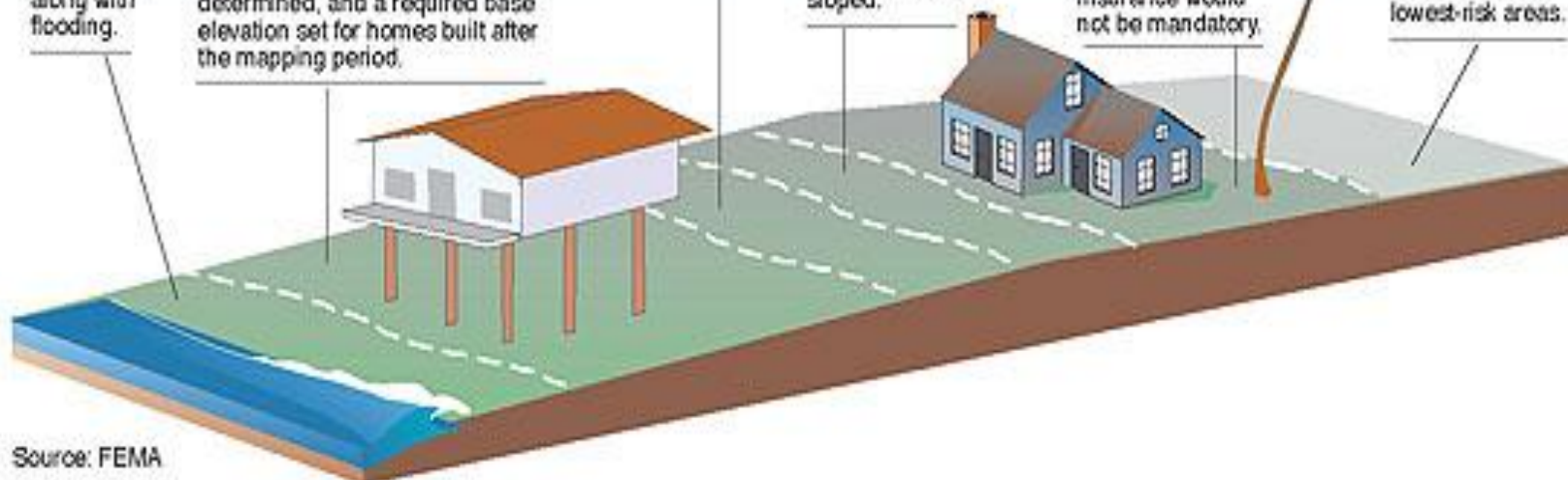
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Source: FEMA



50 % Rule

FLOOD STATUTES

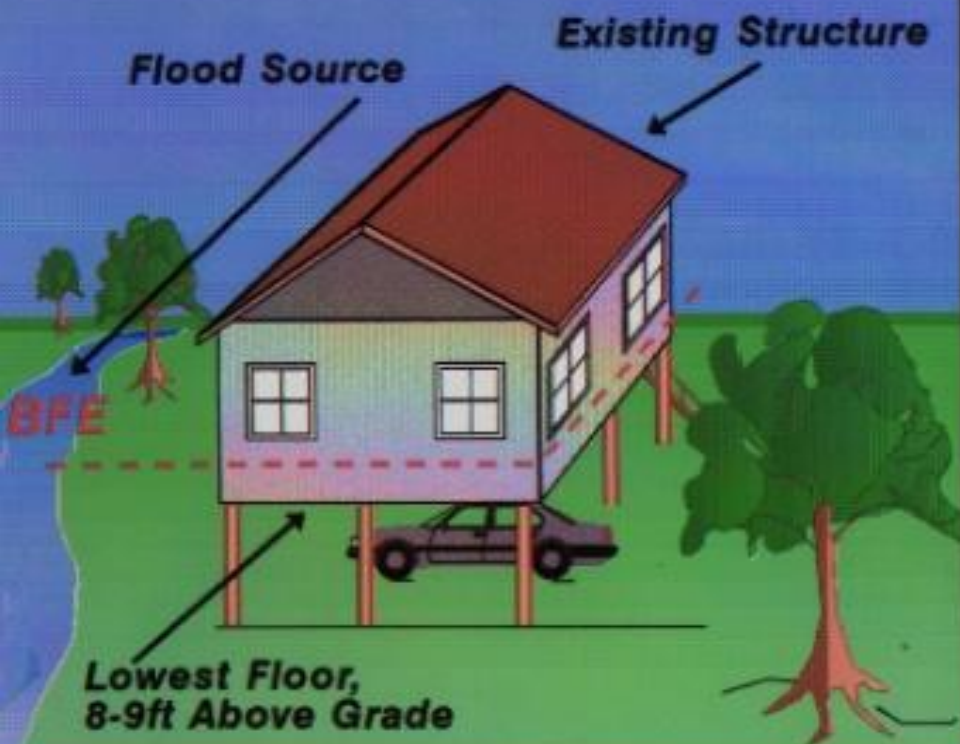
50 % Rule

– **The 50% Rule as identified by the International Building Code 2003 is:**

- **R105.3.1.1 Substantially improved or substantially damaged existing buildings in areas prone to flooding-** For applications for reconstruction, rehabilitation, addition, or other improvement of existing buildings or structures located in an area prone to flooding as established by Table R301.2(1), the building official shall examine or cause to be examined the construction documents and shall prepare a finding with regard to the value of the proposed work.
- For buildings that have sustained damage of any origin, the value of the proposed work shall include the cost to repair the building or structure to its pre-damage condition.
- If the building official finds that the value of proposed work equals or exceeds 50 percent of the market value of the building or structure before the damage has occurred or the improvement is started, the finding shall be provided to the board of appeals for a determination of substantial improvement or substantial damage.
- Applications determined by the board of appeals to constitute substantial improvement or substantial damage shall meet the requirements of Section R323.

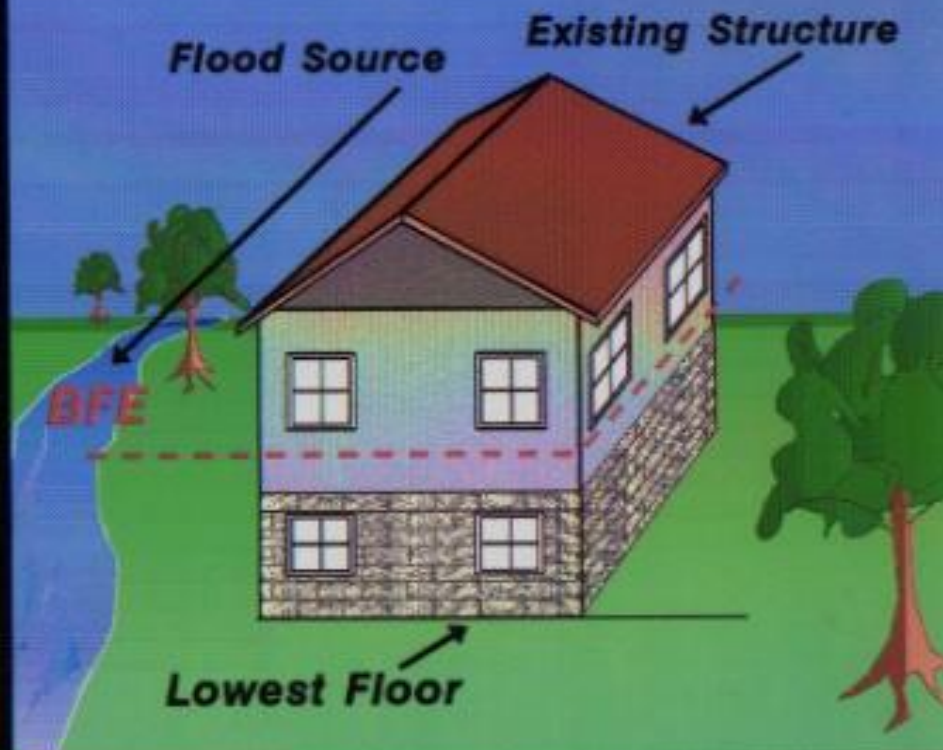
Enclosure Below Existing Elevated Structures

Elevated Existing PRE-FIRM Structure



- Area Below Structure Used Only For Parking & Limited Storage
NOTE: This Structure is rated PRE-FIRM

Substantial Improvement Enclosure

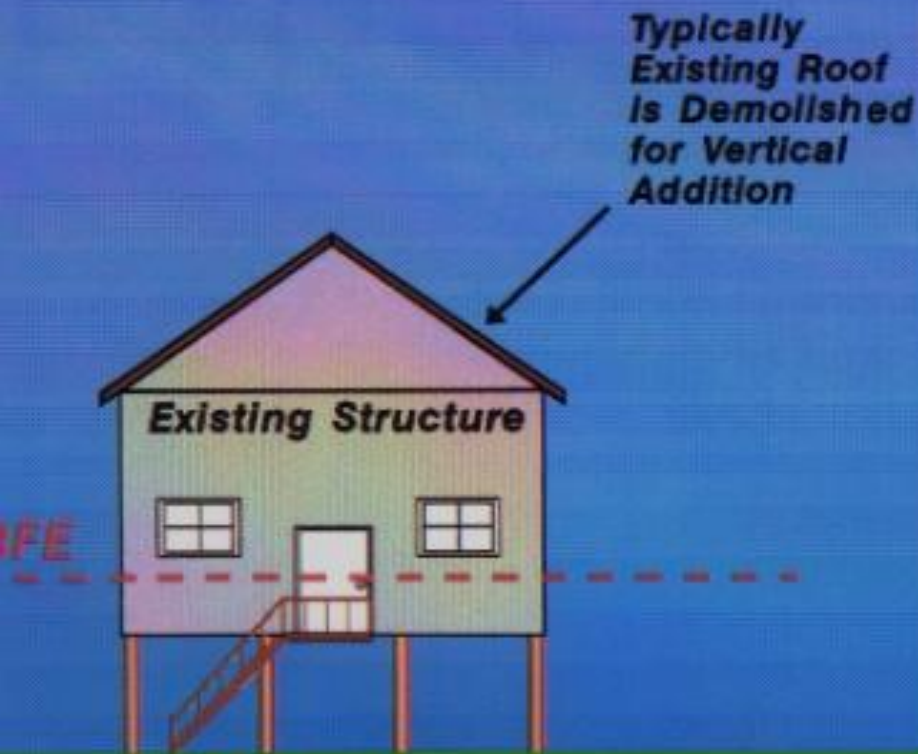


- This Enclosure is a Violation of FPM Regulations
NOTE: Substantial Improvement, Re-rate POST-FIRM

VERTICAL ADDITIONS

V ZONE

Existing PRE-FIRM Structure in V Zone



Compliant Vertical Addition



- Structure on right is compliant substantial improvement, It will be rated POST-FIRM (rate would be reasonable).
- If not elevated, it would be in violation, It would also be rated POST-FIRM with high rates.



Wind & Flood Damage – Hurricane

Flood Plain Management minimums are not always sufficient. The NFIP is active in more than 20,000 communities that are rated due their compatibility with the CRS system of points for aggressive flood plain management



Wind & Flood Damage – Hurricane



Wind & Flood Damage – Hurricane



Wind & Flood Damage – Hurricane

Elevate mechanical outside of the flood plain plus free board



Flood - Mold Remediation/ Prevention

Encapsulation of water damaged or mold affected framing components



Big Changes for NFIP

BIGGERT- WATERS

Biggert – Waters

- **In July 2012, the U.S. Congress passed the Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12)**

which calls on the Federal Emergency Management Agency (FEMA), and other agencies, to make a number of changes to the way the National Flood Insurance Program (NFIP) is run. Some of these changes already have occurred, and others will be implemented in the coming months. Key provisions of the legislation will require the NFIP to raise rates to reflect true flood risk, make the program more financially stable, and change how Flood Insurance Rate Map (FIRM) updates impact policyholders. The changes will mean premium rate increases for some—but not all—policyholders over time. Homeowners and business owners are encouraged to learn their flood risk and talk to their insurance agent to determine if their policy will be affected by BW-12.

Subsidized Rates

- **More than 80 percent of policyholders (representing approximately 4.48 million of the 5.6 million policies in force) do not pay subsidized rates.**
- About 20 percent of all NFIP policies pay subsidized rates. Only a portion of those policies that are currently paying subsidized premiums will see larger premium increases of 25% annually starting this year, until their premiums are full-risk premiums. Five percent of policyholders – those with subsidized policies for non-primary residences, businesses, and severe repetitive loss properties - will see the 25% annual increases immediately. Subsidies will no longer be offered for policies covering newly purchased properties, lapsed policies, or new policies covering properties for the first time.
- The 80% of all NFIP policies that already pay full-risk premiums will not see these large premium increases. Most policyholders will see a new charge on their premiums to cover the Reserve Fund assessment that is mandated by BW-12. Initially, there will be a 5% assessment to all policies except Preferred Risk Policies (PRPs). The Reserve Fund will increase over time and will also be assessed on PRPs at some undetermined future date.
- Additional changes to premium rates will occur upon remapping, the provision calling for these premium rate changes will not be implemented until the latter half of 2014.

Rate Changes

Rate changes will have the greatest effect on properties located within a Special Flood Hazard Area (SFHA) that were constructed before a community adopted its first Flood Insurance Rate Map (FIRM) and have not been elevated.

For many communities the initial FIRM would have been adopted in the 1970's and 1980's. Your local insurance agent will be able to provide you the initial FIRM date for your community.

- Many of these pre-FIRM properties have been receiving subsidized rates. Subsidies are already being phased out for non-primary residences. Starting this fall, subsidies will be phased out for businesses; properties of one to four residences that have experienced severe repetitive loss; and properties that have incurred flood-related damages where claims payments exceed the fair market value of the property. Premiums for these properties will increase by 25% per year until they reach the full risk rate.
- Subsidies are not being phased out for existing policies covering primary residences. However, the subsidy provided to primary residences could still be lost under conditions that apply to all subsidized policies. Subsidies will be immediately phased out for all new and lapsed policies and upon sale of the property. There may also be premium changes for policyholders after their community is remapped. But that provision of the Act is still under review and will be implemented in the future.

New Sales & Full Risk Rate

- **Starting this fall, for all currently subsidized policies, there will be an immediate increase to the full risk rates for all new and lapsed policies and upon the sale/purchase of a property. Full risk rates will be charged to the next owner of the policy.**
- “ **Full Risk Rate** – the premium reflects both the risk assumed by the program (that is, the expected average claims payment) and all administrative expenses. In the case of flood insurance, this means the premium takes into account the full range of possible flood losses, including the rare but catastrophic floods as well.
- Of the many factors that determine the full risk rate of a structure, the single most important is the elevation of the structure in relation to the Base Flood Elevation (BFE). A community's Flood Insurance Rate Map (FIRM) indicates the area of the community that has a 1% or greater annual chance of flooding. That area is called the Special Flood Hazard Area, or high-risk zone. Put another way, the BFE is the elevation where there is a 1% or greater annual chance of flooding. For a property in the high-risk zone, you need to know the elevation of the structure in relation to the BFE. Generally, the higher the elevation above the BFE, the lower the flood risk. The information is shown on an Elevation Certificate, which is a form completed and signed by a licensed engineer or surveyor. So to determine the premium for a property in a high-risk zone, you first need an elevation certificate. Then, an insurance agent can calculate the premium based on the amount of coverage desired.

Grandfathering

- About 20 percent of all NFIP policies pay subsidized rates. However, only 5 percent of policyholders – those subsidized policies covering non-primary residences, businesses, and severe repetitive loss properties - will see immediate increases to their premiums.
- **NFIP Grandfather procedure** provides eligible property owners the option of using risk data from previous Flood Insurance Rate Maps (FIRMs) if a policyholder maintained continuous coverage through a period of a FIRM revision or if a building was constructed “in compliance” with the requirements for the zone and BFE reflected on a previous FIRM. A provision of BW-12, however, requires FEMA to use revised flood risk data (zone and BFE) after a map revision. The legislation provides a 5-year mechanism to phase-in the new rates. This provision impacts the NFIP Grandfather procedure and will be implemented in the latter half of 2014. Many of the precise details of this implementation are still under development.

Properties without substantial damage now in Flood Zone

FEMA's Hazard Mitigation Assistance (HMA) HMA :

programs provide funds for projects that reduce the risk to individuals and property from natural hazards. These programs enable mitigation measures to be implemented before, during, and after disaster recovery. Local jurisdictions develop projects that reduce property damage from future disasters and submit Grant applications to the State. The States submit applications to FEMA based on State criteria and available funding.

- **Hazard Mitigation Grant Program (HMGP)** - The Hazard Mitigation Grant Program provides grants to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during recovery from a disaster.

Hazard Mitigation Assistance

- **Flood Mitigation Assistance (FMA)** - The Flood Mitigation Assistance program provides funds on an annual basis so that measures can be taken to reduce or eliminate risk of flood damage to buildings insured under the NFIP.
- **Pre-Disaster Mitigation Program (PDM)** - The Pre-Disaster Mitigation Program provides nationally competitive grants for hazard mitigation plans and projects before a disaster event. States can receive PDM funds regardless of whether or not there has been a disaster declared in that state.

FEMA encourages property and business owners interested in implementing mitigation activities to contact their local community planning, emergency management, or State Hazard Mitigation Officer for more information. Individuals and businesses may not apply directly to the State or FEMA, but eligible local governments may apply on behalf of a private entity. Your community will be working with the State to develop applications for HMA funding and implement the approved mitigation projects. Information about the HMA programs can be found at <http://www.fema.gov/hazard-mitigation-assistance>.



"Saving Homeowners from Onerous Rate Escalation"

SHORE ACT

SHORE

- Bob Menendez (D-N.J.) introduced the SHORE Act, short for the "Saving Homeowners from Onerous Rate Escalation"
- The law would spread out the increases in flood insurance rates over 10 years – 5 percent for the first five years, and an additional 25 percent per year afterwards until full risk rate is reached for properties that would have had their subsidies phased out at 25 percent, per year, immediately.
- It would apply to all properties, including secondary homes, in flood zones.
- Flood insurance was de-subsidized in 2012 as part of the **Biggert-Waters** flood insurance reform law, a measure that was attached to a federal transportation bill and coupled with an extension of federal student loan subsidies.

SHORE

- Homeowners could face annual flood insurance premiums of up to \$31,000 a year under reforms included in the 2012 Biggert-Waters flood insurance reform law if they do not raise their homes to comply with updated flood maps.
- Raising a home could cost tens of thousands of dollars at a minimum. Some homeowners have said at public meetings that they are considering abandoning their homes since they cannot afford to raise them.



Freeboard is a voluntary increase in the height of new construction or substantial damage requiring elevation adopted by a community

FEMA – FREE BOARD

Example of Savings on NFIP Premiums* with Freeboard

	V Zone ¹		A Zone ²	
	Annual savings	30-year savings	Annual savings	30-year savings
1' freeboard	\$1,360 (25%)	\$40,800	\$502 (41%)	\$15,060
2' freeboard	\$2,730 (50%)	\$81,900	\$678 (55%)	\$20,340
3' freeboard	\$3,415 (62%)	\$102,450	\$743 (60%)	\$22,290

**NFIP premiums based on May 2007 rates for a one-floor residential structure with no basement built after a FIRM was issued for the community (post-FIRM rates differ from pre-FIRM rates). \$500 deductible/ \$250,000 coverage for the building/ \$100,000 for contents.*



Critical Path

FLOOD CLAIMS

Hurricane Claims – Critical Path

- Documentation of Existing – Pictures pre & post event especially flood line & wind damages
- Elevation Certificate -current elevation
- Understanding of current elevation, required elevation (FIRM Map) & possibly free board requirements
- Pre firm & post firm for community date
- Inundation Map www.fema.gov/business/nfip
- Weather Report
- Structural Analysis
- Foot Print of Structure
- Cost estimate broken between wind and flood with code broken out as well as a replacement cost estimate to code