FEMA

Advisory Base Flood Elevations Overview

Coastal Outreach Advisory Team
April 22, 2013

RiskMAP
Increasing Resilience Together

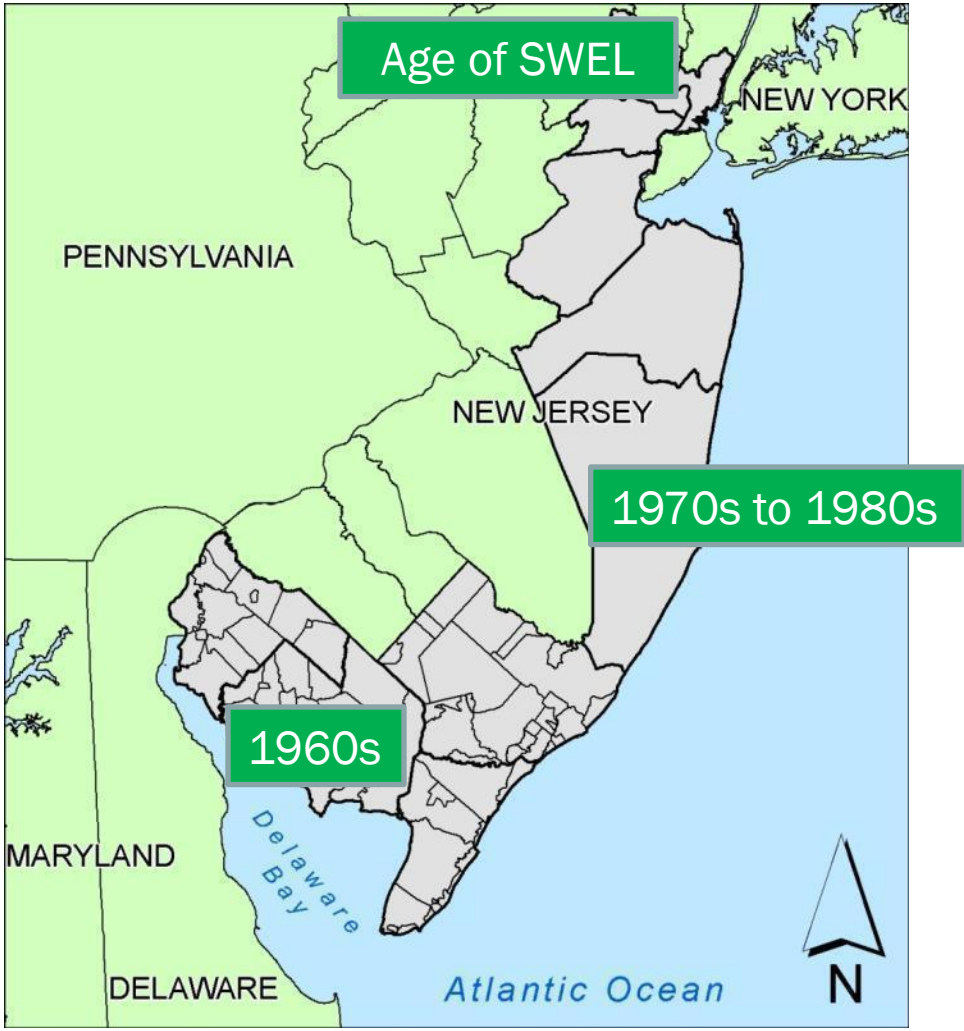
Why is Updated Flood Hazard Information Needed Post Hurricane Sandy?

- State and local officials face major decisions as they plan the rebuilding and recovery efforts throughout local communities
- Property owners with damaged or destroyed property face major decisions about rebuilding their homes or businesses
- The existing Flood Insurance Rate Maps are based on outdated engineering analyses and data, and do not reflect the current coastal flood risk
- Decisions made today can help provide a safer, stronger future for communities, families, and business owners

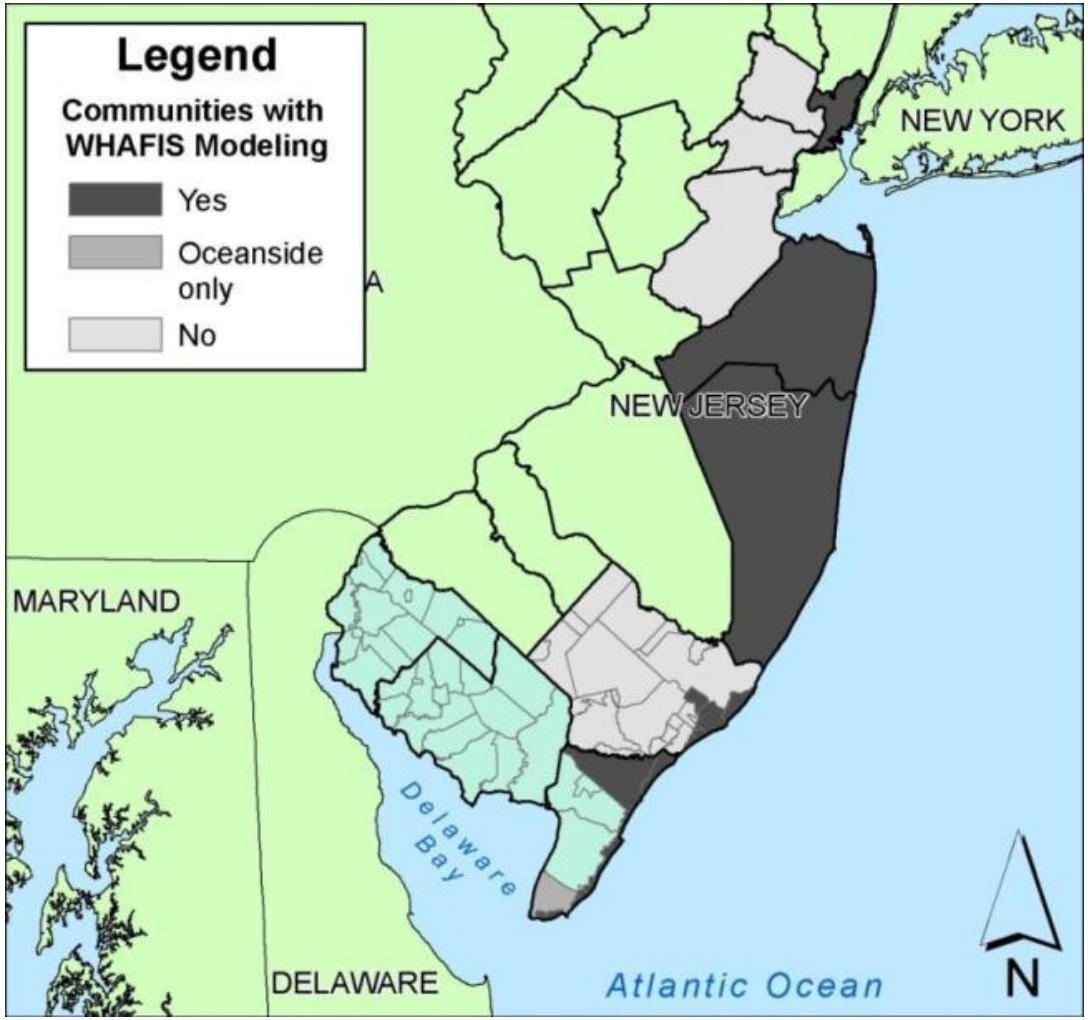
Providing reliable and timely flood hazard data is one way FEMA is helping decision makers ensure that New Jersey coastal communities recover smarter and stronger in the wake of this devastating event.

State of Effective Flood Studies

- **Effective Studies Age**
  - Community-based
  - Typically 1980s
- **Stillwater levels**
  - On average, 25+ years old
  - DE Bay dates back to 1964-1968



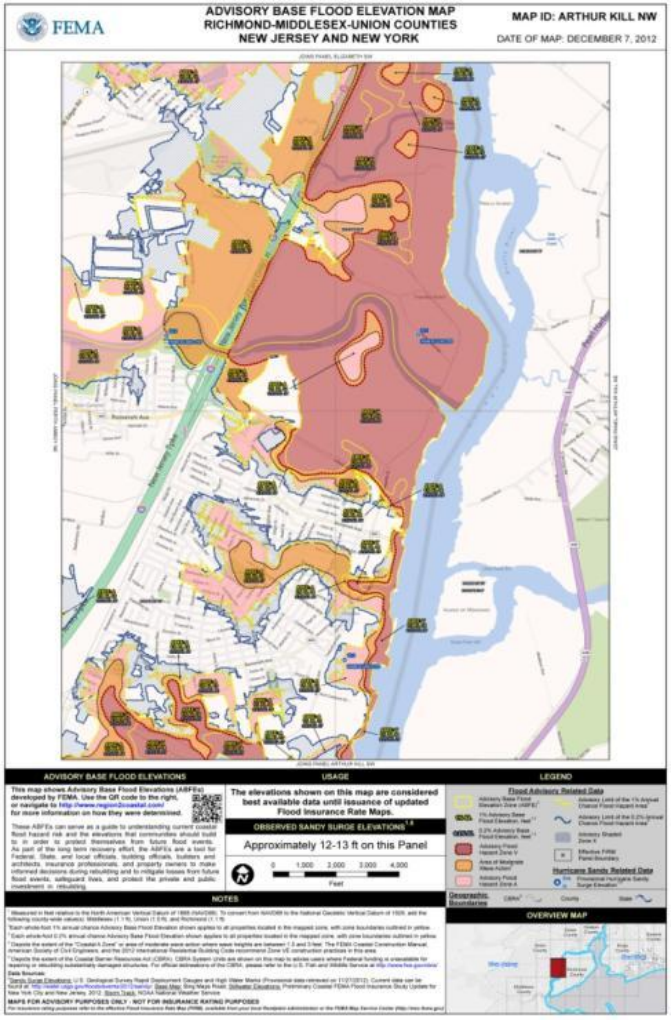
State of Effective Flood Studies (continued)



- Note all New Jersey lacks wave setup

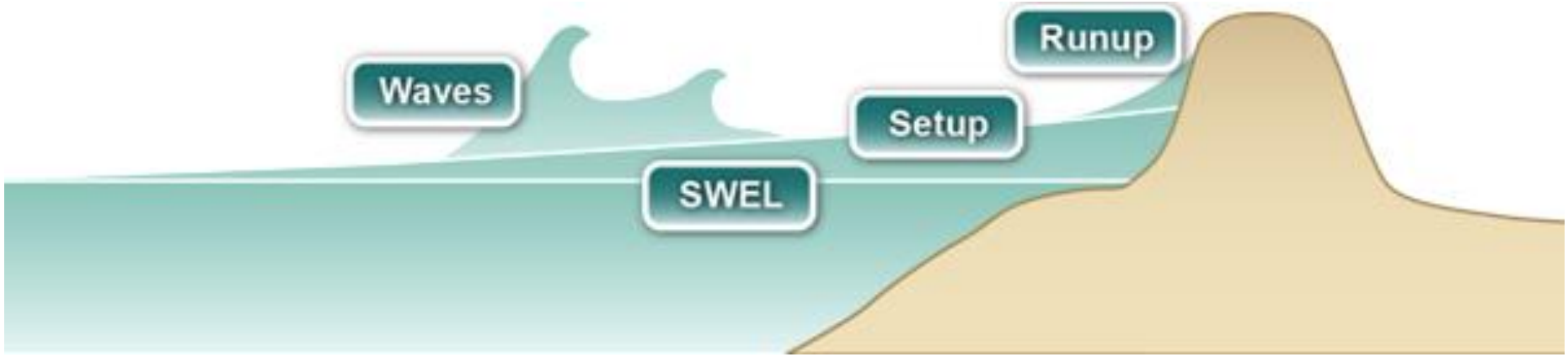
What are Advisory Base Flood Elevations (ABFEs)?

- ABFEs are updated estimates of the 1% annual chance flood elevations
- They are based on sound engineering and science
- ABFEs are derived from updated coastal flood analysis and data that is part of the ongoing New Jersey Coastal Flood Hazard Study which began in 2009
- ABFEs reflect <u>higher elevations</u> than BFEs shown on the current effective FIRMs
- Coastal flood zones updated using ABFEs may extend further inland than Special Flood Hazard Areas (SFHAs) shown on the current effective FIRMs



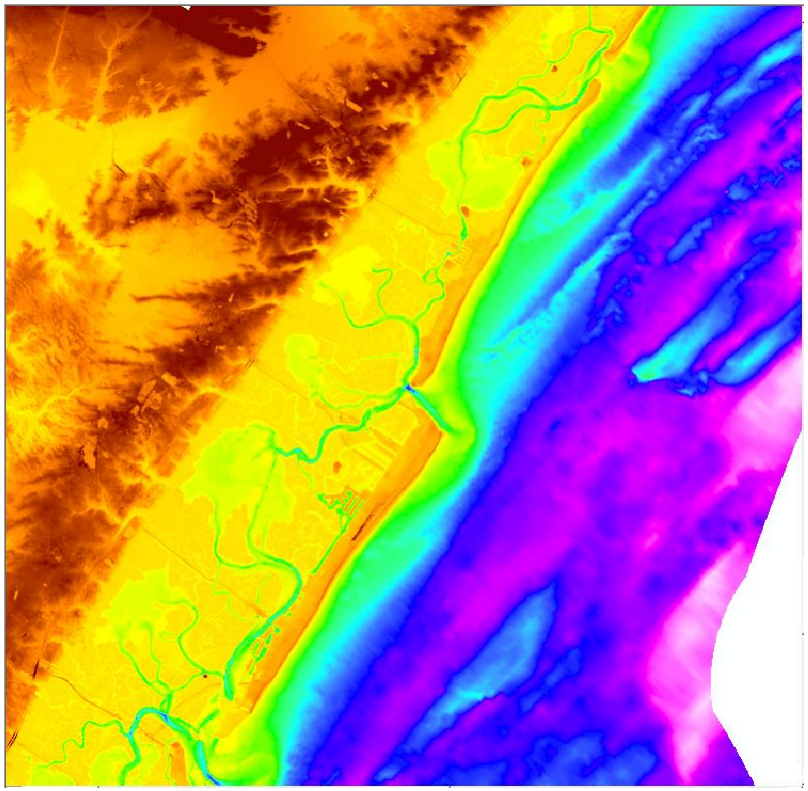
How were the ABFEs developed?

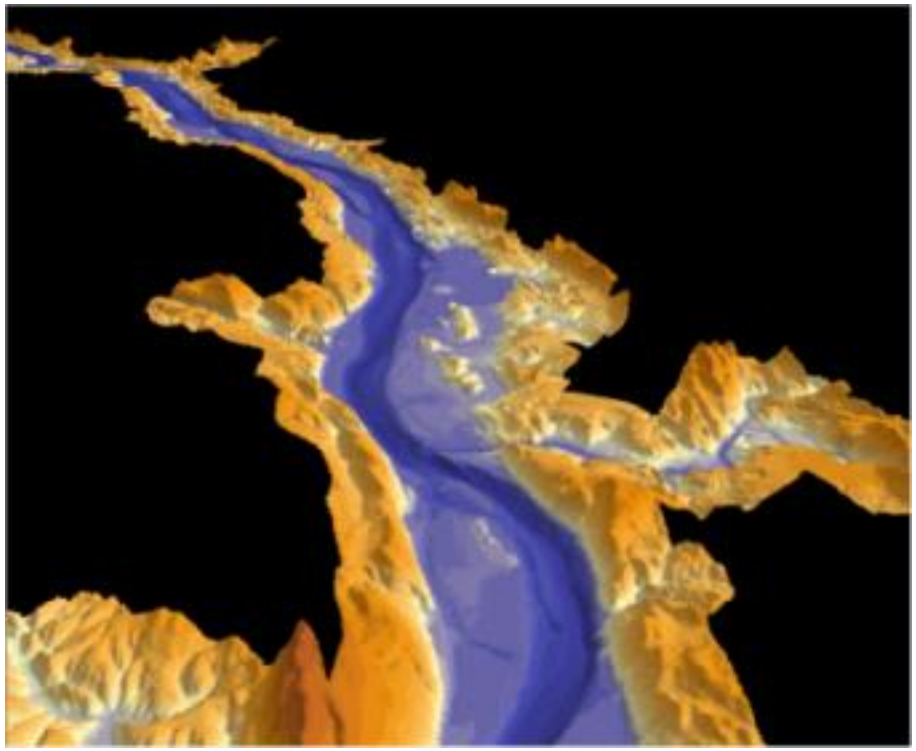
- **Components of the ABFEs**
  - Storm surge stillwater elevations (SWEL)
    - ADCIRC Model
  - Amount of wave setup
    - Nearshore wave action - SWAN
  - Wave height above the storm surge (stillwater) elevation
    - Depth-limited wave theory application
  - Wave runup above the storm surge elevation (where applicable)
    - Determined through analyzing nearshore slopes



How were the ABFEs developed? (continued)

- Depth-limited wave theory applied to SWEL to estimate wave heights then elevations delineated overland using Bathymetric and Topographic data sets (DEMs)





Example Seamless DEM

How were the ABFEs developed? (continued)

- **What's not included??**
  - Erosion
  - Assessment of wave overtopping and sheet flow
  - High velocity areas -> Scour
  - Wave attenuation by obstructions (dissipation of wave energy)
- **Full overland wave analysis in WHAFIS analyzes these factors in depth**
  - Includes field reconnaissance performed for
    - Validation of collected data sets
    - Full characterization of of obstructions and protection
- **Should be noted accuracy of LiDAR data used for majority of areas in New Jersey is accurate to15-18.5cm vertically**

ABFE Resources

- Visit www.Region2Coastal.com for many resources, including:
  - Hurricane Sandy Advisory Base Flood Elevation Fact Sheet
  - ABFE Frequently Asked Questions
  - Changes in the Flood Insurance Program: Preliminary Considerations for Rebuilding
  - FEMA Building Science Resources to Assist with Reconstruction after Hurricane Sandy

Community Implications: Floodplain Management

- If a community decides to adopt and enforce ABFEs it will need to amend its Flood Damage Prevention Ordinance
- Communities can adopt a freeboard requirement on top of the ABFEs
- Preliminary FIRMs will replace ABFEs as best available data and should be adopted by communities in place of ABFEs
- When FEMA provides Final FIRMs, communities will be required to adopt the revised Flood Insurance Study (FIS) and FIRMs.

NATIONAL FLOOD INSURANCE PROGRAM

ICC INTERNATIONAL CODE COUNCIL

ABFE Model Ordinance Language

http://www.nj.gov/dep/floodcontrol/modelord.htm

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New Jersey Department of Environmental Protection
Bureau of Dam Safety & Flood Control
Mail Code 501-01A
501 East State Street
PO Box 420
Trenton, NJ 08625-0420

Flood Damage Prevention Ordinance (FDPO)

For an introduction to the Flood Damage Prevention Ordinance (FDPO) process in New Jersey click here (pdf).

Model Type	1% Annual ss Chance Flooding	BFEs	Floodways	V zones
A	no	no	no	no
B	yes	no	no	no
C	yes	yes	no	no
D	yes	yes	yes	no
E	yes	yes	no	yes
D & E	yes	yes	yes	yes

Sample Flood Damage Prevention Ordinances for New Jersey

Description	File Name	Format	Updated
Model A Ordinance	modela.doc	MS Word	2/1/2012
Model B Ordinance	modelb.doc	MS Word	2/1/2012
Model C Ordinance	modelc.doc	MS Word	2/1/2012
Model D Ordinance	modeld.doc	MS Word	2/1/2012
Model E Ordinance	modele.doc	MS Word	2/1/2012
Model D&E Ordinance	modeldde.doc	MS Word	2/1/2012
Model ABFE D&E Ordinance	modelde-abfe.doc	MS Word	2/5/2013

Community Implications: Insurance

- Adopting standards based on ABFEs <u>will not change</u> the current zones or elevations used for determining insurance premiums
- When effective FIRMs are updated, flood zones and associated premiums could change to reflect new flood risk
- A policy holder whose structure was built in compliance and substantially damaged can receive up to $30,000 from ICC for a combination of the following activities:
  - Elevate
  - Flood-proof (non-residential structures)
  - Relocate, or
  - Demolish
- The maximum amount collectable for both Increased Cost of Compliance (ICC) and physical damage coverage from a flood for a single family dwelling is $250,000

Community Implications: Grants

- FEMA recovery and mitigation activities and programs must use the best flood hazard data available prior to obligation of Federal funds
- FEMA will use ABFEs to determine the flood zone boundaries and minimum flood elevations required for project design and performance standards
- If local codes and standards are more stringent than the ABFE, projects must be designed to the higher standard

Reasons to use ABFEs

- Advisory Base Flood Elevations (ABFEs) offer the best available data for post-disaster recovery and rebuilding
- ABFEs were created using more recent and improved data than the communities' existing FIRMs, which do not adequately reflect the current coastal flood hazard risk
- Elevating to or above the ABFE is the best way to reduce flood risk and has a good return on investment for rebuilding homes damaged by Sandy
- By building to BFEs, property owners avoid the potential regret and devastating financial consequences of future floods
- By elevating higher, property owners will have a flood insurance premium that is significantly lower then without the extra elevation
- The Flood Insurance Reform Act, otherwise known as Biggert-Waters 2012, may have an impact on flood insurance premiums starting in January 2013

Building Community Resilience

FEMA Provides Best Available Data (ABFEs)

Community Officials Adopt Higher Standards

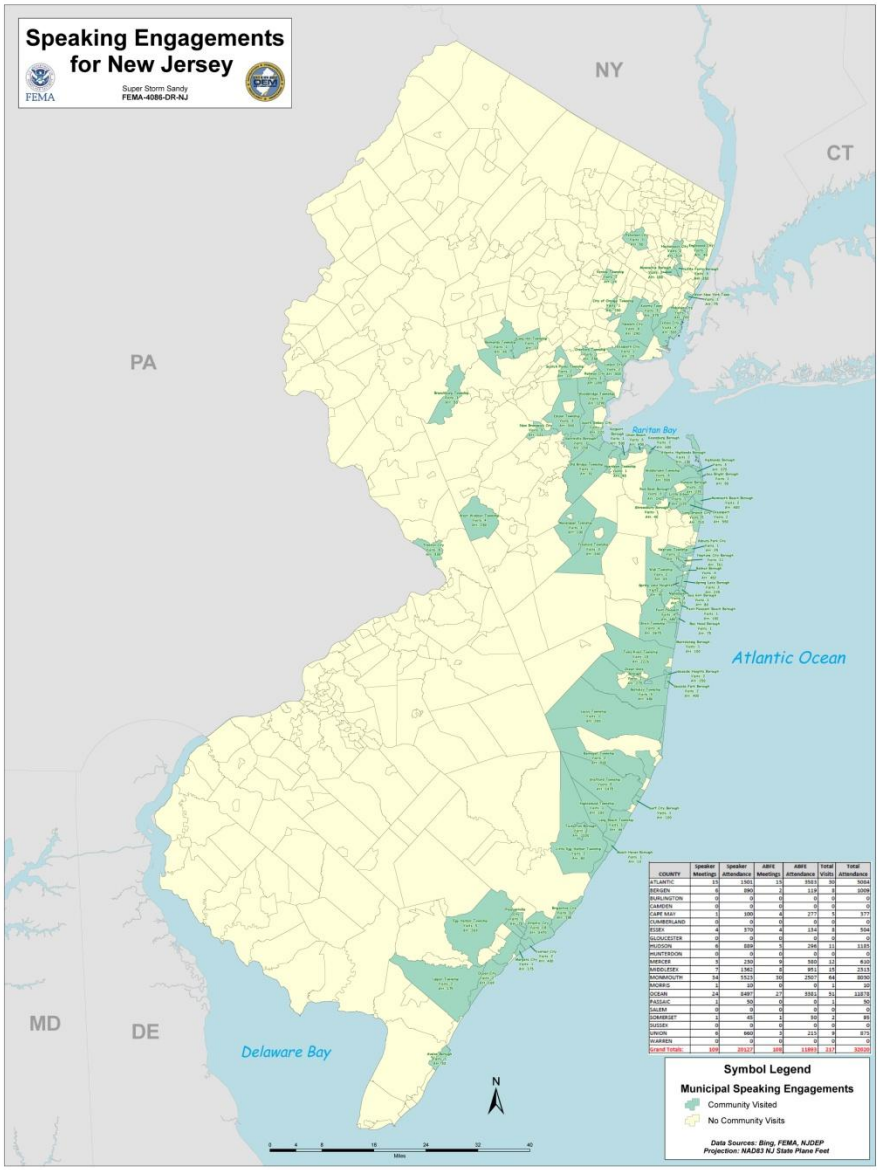
Property Owners Build to Higher Standards

More Resilient Communities Created

Together, we all can create stronger and safer communities that are better equipped to handle the next major storm

ABFE Public Outreach

COUNTY	Speaker Meetings	Speaker Attendance	ABFE Meetings	ABFE Attendance	Total Visits	Total Attendance
ATLANTIC	15	1501	15	3583	30	5084
BERGEN	6	890	2	119	8	1009
BURLINGTON	0	0	0	0	0	0
CAMDEN	0	0	0	0	0	0
CAPE MAY	1	100	4	277	5	377
CUMBERLAND	0	0	0	0	0	0
ESSEX	4	370	4	134	8	504
GLOUCESTER	0	0	0	0	0	0
HUDSON	6	889	5	296	11	1185
HUNTERDON	0	0	0	0	0	0
MERCER	3	230	9	380	12	610
MIDDLESEX	7	1362	8	951	15	2313
MONMOUTH	34	5523	30	2507	64	8030
MORRIS	1	10	0	0	1	10
OCEAN	24	8497	27	3381	51	11878
PASSAIC	1	50	0	0	1	50
SALEM	0	0	0	0	0	0
SOMERSET	1	45	1	50	2	95
SUSSEX	0	0	0	0	0	0
UNION	6	660	3	215	9	875
WARREN	0	0	0	0	0	0
Grand Totals:	109	20127	108	11893	217	32020



Technical Data Submission

- FEMA is encouraging communities and property owners to submit technical information that will better characterize local conditions.
- Providing this information may result in revisions to ABFEs, Preliminary Maps and Final Maps to more accurately depict flood risk.
- Data submitted needs to be comprehensive and detailed enough to be consistent with the process for developing preliminary FIRMs.
- Coastal Analysis and mapping information must follow the advisory methodology or FEMA Guidelines & Specifications for Flood Hazard Mapping Partners.
- All Technical information should be submitted to:

Robert J. Schaefer, P.E.

Hazard Mitigation, DR-4086-NJ

307-309 Middletown Lincroft Road, Lincroft, NJ 07738

Phone: (347) 882-7989

Email: Robert.Schaefer@fema.dhs.gov

Next Steps

- **Complete Substantial Damage Determinations in your community**
- **Adopt ABFE maps - NJDEP recommends amending local ordinances in accordance with their Generic ABFE Model Ordinance language**
- **Preliminary mapping roll out touch points of the NJ Coastal Study:**
  - **Release Work Maps** (Approximately 1 month before the preliminary release)
    - Flood risk review meeting – Presentation of draft Risk Map products. Draft regulatory products may also be presented at this time.
  - **Release Preliminary Maps** (Summer and early Fall)
    - Resilience meeting - The purpose of the meeting is to continue to build local capacity for implementing priority mitigation activities. The resilience meeting may contain a second flood risk review section to address questions raised in regards to the Preliminary FIRMs.
    - CCO (Consultation Coordination Officer) meeting - The purpose of the CCO Meeting is to present the preliminary FIRM panels and data to identified stakeholders, including community officials, before presenting the information to the public.
    - Open house meeting - The Open House is held by the project team and community officials to present the preliminary FIRM and FIS report to the public.

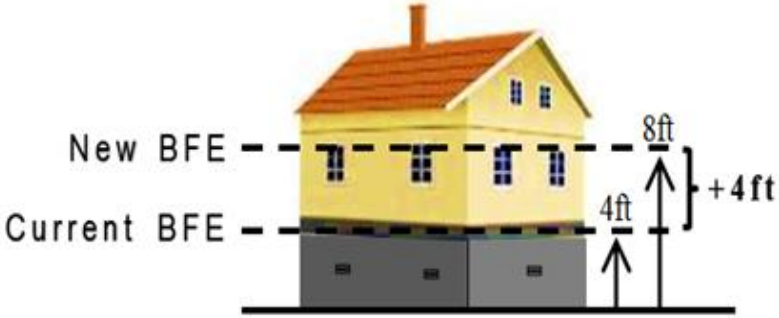
How has flood insurance changed?

- Biggert-Waters Flood Insurance Reform Act of 2012 took effect on 7/6/2012, requiring FEMA to take steps to eliminate a variety of existing flood insurance subsidies.
- Policy rates will be revised over time to reflect full flood risks.
- Triggers for increases are the following
  - Change of ownership;
  - Lapse in insurance coverage;
  - Change in flood risk; and
  - Substantial damage or improvement.

NATIONAL FLOOD INSURANCE PROGRAM

How can property owners save money on flood insurance?

- Flood insurance premiums increase as risk increases, so the best way to save money on flood insurance is to reduce your risk.
- Home and business owners whose properties have been flooded are able to reduce current flood insurance costs by repairing or rebuilding to standards based on currently effective flood risk information.
  - However, building to higher standards can lock in future savings and protect property owners from the known increase in flood risk that is not included in the currently effective information.



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