Webinar 1

YOUR ROLE IN NJ/NY COASTAL FLOOD MAP REVISIONS

Daniel A. Barone, MS CFM
Richard Stockton College of NJ
Coastal Research Center

January 28, 2013
10:00am – 12:30pm

NJDEP Cooperating Technical Partnership
Coastal Outreach Support

OUTLINE

Session A: 10:00am to 11:15am

Purpose
Objectives
Hurricane Sandy
Partnerships
Overview
Coastal Mapping
Scientific Research
Storm Surge Modeling
Affected Communities

Break: 11:15am to 11:30am

Session B: 11:30am to 12:30pm

Risk MAP Products
Coastal Products (non-regulatory)
Public's Role in the Flood Map Revision Process
Map Revision Timelines
Open Group Discussion

PURPOSE

Provide information to:

Municipal Officials & Staff
Stakeholders
Public

Regarding:

Post- Hurricane Sandy Efforts
Advisory Base Flood Elevations
NJ/NY Coastal Flood Insurance Study
Flood Insurance Rate Maps (FIRM)
Risk MAP Program

OBJECTIVES

Introduce:

- FEMA post Hurricane Sandy efforts
- Advisory Base Flood Elevations
- NJ/NY Coastal Flood Risk Study
- Risk MAP Program
- Coastal Mapping
  - Research and Modeling
  - Datasets and Products
- Public's Role in the Flood Map Revision Process

Promote:

- Community Engagement

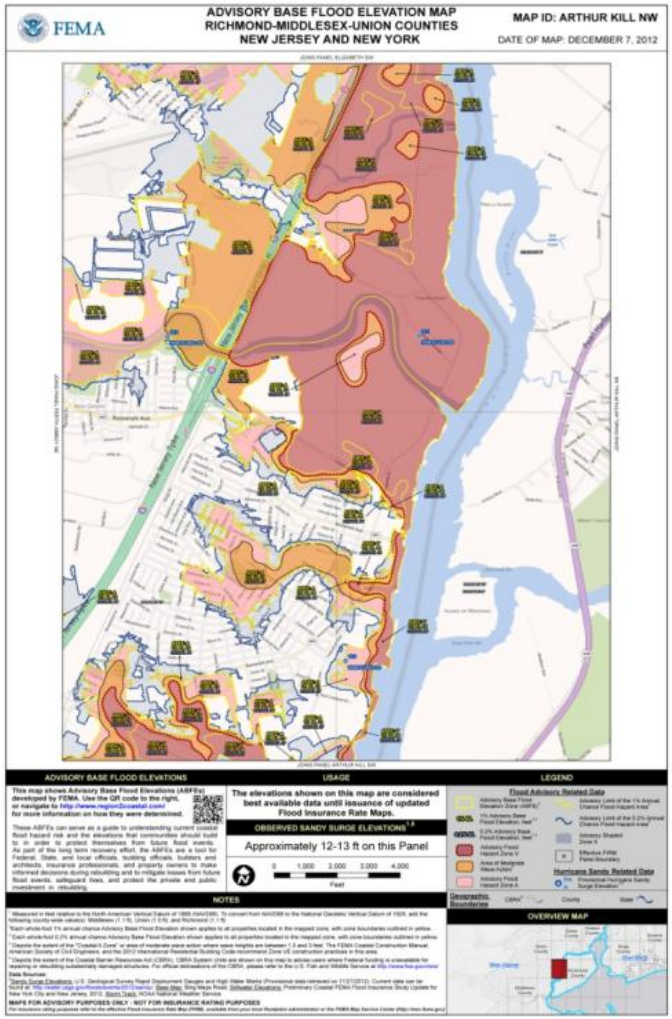
Why is Updated Flood Hazard Information Needed Post Hurricane Sandy?

- 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 do not reflect the current coastal flood risk
- Decisions made today can help provide a safer, stronger future for communities, families, and business owners

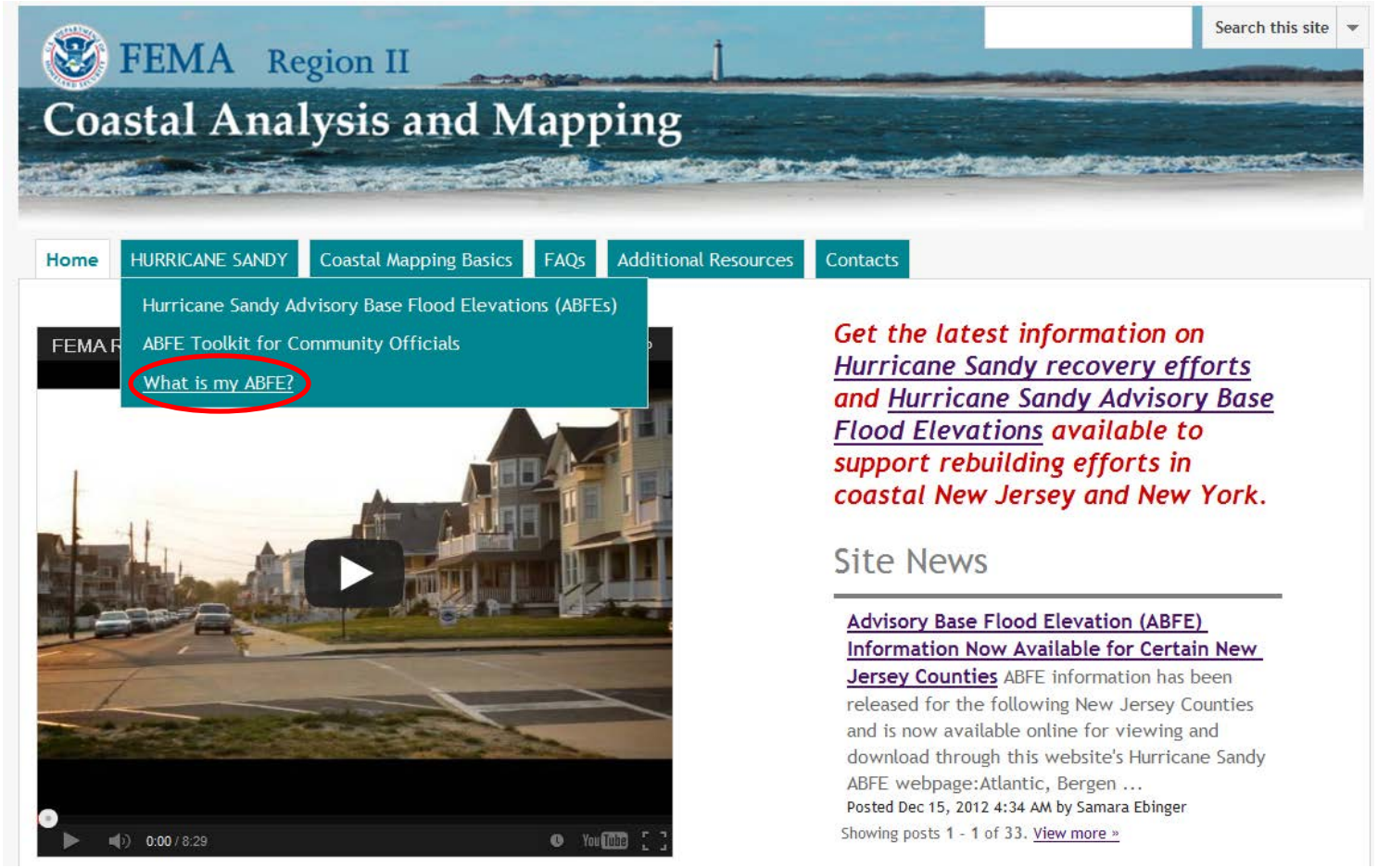
Providing reliable and timely flood hazard data is one way FEMA is helping decision makers ensure that New Jersey coastal communities recover smarter and stronger in the wake of this devastating event.

What are Advisory Base Flood Elevations (ABFEs)?

- ABFEs are updated estimates of the 1% annual chance flood elevations
- They are derived from new coastal flood analyses and data
- They reflect higher elevations than BFEs shown on current effective Flood Insurance Rate Maps
- Updated coastal flood zones extend further inland than Special Flood Hazard Areas shown on current effective FIRMs



www.Region2Coastal.com



Community Implications: Floodplain Management

- A community participating in the NFIP is not required to use the advisory maps and ABFEs
- If a community decides to enforce ABFEs it will need to amend its Flood Damage Prevention Ordinance and building codes
- Communities can adopt a freeboard requirement on top of its current BFEs as an alternative to adopting ABFEs, but use caution if they are lower than ABFEs
- When FEMA provides final FIRMs that replace ABFEs, communities will be required to adopt the revised Flood Insurance Study (FIS) and FIRMs

NATIONAL FLOOD INSURANCE PROGRAM

ICC INTERNATIONAL CODE COUNCIL

Community Implications: Insurance

- Adopting standards based on ABFEs will not change 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

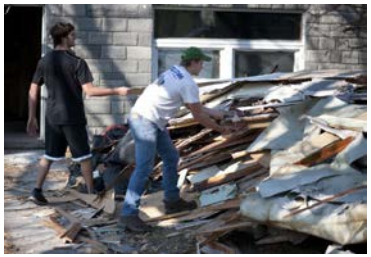
Building Community Resilience

FEMA Provides Best Available Data (ABFEs)

Community Officials Adopt Higher Standards

Property Owners Build to Higher Standards

More Resilient Communities Created



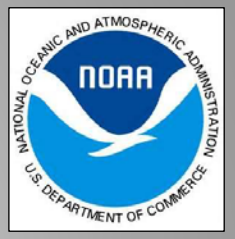
Together, we all can create stronger and safer communities that are better equipped to handle the next major storm

Mitigation Resources

- **Visit www.Region2Coastal.com for many resources, including:**
  - Increased Cost of Compliance: How You Can Benefit
  - Increased Cost of Compliance: Creating a Safer Future
  - Changes in the Flood Insurance Program: Preliminary Considerations for Rebuilding
  - FEMA Building Science Resources to Assist with Reconstruction after Hurricane Sandy
  - Hurricane Sandy Advisory Base Flood Elevations in New Jersey and New York
  - Advisory Base Flood Elevations (ABFE) Frequently Asked Questions
- **Flood Insurance**
  - Call the National Flood Insurance Program Help Center at 1-800-427-4661 or contact us through the online form on the Region2Coastal site
- **Disaster Assistance**
  - Apply online at http://www.disasterassistance.gov/ or through a mobile device at m.fema.gov
  - Call 1-800-621-FEMA or 1-800-462-7585 (TTY) for hearing and speech impaired
  - Visit a Disaster Recovery Center in your area
- **Small Business Administration**
  - Visit http://www.sba.gov/category/navigation-structure/loans-grants/small-business-loans/disaster-loans for information on disaster loans.

PARTNERSHIPS

FEMA



Leckner Consulting, LLC

STEVENS
INSTITUTE of TECHNOLOGY

Urban Coast Institute

OVERVIEW

Why make changes to Flood Insurance Rate Maps?

Most of the current maps and information are 25 to 30 years old

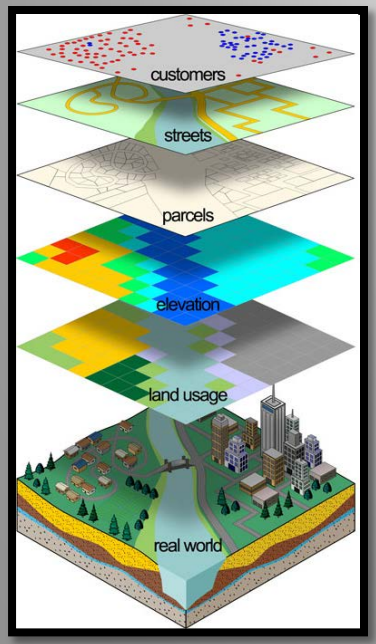
In 2003, Congress passed a law that provided FEMA with one billion dollars to be used over a five-year period to modernize and update the flood maps for 92% of the nation's population

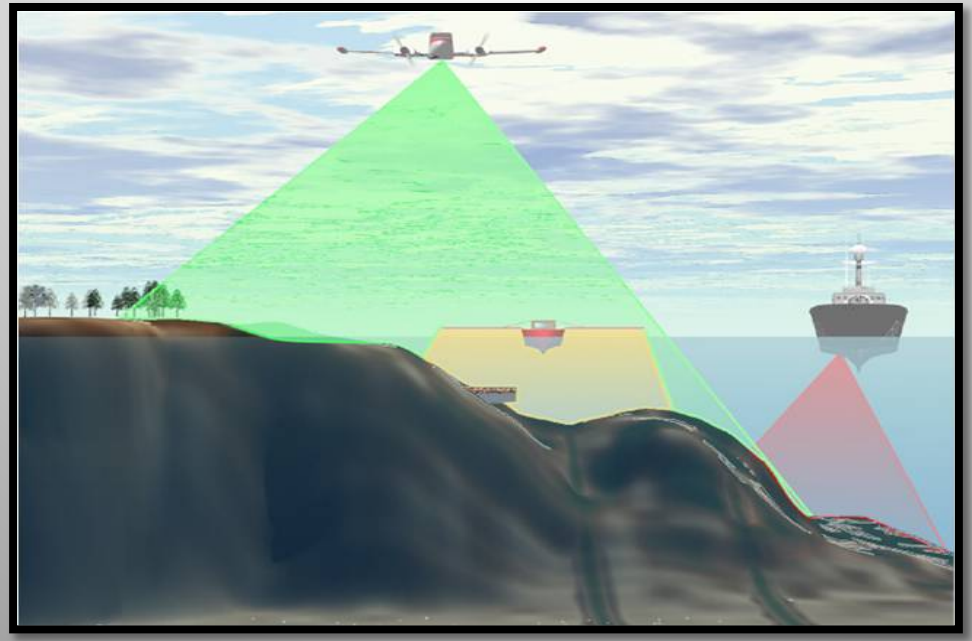
Called **Map Modernization**

OVERVIEW

How are the maps updated and modernized?

Newer refined analysis methods and digital applications are used to more clearly define flood risk and to place the information on highly accurate GIS, GPS, or LiDAR based topography





BENEFITS

Increases the **quality**, **reliability**, and **availability** of flood hazard data

Community officials and **planner**s will be able to see and **understand how flood risks affect the community** and can **improve community planning**

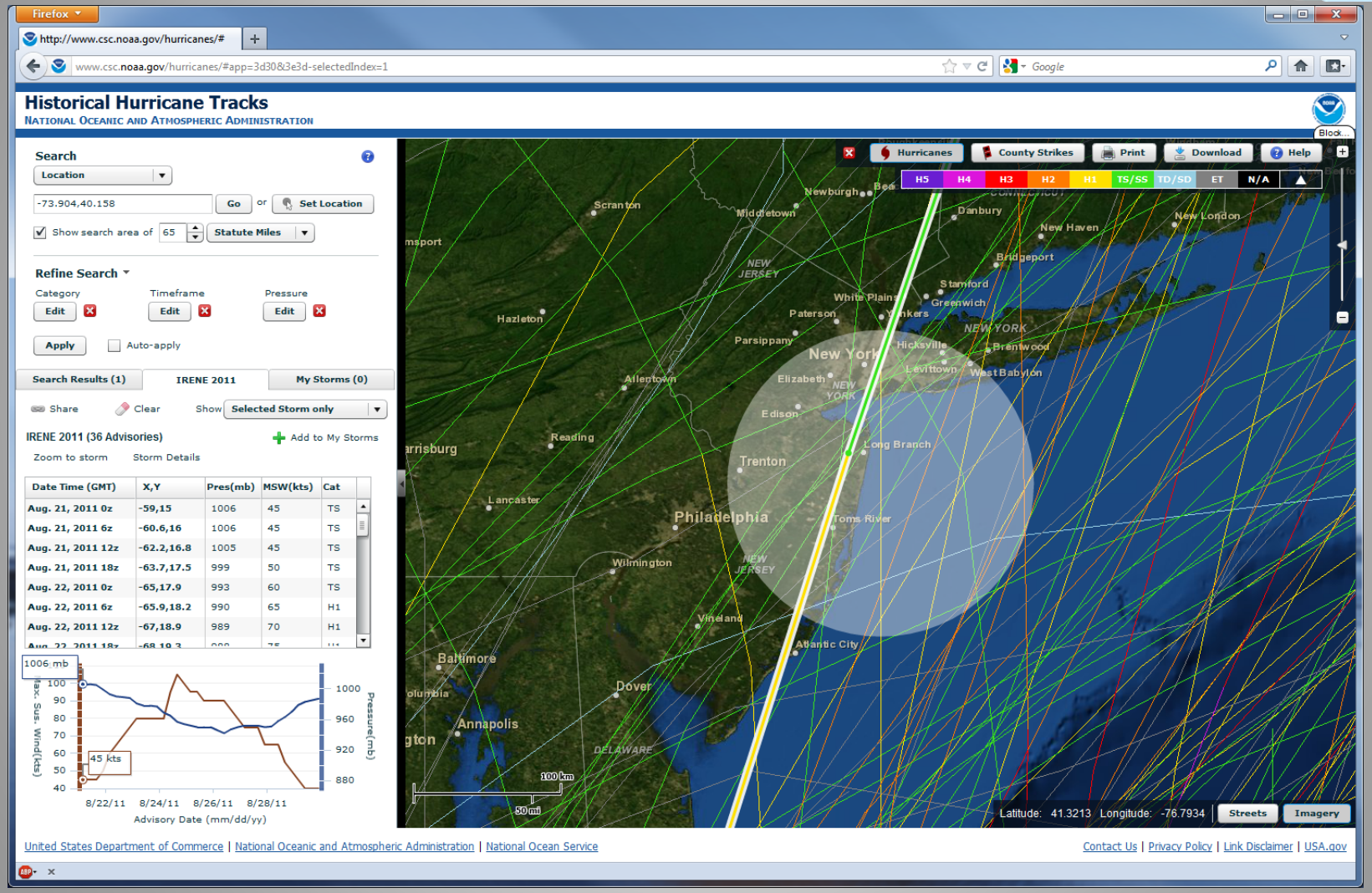
Builders and **developers** will be able to have more detailed information on where to build and **how construction can affect** and **be affected by local flood hazards**

BENEFITS

Insurance agents and **lenders** will have **easy on-line access** to the maps and map updates in order to **better serve their customers**

Private property owners will have the same access to maps to help them **make better decisions** about **protecting their property interests**

STORM HISTORY



Changes based on science

http://www.csc.noaa.gov/hurricanes/#

RISK MAP

(MAPPING, ASSESSMENT, PLANNING)

Through collaboration with State, Local, and Tribal entities, Risk MAP will deliver quality data that increases public awareness and leads to action that reduces risk to life and property

Watershed Approach

Science-based risk data to support decision-making

Risk MAP is a Portfolio Of Programs:

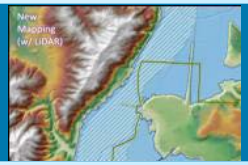
- **NFIP Mapping**
- **Dam Safety**
- **Mitigation Planning**
- **HAZUS**

RISK MAP GOALS

RiskMAP

Increasing Resilience Together

Goals

Deliver High-Quality Risk Data	Increase Awareness of Flood Risk	Promote Community Mitigation Action
		

Products

Deliver High-Quality Risk Data	Increase Awareness of Flood Risk	Promote Community Mitigation Action
▪ Understandable Flood Maps ▪ Credible data—reliable, accurate, watershed-based ▪ Illustrations of possible Flood Depths ▪ Usable Flood Risk Assessments	▪ Tools to understand how flood risk has changed ▪ Continuous engagement with communities ▪ Enable communities to communicate flood risk to constituents	▪ Support that allows communities to identify risks and promote: ▪ Community resiliency ▪ Sustainability ▪ Reduced need for federal disaster assistance

MITIGATION PLANNING

Processes


Enhance delivery of Risk MAP Products


Collaborate across all levels of government

Reduce Risk to Lives and Property

FLOOD RISK FOCUS

Benefits from Risk MAP elements

Increase community risk awareness

Allow FEMA Regions to work with communities

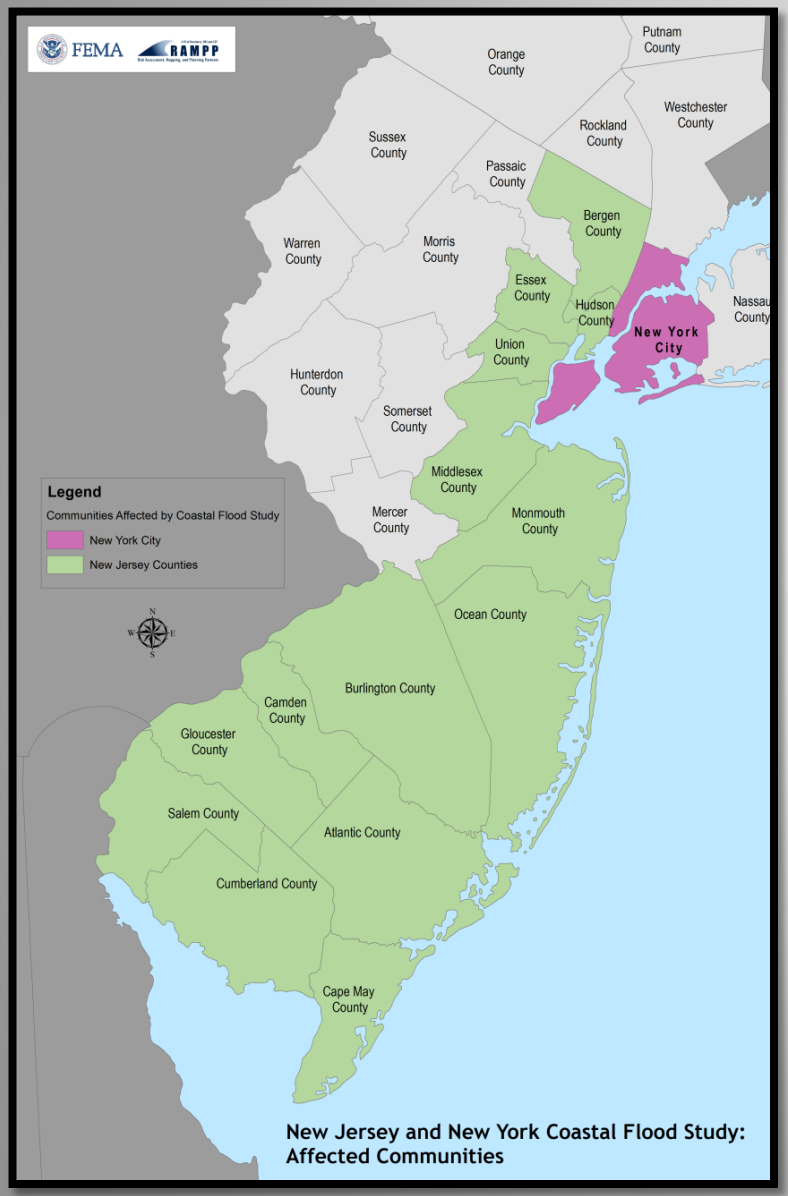
Increase risk mitigation actions

GROUP DISCUSSION

- **What is your community risk awareness?**

NJ/NY COASTAL FLOOD STUDY

NJ/NY COASTAL FLOOD STUDY



- **Produce updated FIRMs for 14 coastal counties in NJ & NY**
- **Includes Coastal Storm Surge/Coastal Flood Hazard Components**

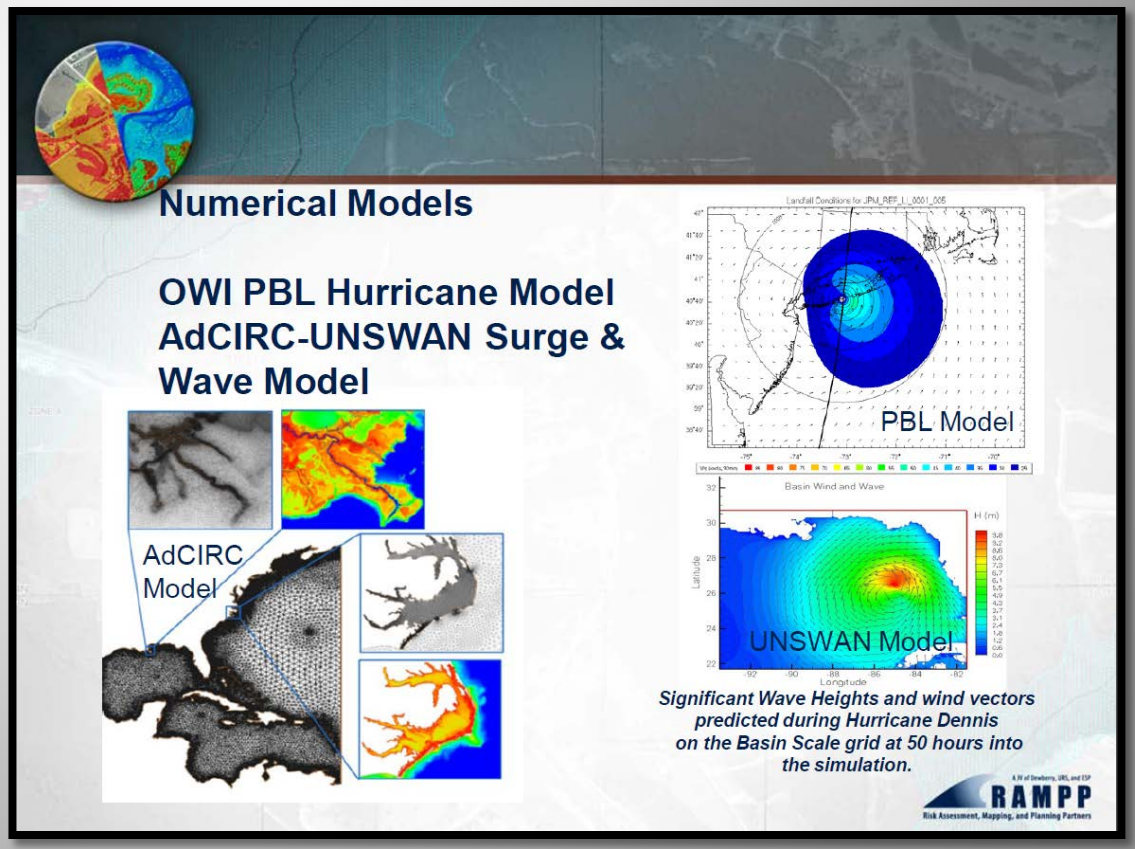
NJ/NY COASTAL FLOOD STUDY

Study Tasks

- Restudy of all coastal hazard zones
- Acquire data, characterize local storm climate
- Develop input for numerical modeling
- Analyze storm surge heights
- Conduct Wave Height Analysis for Flood Insurance Studies overland wave conditions and for Base Flood Elevations

COASTAL MAPPING, RESEARCH, & MODELING

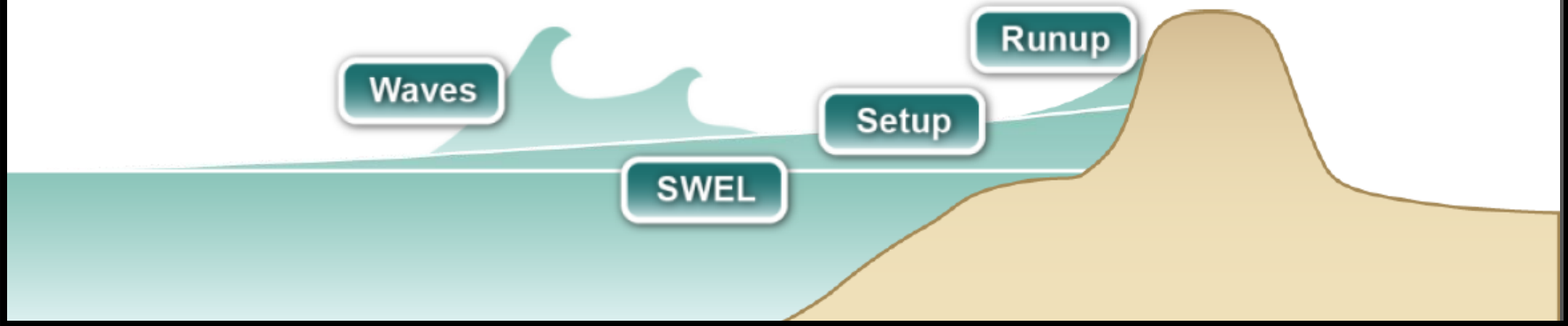
- Assemble bathy/topo and other data
- Create ADCIRC/SWAN Grid
- Analyze/describe recorded storms
- Develop an efficient JMP-OS scheme
- Define a set of representative storms
- Verify numerical models
- Model the storm set
- Determine the Still Water Elevations over area
- Add runup
- Add wave crest heights
- Make the flood maps



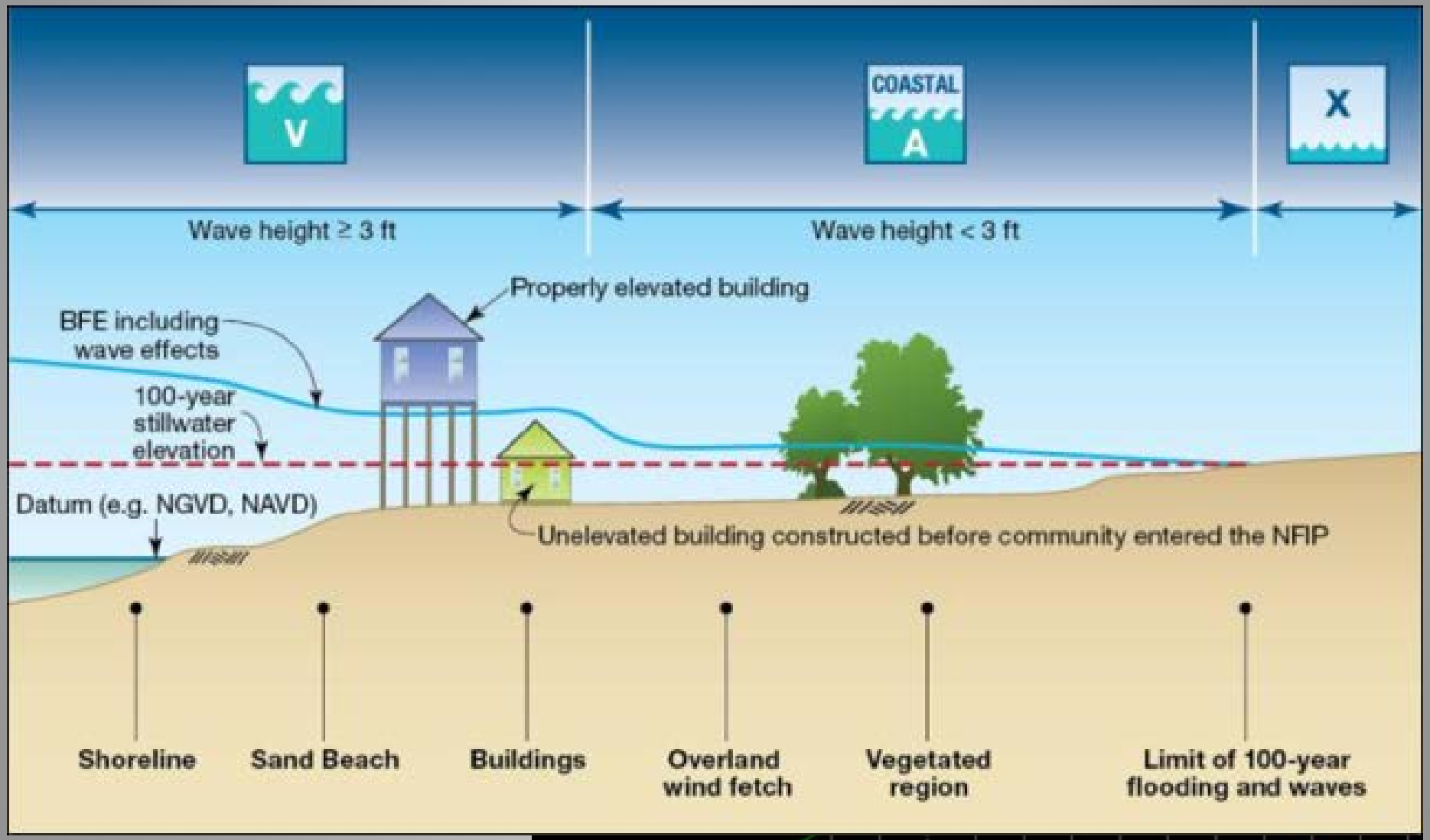
Basic Elements of a Coastal Floodplain Study

Base Flood Elevation on FIRM includes 4 components:

1. Storm surge stillwater elevation (SWEL) – (USACE)
2. Amount of wave setup – Determined from ADCIRC Model (USACE)
3. Wave height above storm surge (stillwater) elevation
4. Wave runup above storm surge elevation (where present)



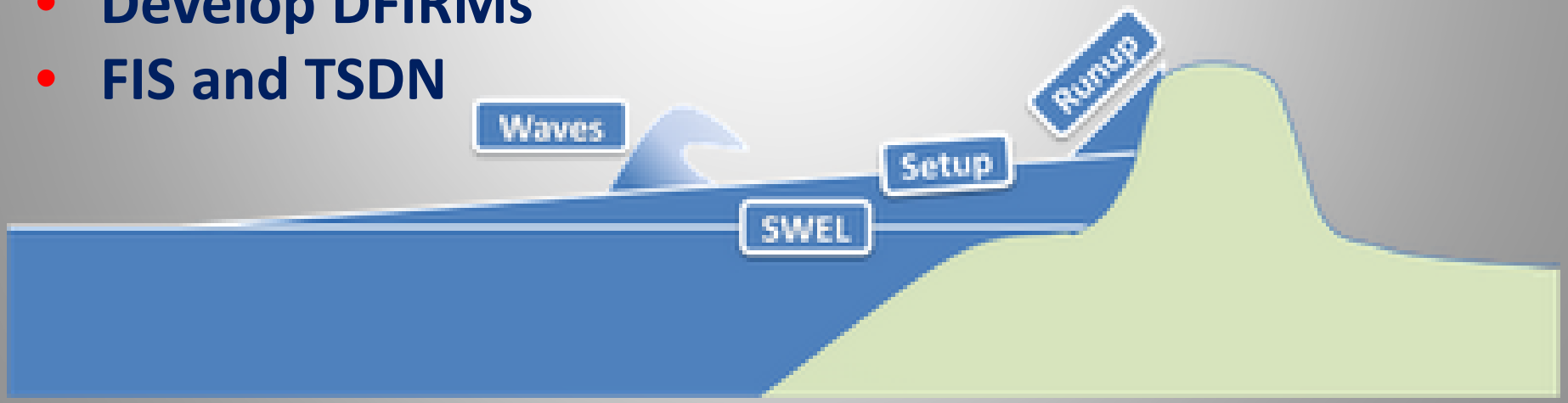
COASTAL MAPPING, RESEARCH, & MODELING



OVERLAND WAVE MODELING

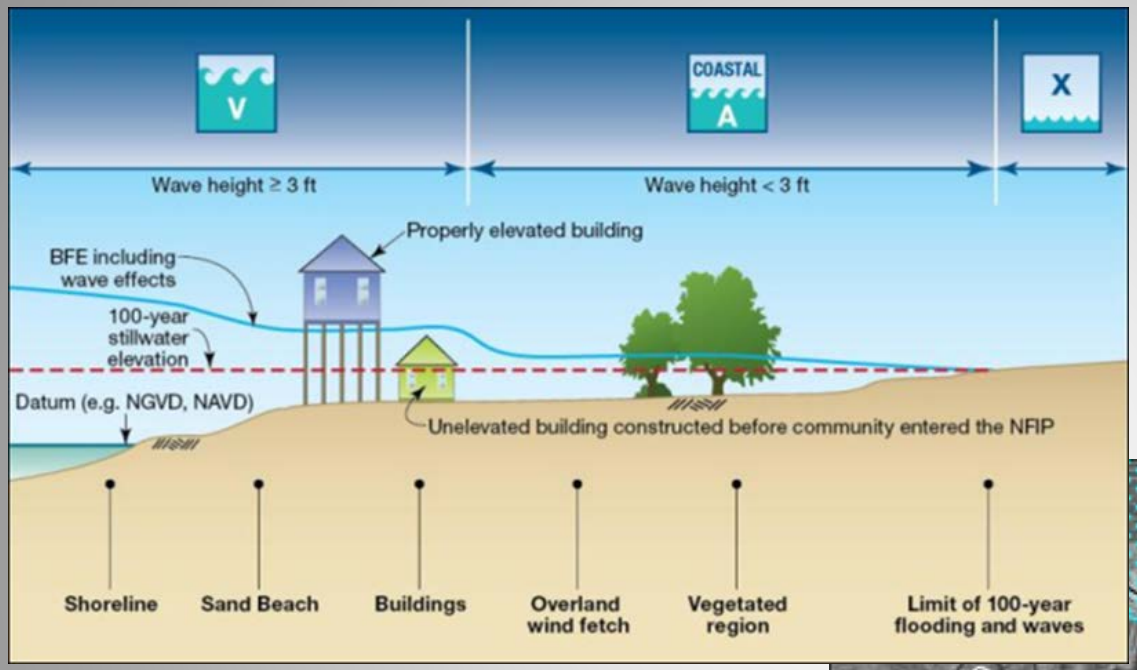
COASTAL MAPPING, RESEARCH, & MODELING

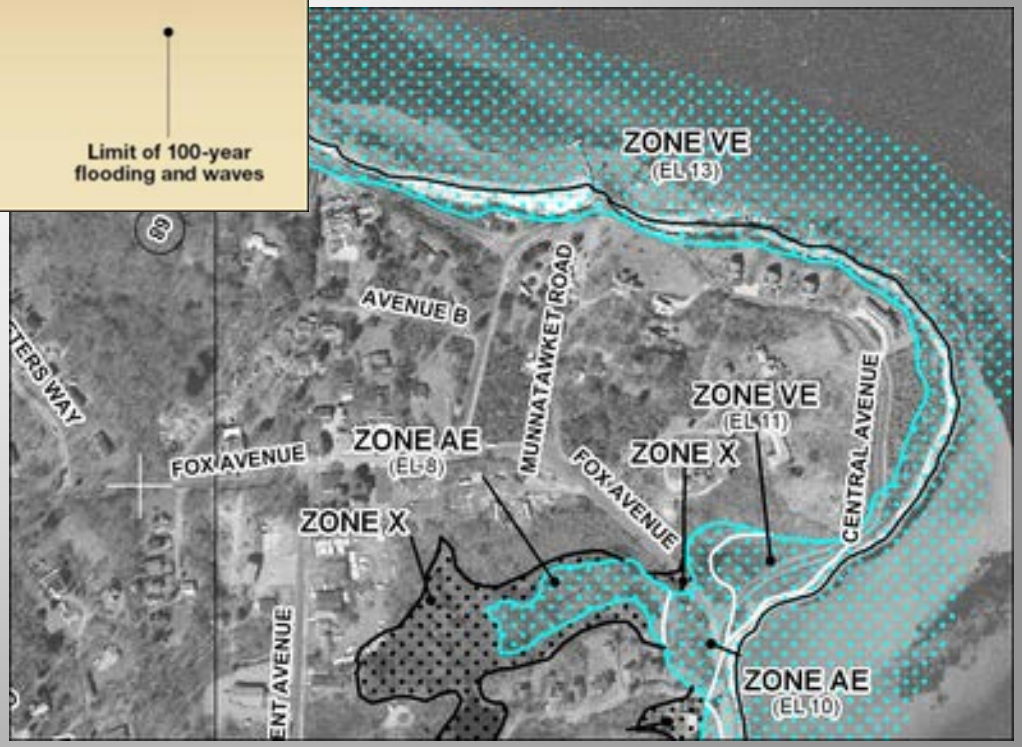
- Creation of stillwater surface
- Calculation of wave setup
- Erosion analysis
- WHAFIS Simulations
- Run-up analysis
- Delineate coastal floodplain
- Develop DFIRMs
- FIS and TSDN



OVERLAND WAVE MODELING

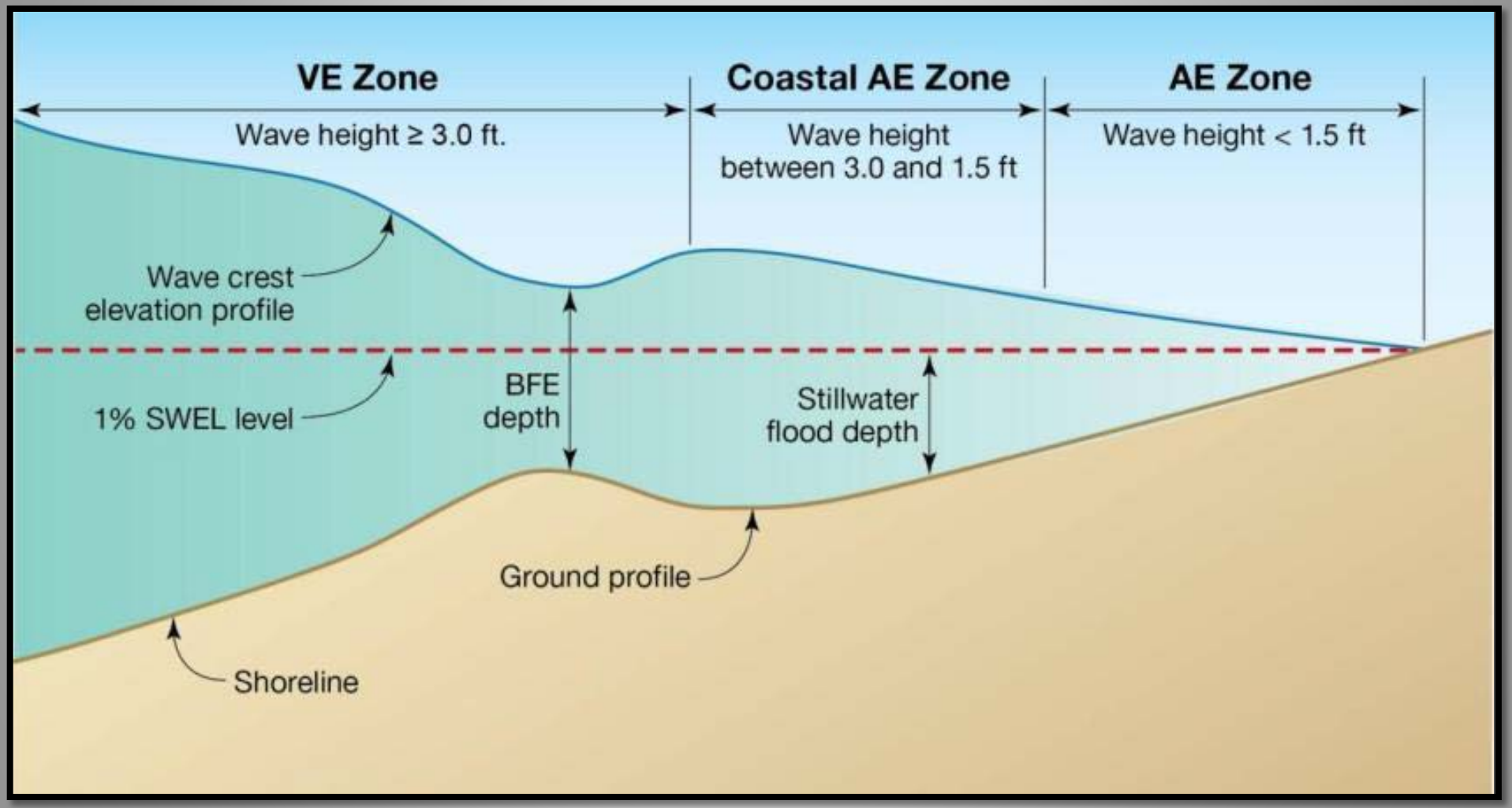
COASTAL MAPPING, RESEARCH, & MODELING





MAPPING COASTAL HAZARD AREAS

COASTAL MAPPING, RESEARCH, & MODELING



LIMIT OF MODERATE WAVE ACTION

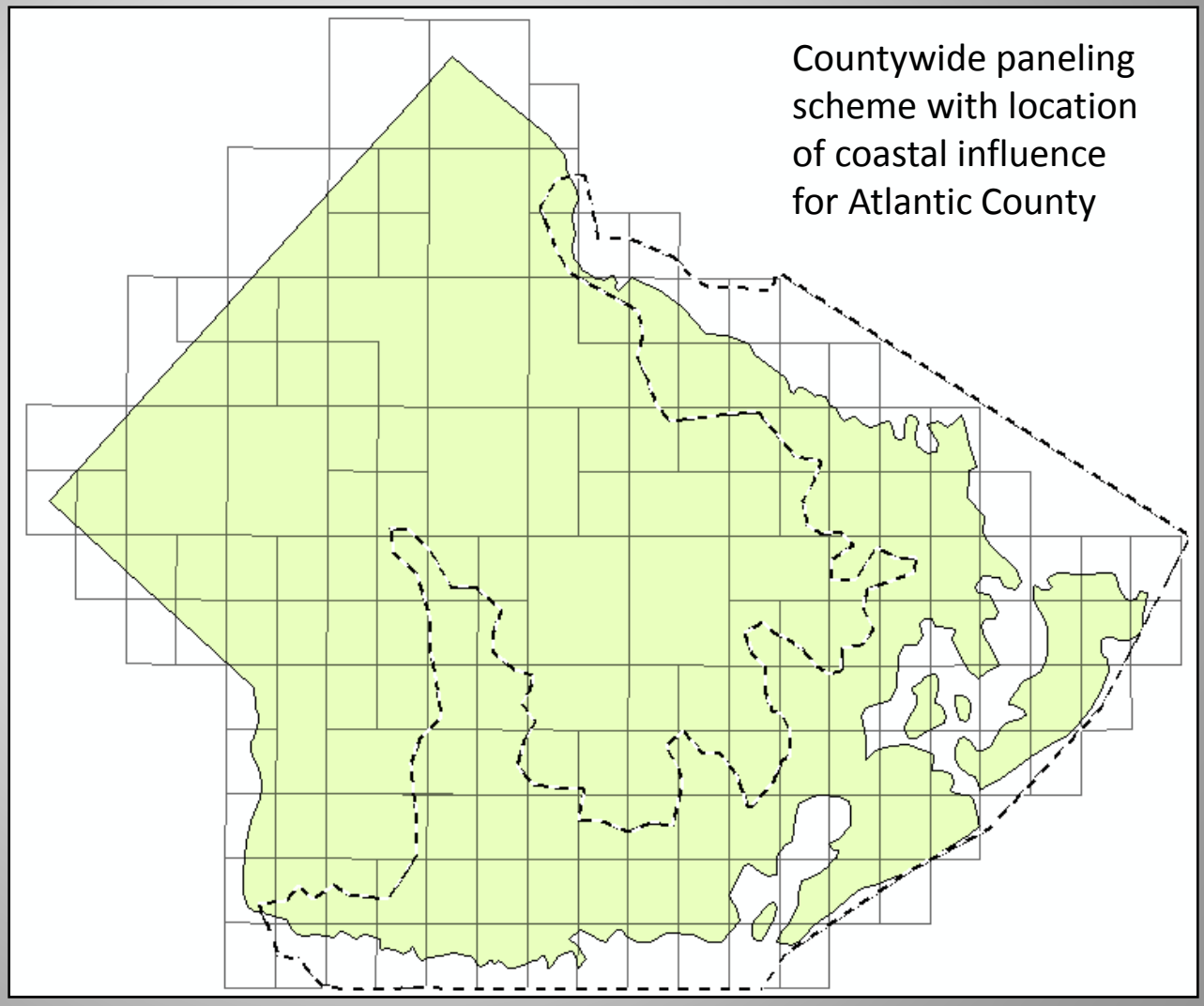
GROUP DISCUSSION

- Is your community located in a coastal area?
- What are the commonly mapped flood hazard zones in your area?
- Do your present maps show LiMWA areas? If so, has your community adopted more stringent building standards in V Zones? What are those standards?

AFFECTED COMMUNITIES

- Brooklyn
- Bronx
- Manhattan
- Staten Island
- Queens
- Hudson
- Cumberland
- Middlesex
- Monmouth
- Salem
- Ocean
- Atlantic
- Cape May
- Bergen
- Essex
- Gloucester/Camden
- Burlington
- Union
- Westchester

AFFECTED COMMUNITIES



AFFECTED COMMUNITIES

- **Incorporation of approximately 59 miles of detailed riverine redelineation, 176 miles of approximate riverine redelineation, and 31 shoreline miles of detailed coastal analysis**
- **Incorporation of NJFHA boundary to the DFIRM maps and Flood Insurance Study (FIS) profiles**
- **The DFIRM and FIS will be produced in the FEMA county-wide format in the North American Vertical Datum of 1988 (NAVD88)**
  - NAVD 88 = NGVD 29 – 1.247 feet (approximate-varies geographically)

ATLANTIC COUNTY

AFFECTED COMMUNITIES

- **Storm Surge: Analysis of tropical and extratropical (northeasters) using ADCIRC model and JPM statistical model**
  - **Topography and bathymetry complete**
  - **ADCIRC mesh is completed**
  - **Statistical analysis of storms nearing completion**
  - **ADCIRC modeling started in October 2010**

- **Overland Wave Hazard Analysis: Analysis of wave hazards along coastline.**
  - **Field reconnaissance complete**
  - **Obstruction polygon attribution is complete**
  - **Overland wave modeling is underway**

AFFECTED COMMUNITIES

- **Mapping partner to deliver preliminary maps to the Atlantic County communities in September 2013**
- **Project Team**
  - **Local communities**
  - **New Jersey Department of Environmental Protection (NJDEP)**
  - **FEMA**
- **Tasks**
  - **Redelineation**
  - **Restudy of all coastal hazard zones**
  - **FIS Report Production**
  - **DFIRM panel and database production**
  - **Preliminary DFIRM Production and Distribution**

AFFECTED COMMUNITIES

	2013											
	January	February	March	April	May	June	July	August	September	October	November	December
Brooklyn												
Bronx												
Manhattan												
Staten Island												
Queens												
Hudson												
Cumberland												
Middlesex												
Monmouth												
Salem												
Ocean												
Atlantic												
Cape May												
Bergen - TBD												
Essex - TBD												
Gloucester/Camden - TBD												
Burlington - TBD												
Union - TBD												

Projected Preliminary

TAKING ACTION

- Establishing community mitigation plans
- Purchase flood insurance (regardless whether you are mapped in a high risk SFHA)
- Planning before a disaster occurs

LEARN MORE!

- **FEMA Region II – Coastal Analysis and Mapping**

  http://www.region2coastal.com

- **New Jersey Mapping Status**

  https://www.rampp-team.com/nj.htm

LEARN MORE!

- **www.RAMPP-TEAM.com:** PowerPoint Presentation & Fact Sheets & additional information will be posted

Contact Information

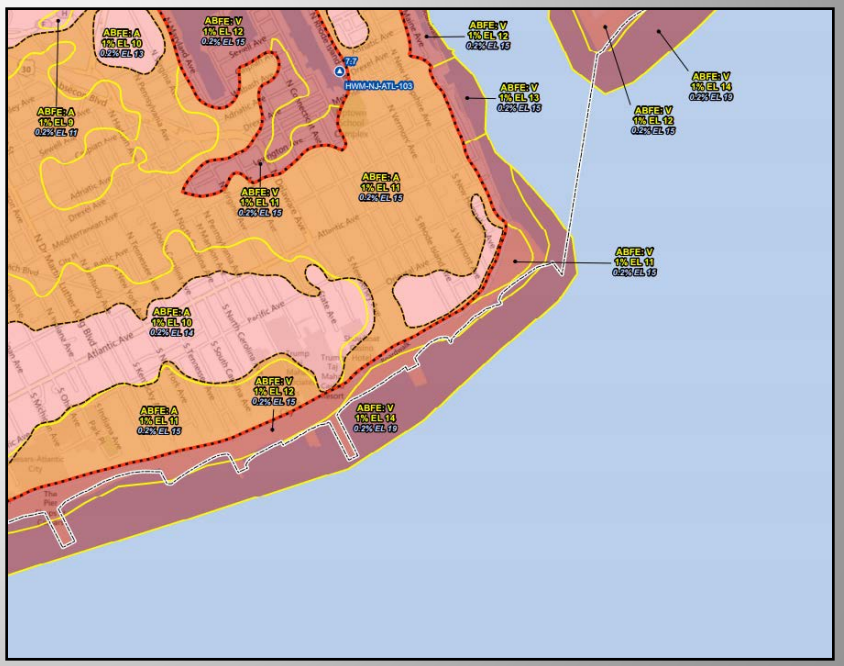
- FEMA Region II
  Paul Weberg,
  DHS/FEMA Region II
  290 Broadway, 29th Floor
  New York, NY
  (212) 680-3638
  Paul.weberg@fema.dhs.gov

- NJDEP
  John Scordato / Joseph Ruggeri / Chris Gould
  NJDEP, Bureau of Dam Safety & Flood Control
  Phone: 609-292-2296 Fax: 609-984-1908
  Visit NJDEP website: www.nj.gov/dep/floodcontrol
  Download Model Ordinances: http://www.nj.gov/dep/floodcontrol/modelord.htm

- RAMPP
  Jean Huang
  HES-PTS Region II Department Manager
  8401 Arlington Blvd.
  Fairfax, VA 22031
  Phone: (703) 849-0264 Fax: (703)849-0648
  JHuang@dewberry.com

GROUP DISCUSSION

- **What are the potential effects from proposed changes in the DFIRMs?**
  - **Example: a property that was in a low-risk zone now is located in a high-risk zone**



- **Questions regarding:**
  - **Community Risk Awareness?**
  - **Coastal Research and Modeling?**
  - **Affected Communities?**