



FEMA



# Monmouth County, NJ Coastal Hazard Analysis Flood Risk Review Meeting

August 21, 2013

**RiskMAP**  
Increasing Resilience Together



# Agenda for Today

- **Kick-off and Introductions**
- **Risk MAP Program Overview**
- **Hazard Mitigation Planning Process and Mitigation Actions**
- **Overview of Non-Regulatory Flood Risk Products and Datasets**
- **Coastal Flood Risk Study and Mapping**
- **Flood Risk Communications**
- **USACE & USGS**
- **Breakout Group Sessions**

# FEMA's Risk MAP Program

- Risk Mapping, Assessment and Planning 2010 - 2014
- Builds on Map Mod digitized Flood Insurance Rate Map (FIRM) successes
- Will deliver quality data that **increase public awareness and lead to action that reduces risk to life and property**
- Regulatory Products: Flood Insurance Study (FIS) and FIRM (Coastal re-mapping)
- New Non-Regulatory Products and Datasets



Mapping



Assessment



Planning



# Why We're Doing This: Hazard Mitigation

- Hazard Mitigation is defined as any sustained **action taken to reduce or eliminate long-term risk** to life and property from hazards
- Use new Risk MAP information to help with identifying mitigation actions when updating your Hazard Mitigation Plan

### DFIRM Database

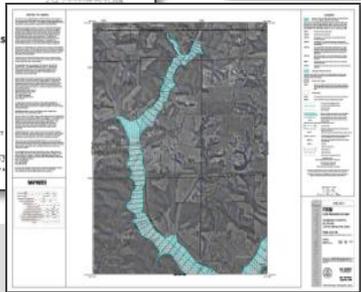
- ☐ Flood\_Hazard\_Data
- ☐ Political\_Boundaries
- ☐ Public\_Land\_Survey\_System
- ☐ TopoData
- ☐ Community\_Panel\_Info
- ☐ L\_Comm\_Info
- ☐ L\_MT1\_LOMC
- ☐ L\_Pan\_Revis
- ☐ L\_Pol\_FHBM
- ☐ L\_Riv\_Model
- ☐ L\_Sin\_Start
- ☐ L\_Vtr\_Nm
- ☐ S\_Bfe
- ☐ S\_DOC\_Index
- ☐ S\_Firm\_Pan
- ☐ S\_Gen\_Struct
- ☐ S\_Label\_Ld
- ☐ S\_Label\_Pt
- ☐ S\_LQMR
- ☐ S\_Perm\_Bmk
- ☐ S\_Quad
- ☐ S\_Riv\_Mrk
- ☐ S\_Tnsport\_Ar

### FLOOD INSURANCE STUDY



FLOOD COUNTY, USA AND INCORPORATED AREAS

Federal Emergency



### Flood Risk Database

- ☐ Community\_Panel\_Info
- ☐ L\_Comm\_Info
- ☐ L\_MT1\_LOMC
- ☐ L\_Pan\_Revis
- ☐ L\_Pol\_FHBM
- ☐ L\_Riv\_Model
- ☐ L\_Sin\_Start
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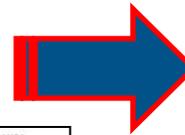
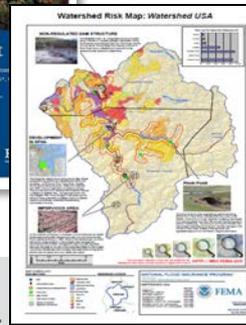


### Flood Risk Report

The public areas showing the Watershed USA, Map of County of Ocean, City of Pocomoke, Town of Westport, County of Kent County, VA

Report Number: 005

08/20/2011



### Multi-Jurisdictional Natural Hazard Mitigation Plan

Monmouth County, New Jersey

FINAL

Prepared for



Monmouth County Office of Emergency Management  
300 Halls Mill Road  
Freehold, New Jersey 07728

March 2009

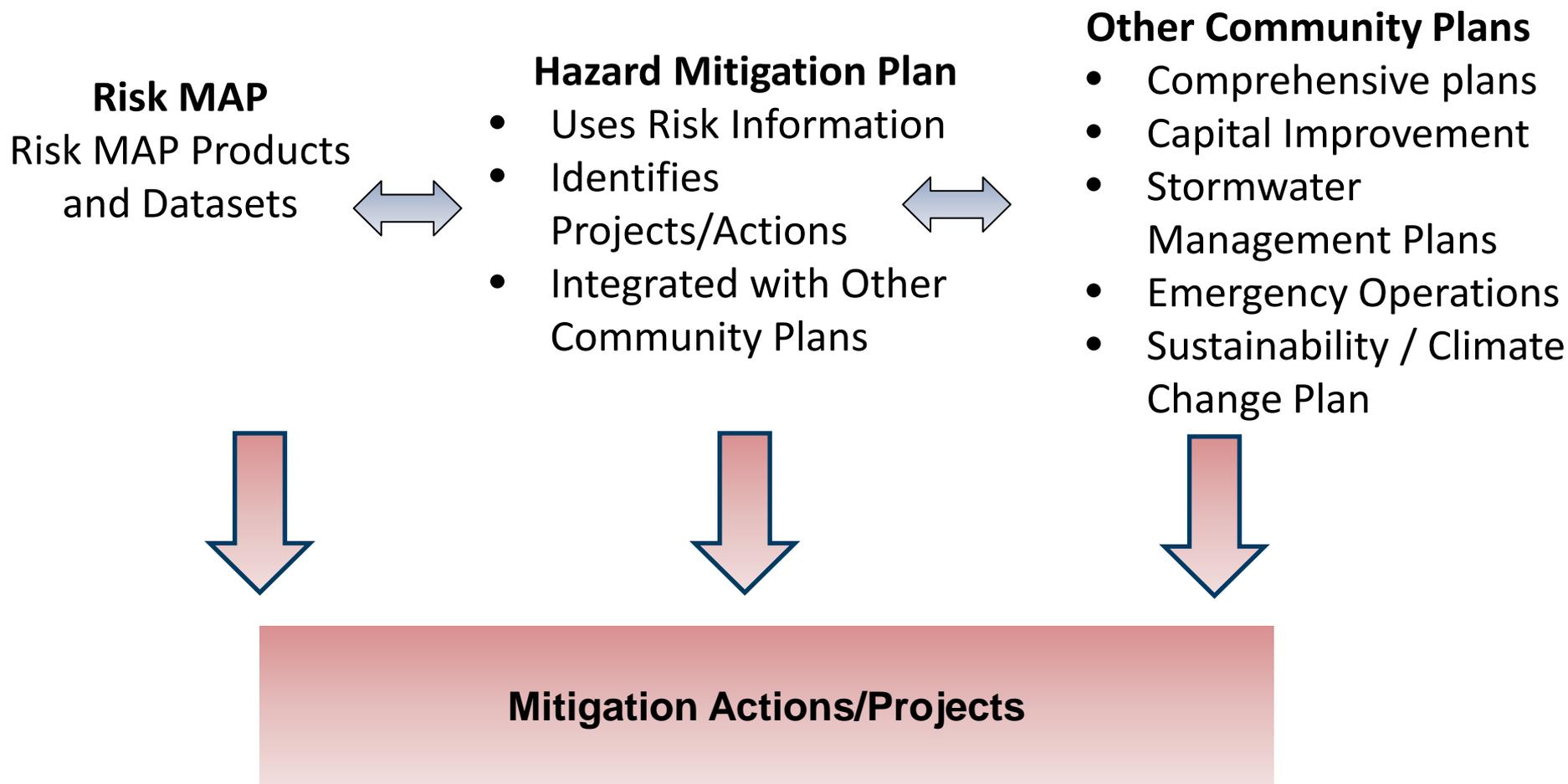
Prepared by



201 Willowbrook Boulevard, 3<sup>rd</sup> Floor  
Wayne, New Jersey 07470-7005



# Local Hazard Mitigation Plans (HMPs)



# Mitigation Actions – Types, Examples



## STRUCTURE AND INFRASTRUCTURE PROJECTS

Acquisition  
Elevation  
Retrofits  
Drainage

## LOCAL PLAN AND REGULATIONS

Zoning  
Building Codes  
Ordinances  
Open Space Plan

## COMMUNITY IDENTIFIED PROGRAMS

Firewise  
StormReady  
NFIP  
CRS

## NATURAL SYSTEM PROTECTION

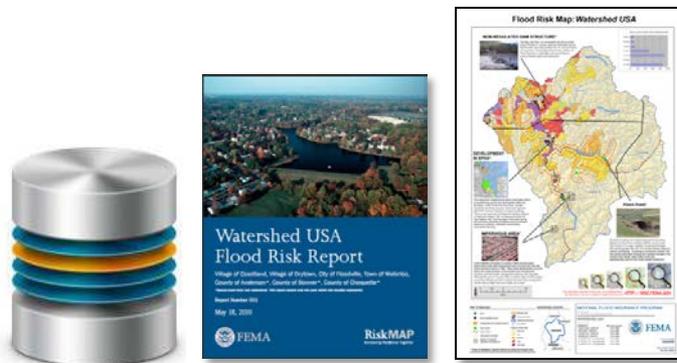
Stream and wetland restoration  
Erosion control

# What Action Will You Take?

- What are some **areas of mitigation interest** in your community?
- Can you think of any **potential mitigation projects**?
- **Review draft Areas of Mitigation Interest and provide feedback** to NJDEP and FEMA representatives during the working session



# Non-Regulatory Coastal Flood Risk Products and Datasets



## ■ Flood Risk Products

- Flood Risk Report, Map, and Database

## ■ Flood Risk Datasets

- Changes Since Last FIRM (CSLF)
- Coastal 1% Depth Grid
- Areas of Mitigation Interest (AOMI)
- Flood Risk Assessment (refined Hazus analysis)

# Changes Since Last FIRM – Identifying Actions

## Legend

### Effective ABFE Prelim Change

#### Effective to Prelim

#### Effective to Prelim2 Zone Change

-  Non-SFHA to AO
-  Non-SFHA to AE
-  Non-SFHA to VE
-  AE to VE
-  No Zone Change
-  VE to AE
-  AE to Non-SFHA
-  VE to Non-SFHA

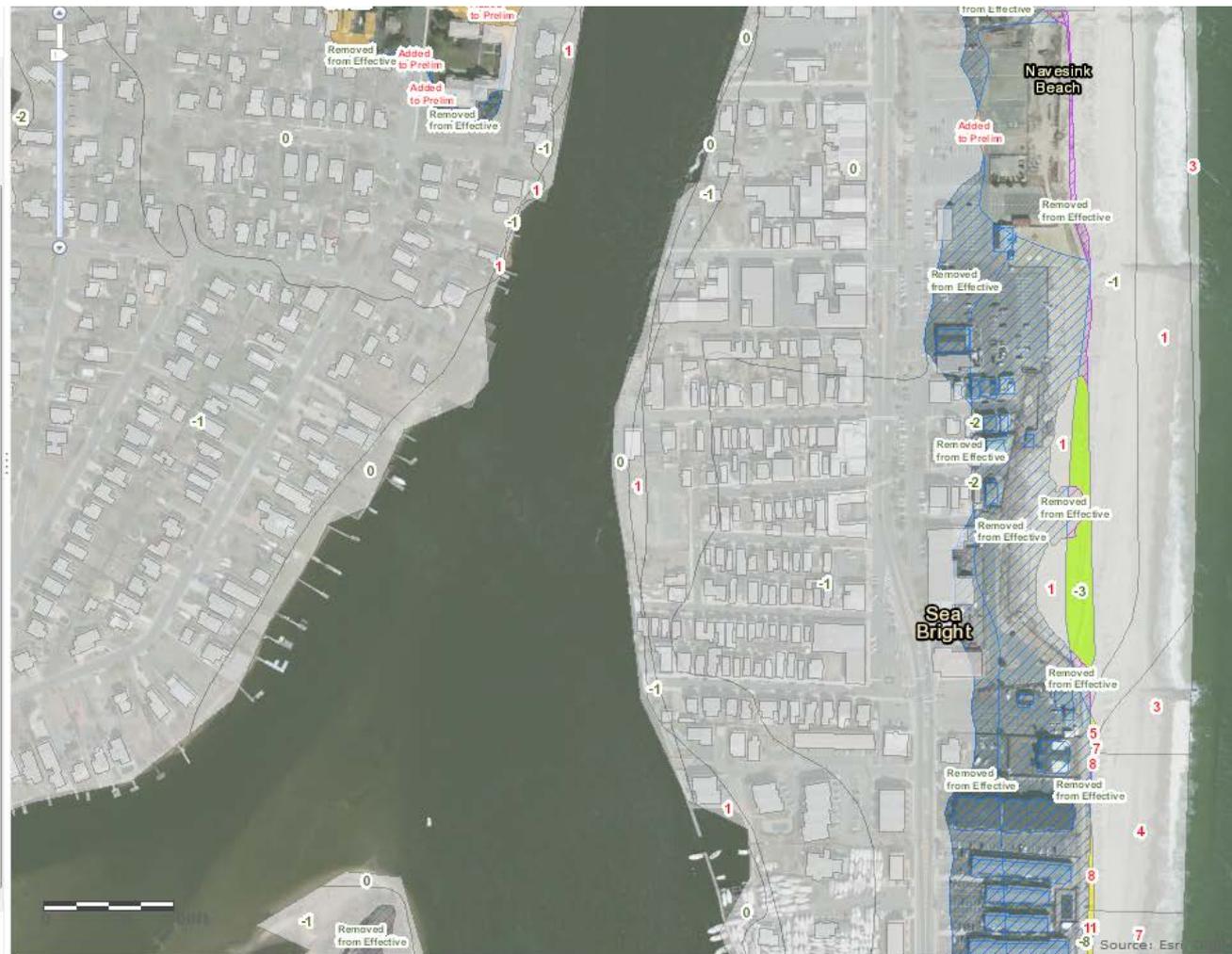


# Changes Since Last FIRM – Identifying Actions

## Contents

- Grid
- Depth Grids New Jersey
- Effective ABFE Prelim Change
  - Effective to Prelim
    - Effective to Prelim2 Zone
    - Perception
    - Buildings NYC (Effective to Prelim2)
    - Buildings Monmouth (Effective to Prelim2)
    - Effective to Prelim2 Zone Change
  - Non-SFHA to AO
  - Non-SFHA to AE
  - Non-SFHA to VE
  - AE to VE
  - No Zone Change
  - VE to AE
  - AE to Non-SFHA
  - VE to Non-SFHA
- ABFE to Prelim
- Preliminary Workmaps (supersede ABFEs)
- Advisory Base Flood Elevation Layers
- National Flood Hazard Layer (Sandy Area)
- NOAA Aerial Imagery - Cached (Sandy 2012)
- Imagery with Labels

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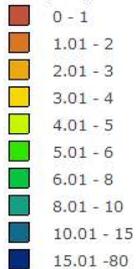


# Depth Grids – Identifying Actions

## Legend

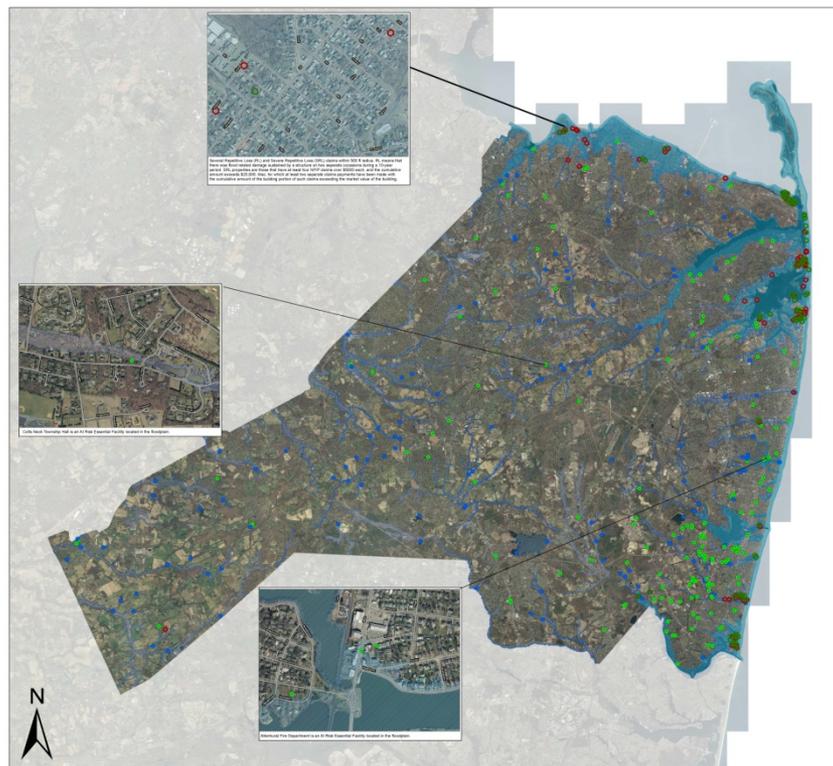
### Depth\_Grids\_New\_Jersey

Monmouth 100-Yr Depth  
Grid (feet)



# Areas of Mitigation Interest – Identifying Actions

## Areas of Mitigation Interest - DRAFT Monmouth County, New Jersey



0 18,750 37,500 Feet

- Legend**
- Areas of Significant Erosion
  - At Risk Essential Facilities
  - Dam
  - Past Claims Hot Spot (RL Cluster)
  - Past Claims Hot Spot (SR)
  - Stormflow Concentrations
- FLOOD\_ZONE**
- Coastal - Preliminary Work Map
  - Inactive - Effective of FEMA Riverine Floodplain



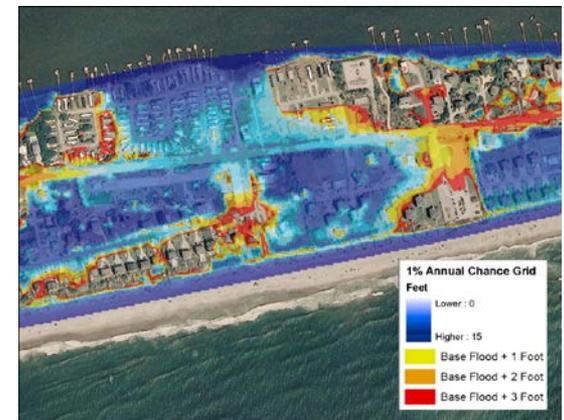
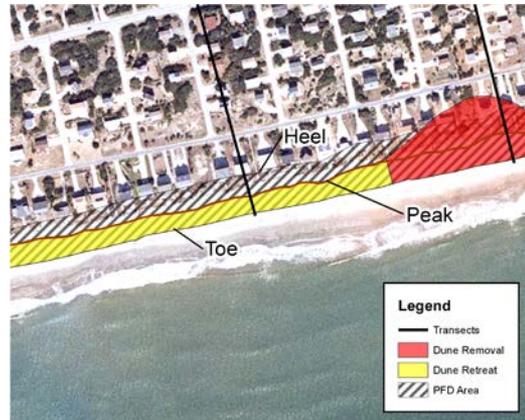
NATIONAL FLOOD  
INSURANCE PROGRAM

AOMI MAP

VERSION NUMBER  
RELEASE 2/14/13  
8/21/2013

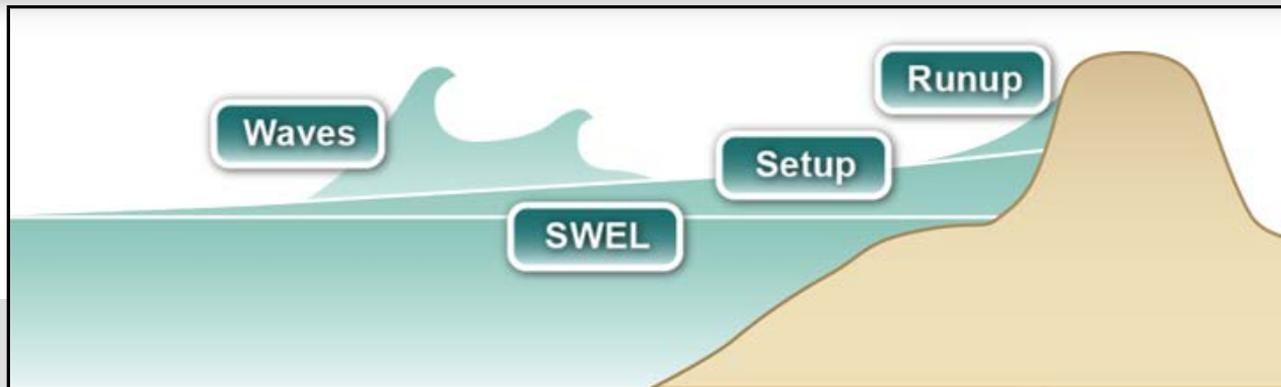
# Non-Regulatory Coastal Flood Risk Products and Datasets

- **To be provided in the near future:**
  - Coastal Flood Risk Assessments
  - Primary Frontal Dune (PFD) Erosion Areas
  - Coastal Increased Inundation Areas
  - Risk MAP report, map, database

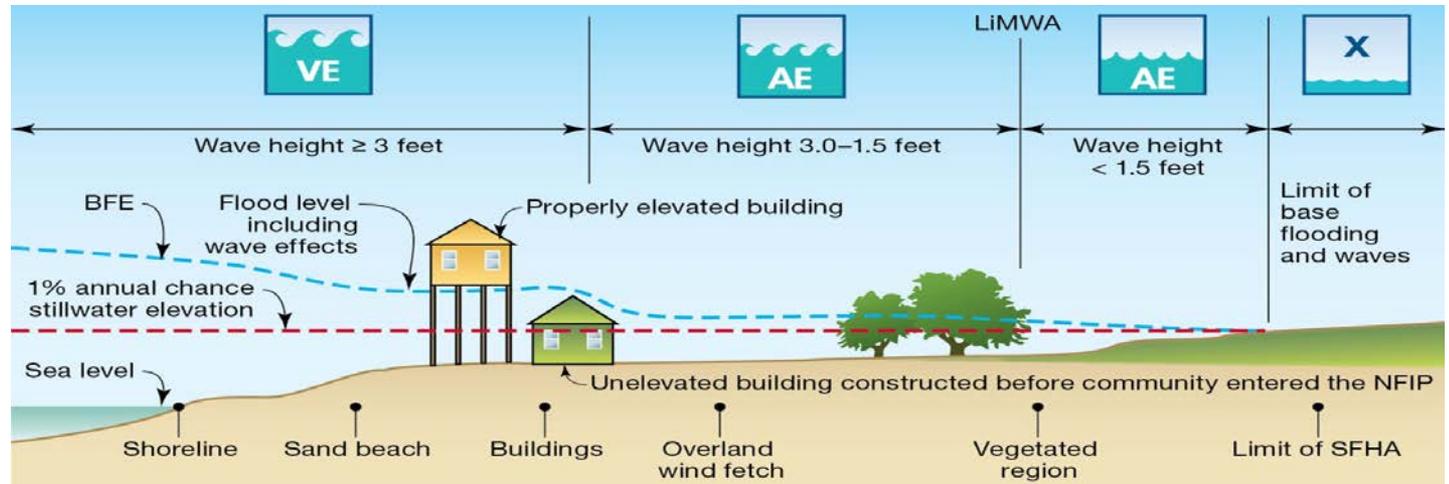
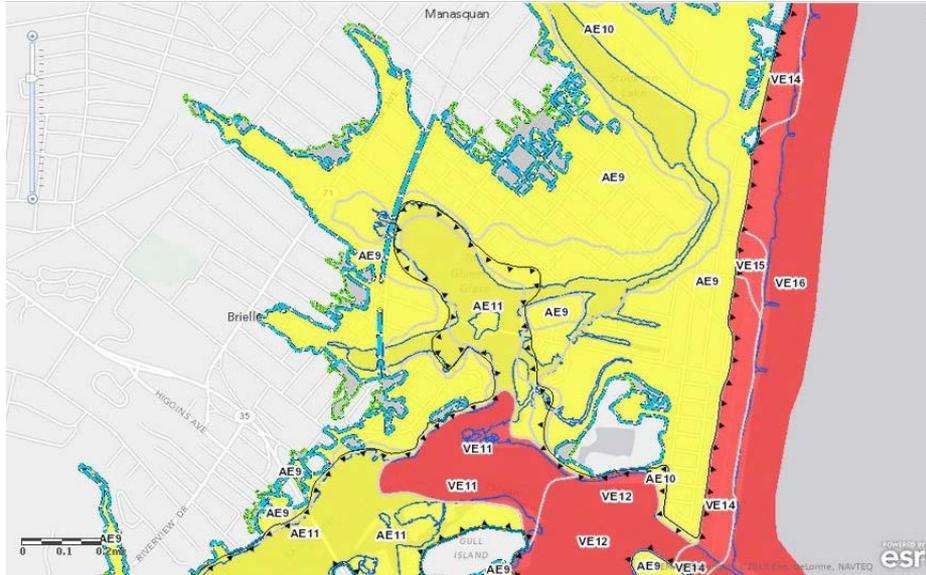


# Effective vs. New Coastal Study

| Coastal Study Component | Effective Study (2009) | New Study (2013)  |
|-------------------------|------------------------|---|
| Topographic data        | 1970's to 1980's       | 2006/2007 LiDAR for Upper Monmouth<br>2010 LiDAR for Lower Monmouth |
| SWELs                   | 1970's to 1980's       | 2010 FEMA study   |
| Modeled transects       | 110                    | 455   |
| Wave setup              | No                     | Yes   |
| Wave runup              | No                     | Yes   |
| LiMWA                   | No                     | Yes   |



# Mapping



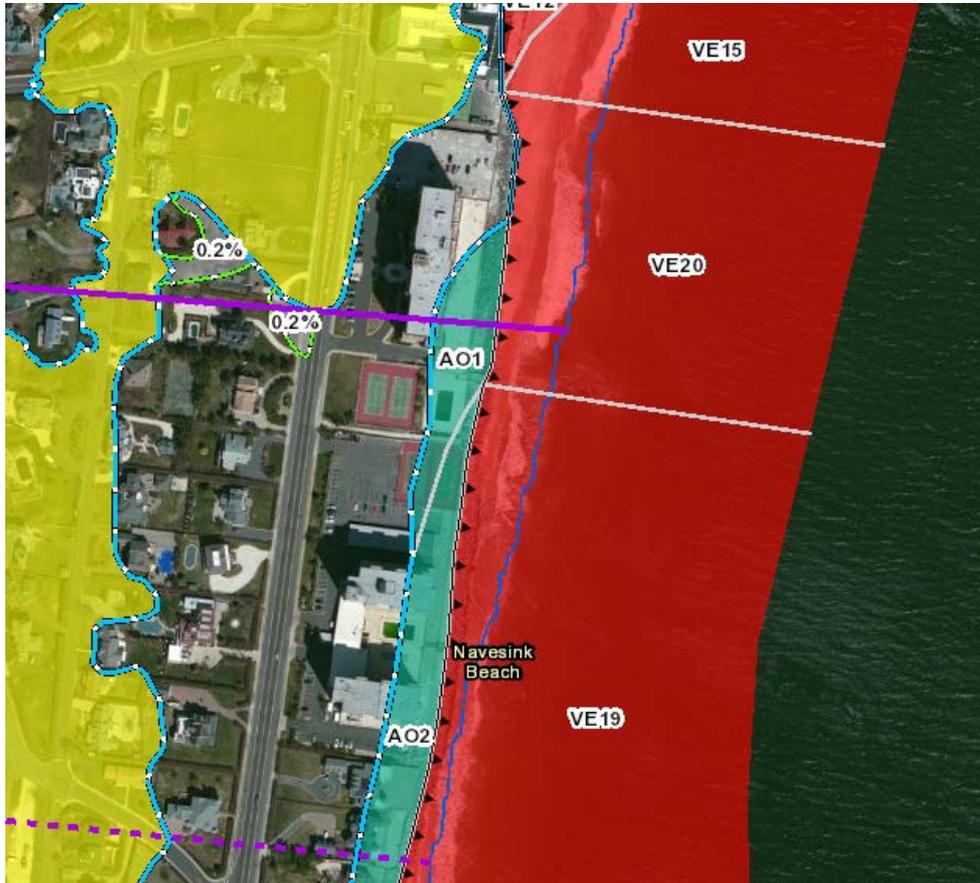
# Wave Runup

- Runup modeled for beaches, bluffs, cliffs and coastal structures
- Calculate top 2% of runup elevations (vs. previous studies using mean runup)
- Methods:
  - Runup 2.0, TAW, CSHORE

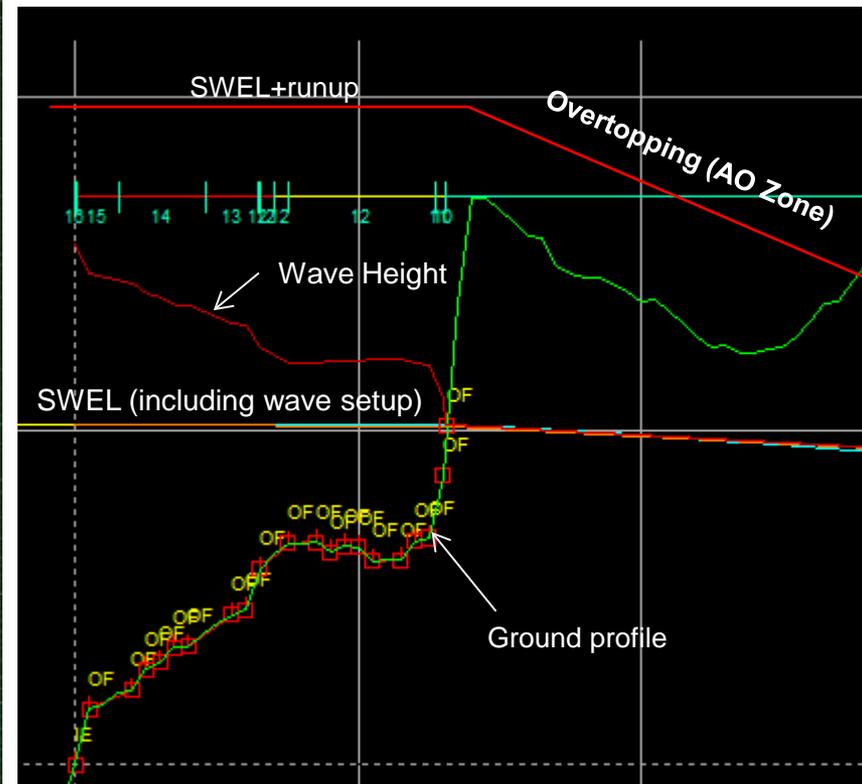


# Wave Runup

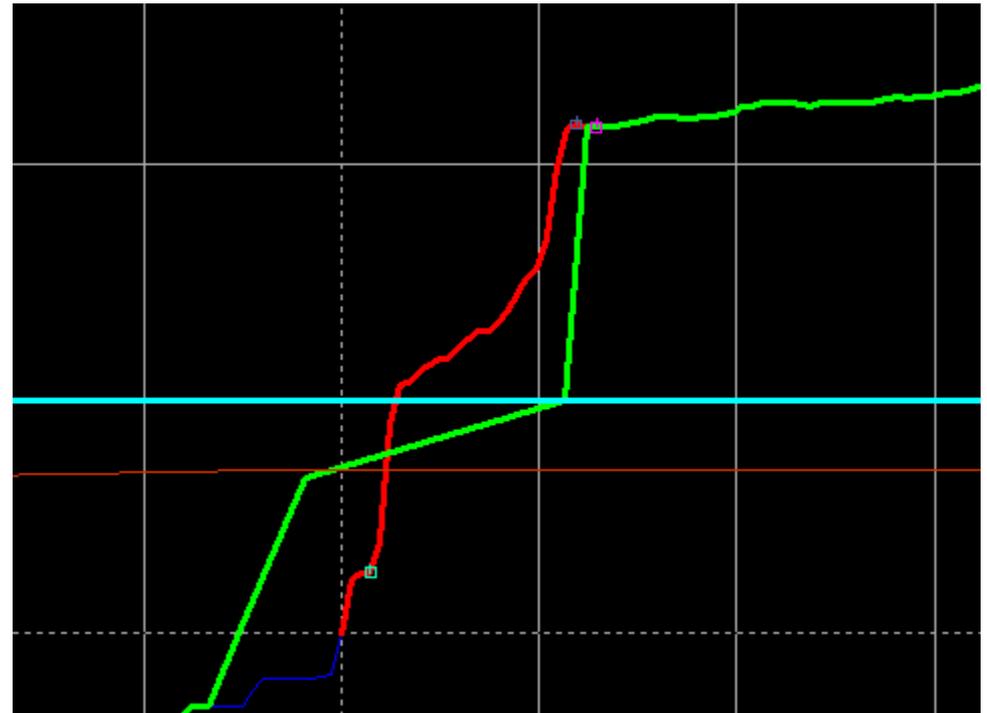
How is runup mapped?



Profile view of Transect

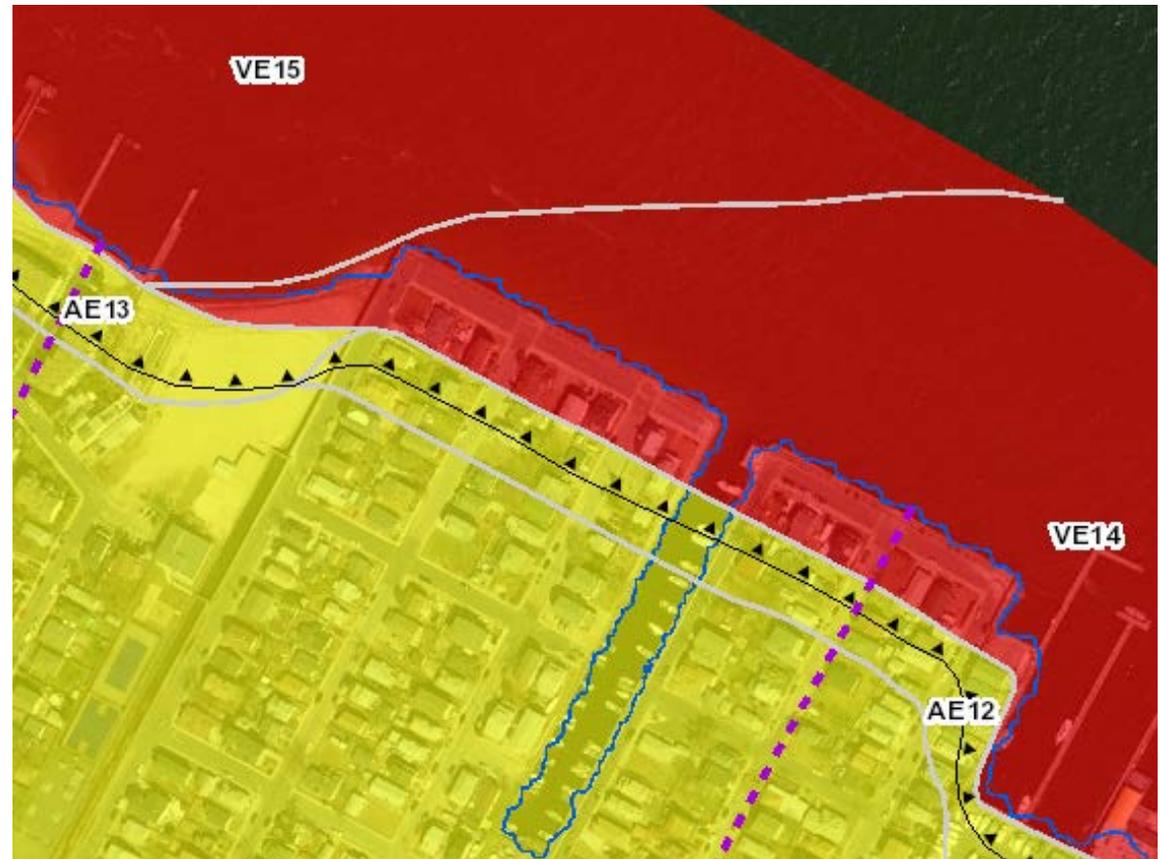


# Bluff Erosion



# LiMWA on the Map

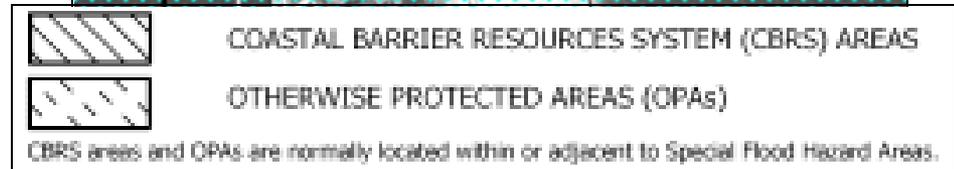
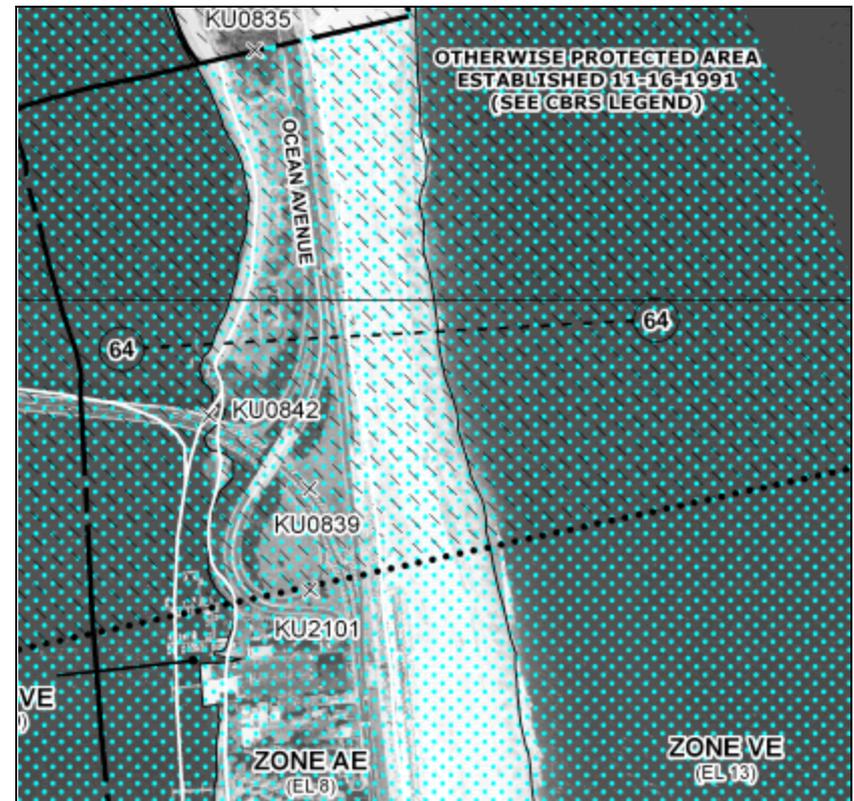
- LiMWA sits inside of a Zone AE
- LiMWA can cross Zone AE lines
- Triangles point to higher waves
  - Indicates where wave height exceeds 1.5ft
- Also referred to as Coastal A Zone





# Coastal Barrier Resources System

- Consists of coastal barriers and “otherwise protected areas”
- Federal spending and financial assistance for development is restricted in these areas
  - Flood insurance is not available if a structure was built or substantially improved/damaged after CBRS designation date
- Official boundaries of CBRS are the official maps from the U.S. Fish and Wildlife Service

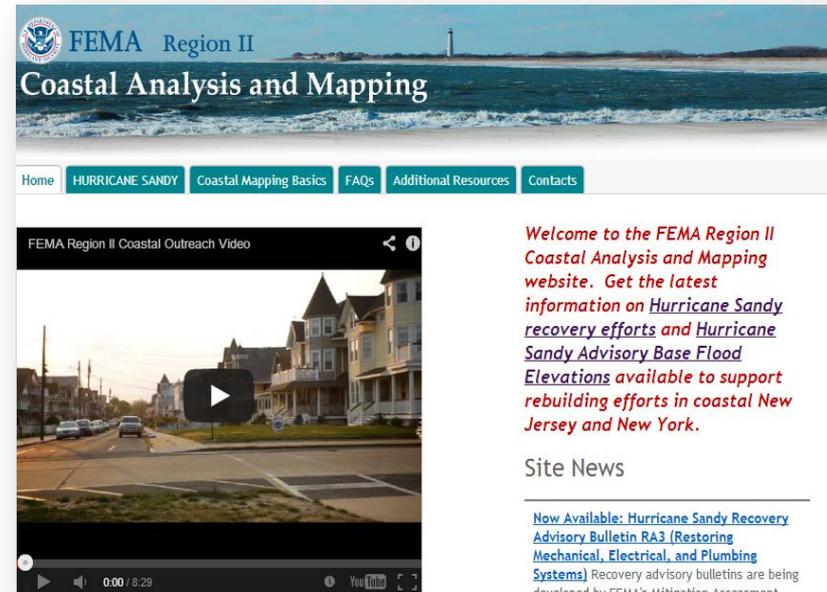


# Risk Communications

- **Federal/State/Local goals:**
  - Creating safer communities reducing risk to lives and property
  - Effectively communicate risk and increase public awareness, leading citizens to make informed decisions regarding risk
  
- **Key factors contributing to successful achievement of these goals are:**
  - Community engagement and exchange of flood risk information
  - Effective collaboration through partnerships
  - Strategic communications plan development

# Risk Communications - Resources

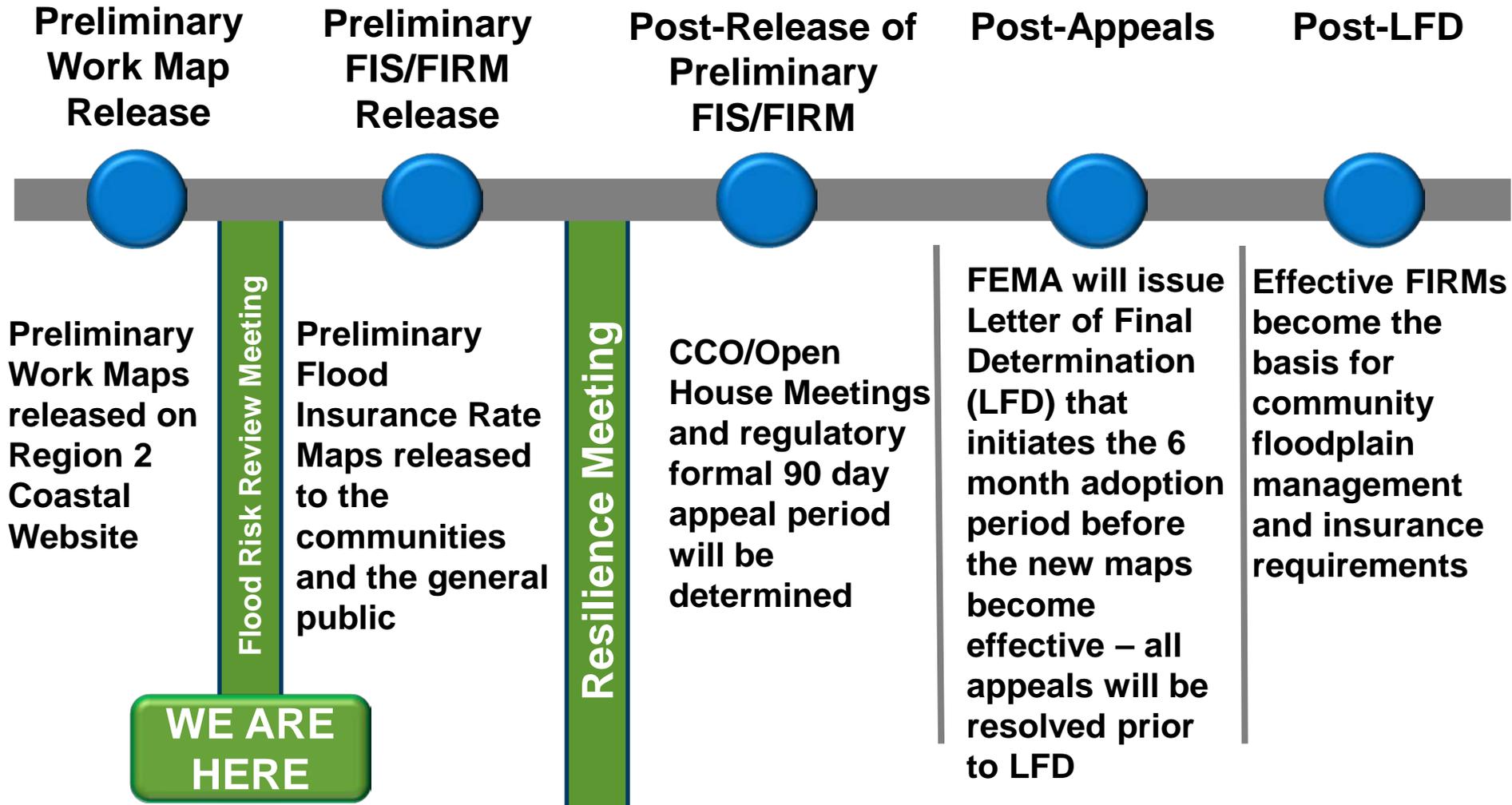
- Visit our Website:  
[www.region2coastal.com](http://www.region2coastal.com)
- Outreach factsheets
- Frequently Asked Questions
- Coastal Risk Educational Videos
- Best Available Data (Preliminary Work Maps)
- Non-Regulatory Products and Datasets



# Timeline for Monmouth County – Past

- **NJ/NYC Coastal Flood Risk Study – started in 2009**
- **Meetings with local officials:**
  - Coastal Study Update Webinar – August, 2010
  - Introduction to Risk MAP – July, 2011
  - Hazard Mitigation Planning – December, 2011
  - Risk Assessment – February, 2012
- **Post-Sandy:**
  - ABFEs – December, 2012
    - Multiple meetings with local officials and public
  - Preliminary Work Maps – June, 2013
    - Webinar with local officials

# Timeline for Monmouth County – Future



# Conclusion: Community Resilience

Risk Changes  
Over Time



FEMA Provides  
Best Available  
Data



Community  
Officials Adopt  
Higher  
Standards



Property  
Owners Build  
to Higher  
Standards



More Resilient  
Communities  
Created



***Together, we all can create  
stronger and safer communities***

# US Army Corps of Engineers (USACE)

## ■ Relevant Projects and Studies

- Flood Control and Coastal Emergencies (FCCE)  
Repair/Restore of Constructed Projects
- Authorized/Unconstructed Projects
- Ongoing Studies
- Project Performance Evaluation & Comprehensive Study

## ■ Other On-going Initiatives

- Participation in the Hurricane Sandy Rebuilding Taskforce
- Continued collaboration w/State and Federal partners on various risk reduction and resiliency building initiatives, workshops, and guidance

# US Geological Survey (USGS)

The Nation's science agency – response to Hurricane Sandy

The USGS studies the effects of hurricanes, tropical storms and flooding in general to better understand potential impacts on communities and to protect the environment, human life and property.

The current storm-surge sensor deployment program began in 2005 after Hurricane Katrina.

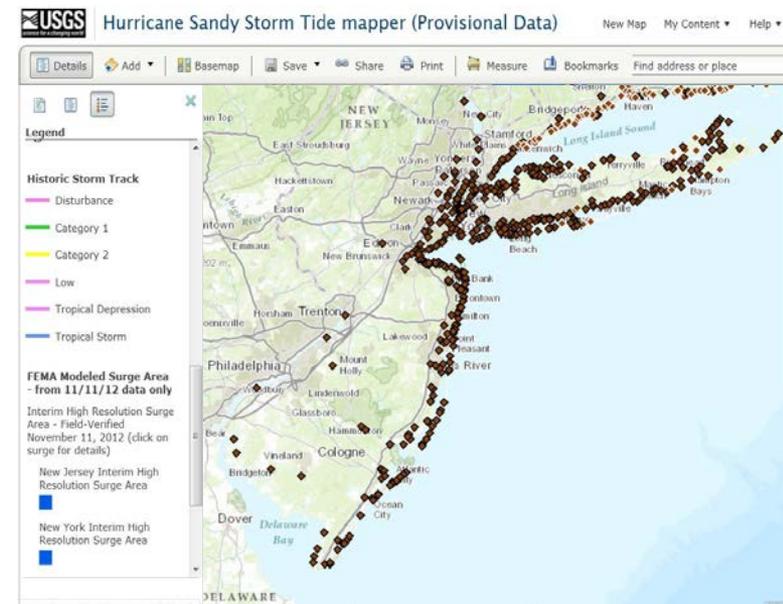


Rapid deployment gages

Storm tide sensors



Storm mapper provisional data delivery



# USGS Data Collection

- The USGS deployed 230 storm surge sensors along the East Coast. (148 - surge, 9 - wave, 65 BP, and 8 - RDGs)
- The USGS recovered 228 sensors (only lost 2 surge sensors)
- The USGS identified over 900 individual high-water-mark sites and surveyed about 615 of those sites
- The USGS flagged and surveyed about 170 HWM sites along the coast of New Jersey
- The data collected by the USGS during and after Hurricane Sandy was used to verify the extent of flooding along the east coast

# Breakout Groups

- **Modeling / Engineering**
- **CSLF & Depth Grids**
- **AOMI & Hazard Mitigation Planning and Actions**
- **State**
- **USACE and USGS**

***Thank you for your participation!***



# FEMA