



FEMA



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

September 12, 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**
- **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

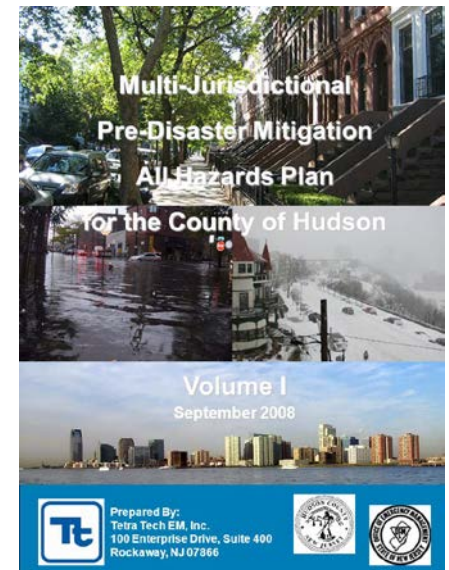
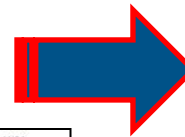
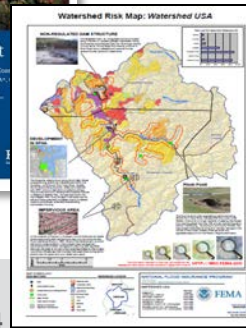
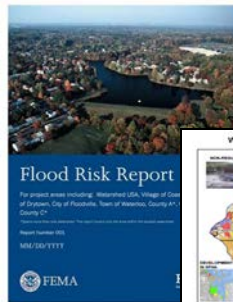
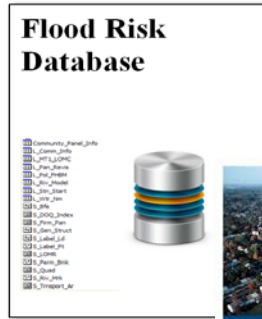
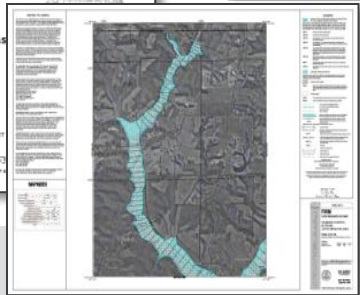
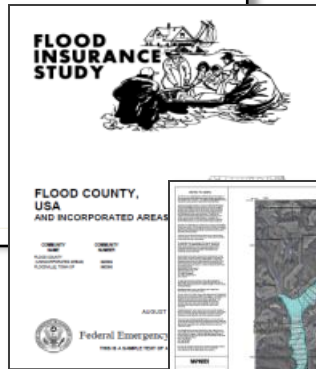
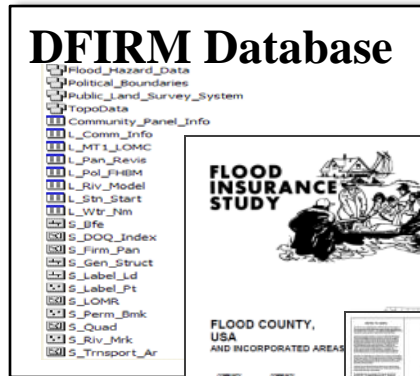


Planning

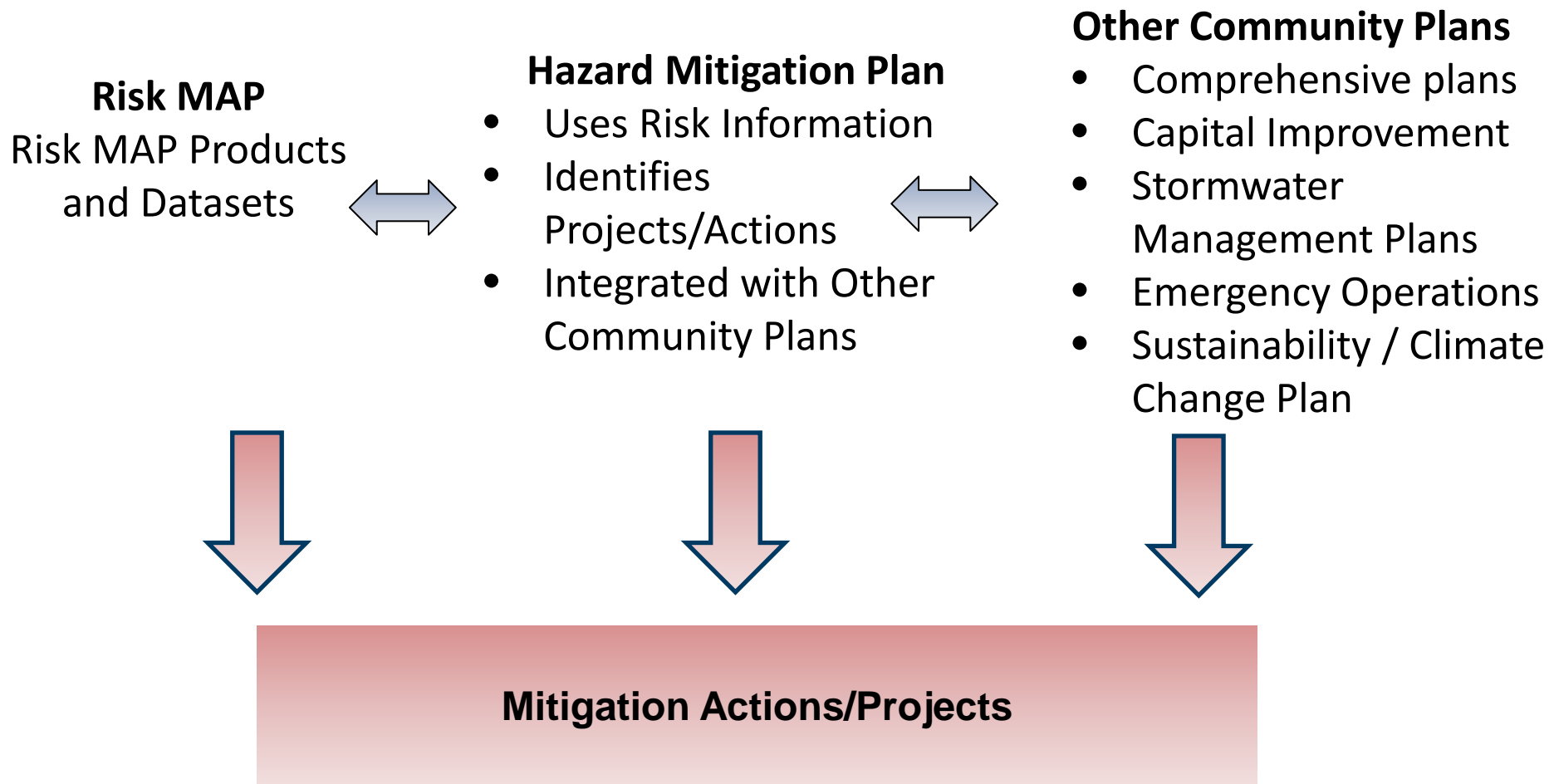


# Why We're Doing This: Hazard Mitigation

- 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



# 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



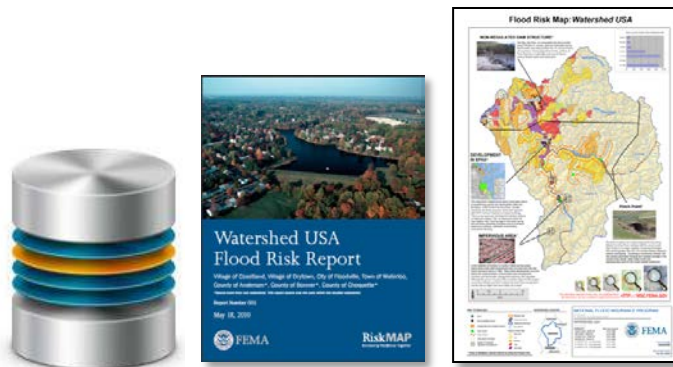
# Mitigation Strategy Workshop

- A community's Hazard Mitigation Plan is only as good as its **mitigation strategy**. This interactive workshop is a chance to begin to:
  - Develop actions
  - Build a strategy for successful implementation
  - Coordination
  - Link your natural hazard risk, action and implementation
  - Use FEMA worksheets and examples
  - Communicate directly with FEMA planners





# 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



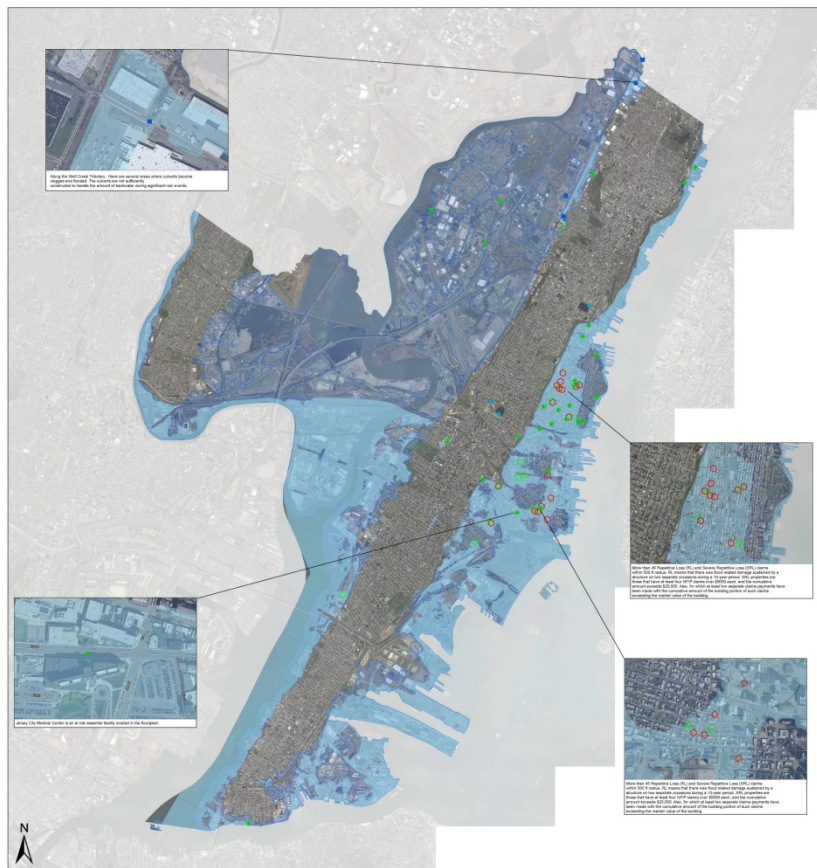
# Depth Grids – Identifying Actions





# Areas of Mitigation Interest – Identifying Actions

Areas of Mitigation Interest DRAFT  
Hudson County, New Jersey



- Areas of Mitigation Interest**
- At Risk Essential Facilities
  - Dams
  - Past Claims Hot Spot (RL Cluster)
  - Past Claims Hot Spot (SRL)
  - Stream Flow Pinch Point
  - Riverine - Effective dFIRM
  - Coastal - Preliminary Work Map

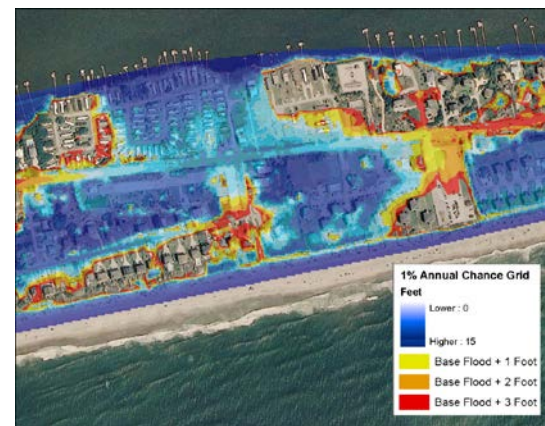
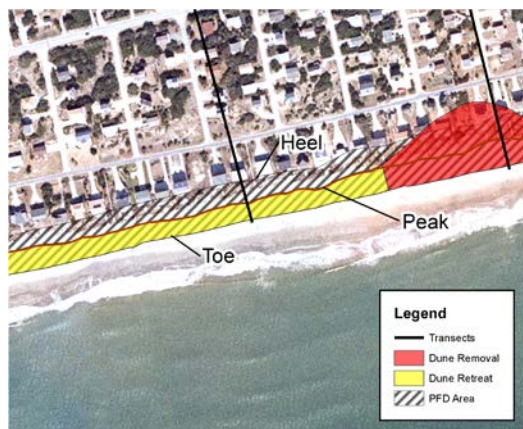
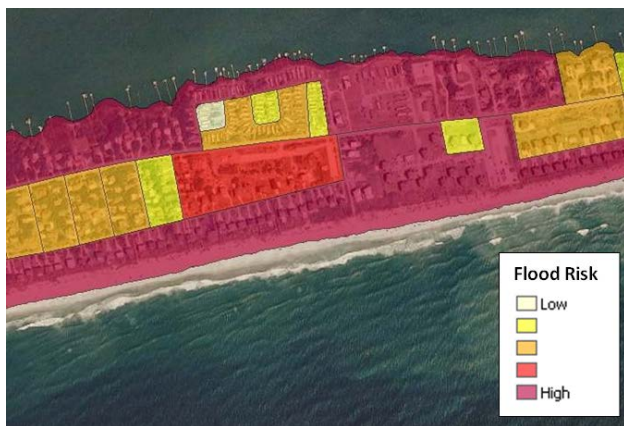


NATIONAL FLOOD  
INSURANCE PROGRAM  
AOMI MAP  
HUDSON COUNTY, NEW JERSEY

VERSION NUMBER  
1111  
RELEASE DATE  
9/12/2013

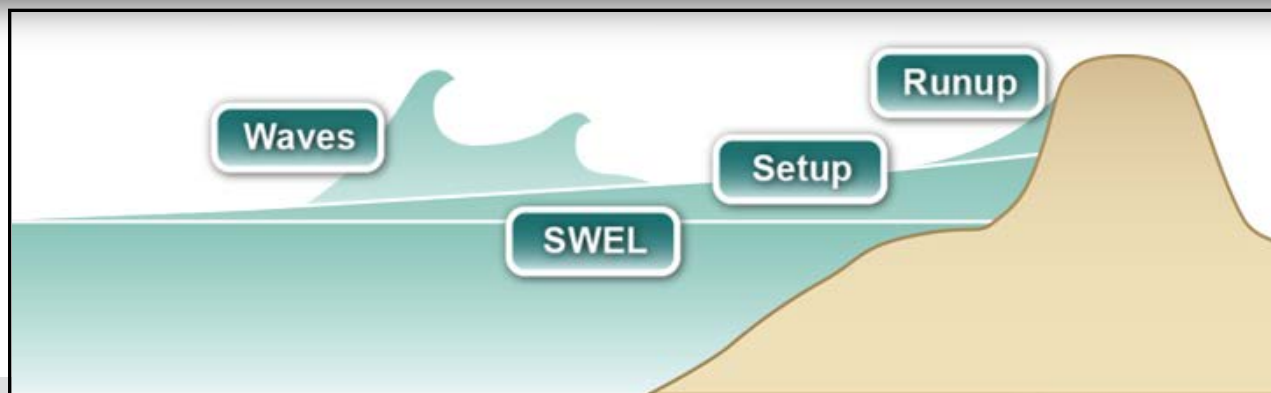
# Non-Regulatory Coastal Flood Risk Products and Datasets

- **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



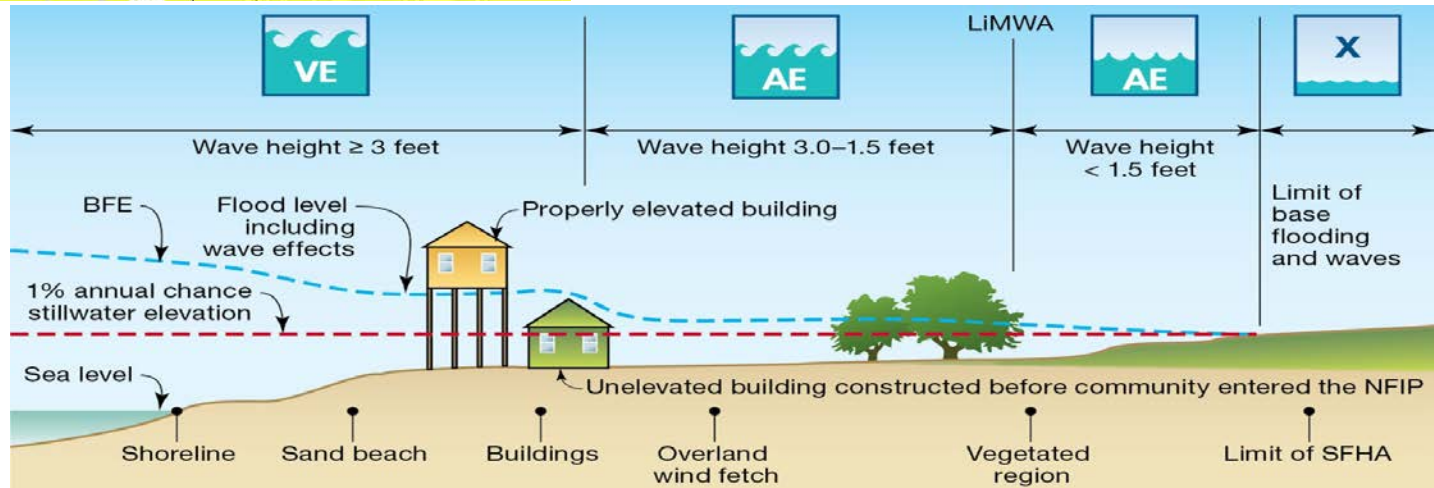
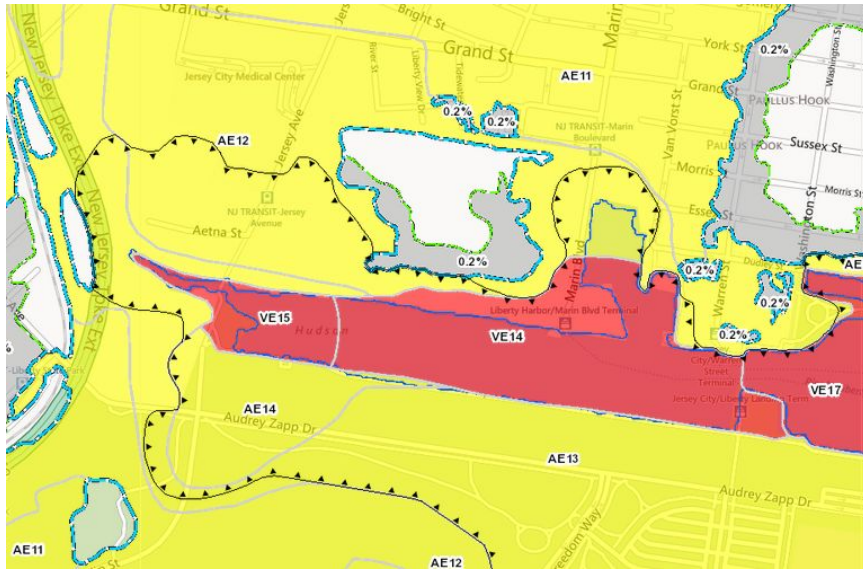
# Effective vs. New Coastal Study

Coastal Study Component	Effective Study (2009)	New Study (2013)
Topographic data	1970's	2006/2007 LiDAR
SWELs	1980's	2010 FEMA study
Modeled transects	1	132
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,  
SPM Vertical

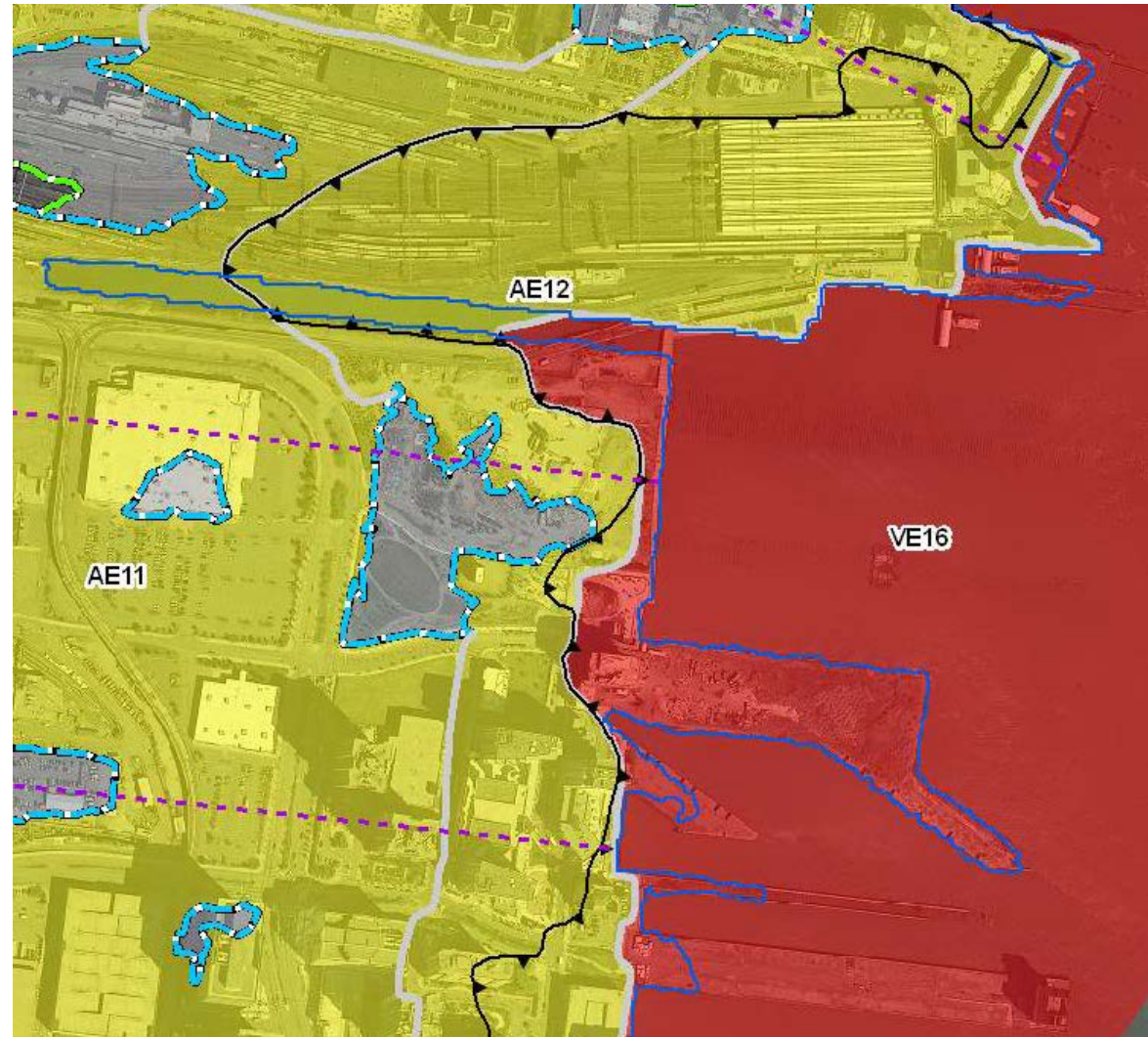






# LiMWA on the Map

- 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



# Preliminary Work Map vs. Preliminary FIRM

Hudson County, NJ  
Preliminary Work Map



**Panel 0044**  
This preliminary work map contains coastal flood hazard information only, inriver flood hazard information not included.

**Flood Hazard Information**

- 0.2% Annual Chance Boundary
- 1% Annual Chance Boundary
- Coastal Line
- PPPL Line
- LMWA
- Transect Station
- AE
- VE
- AD
- Shaded X (0.2% Floodplain)
- Hurricane Sandy High Water Mark (HSM)

**Other Symbols:**

- Published Transects
- Mapping Transects
- Shoreline
- Political Boundary
- Elevation
- VE
- AE
- X
- 8
- 12
- 16

**FEMA** **RAMP**  
Risk Assessment, Mapping, and Planning Team

Preliminary FIRM



**NOTES TO USERS**

This map is not a substitute for a Flood Insurance Study (FIS) conducted by the Federal Emergency Management Agency (FEMA) or for a Flood Insurance Policy (FIP) issued by a private insurance company. The map is intended for informational purposes only and should not be used for official purposes.

The map is based on the best available data and is subject to change without notice. The map is not a guarantee of accuracy and is not intended to be used for official purposes.

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**LEGEND**

**FLOOD HAZARD INFORMATION**

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**FIRM**  
FLOOD INSURANCE RATE MAP  
HUDSON COUNTY,  
NEW JERSEY  
DATE: 11/11/2014  
EFFECTIVE DATE: 11/11/2014

**MAP NUMBER: 50100-00-0000-0000-0000-0000-0000-0000**  
**EFFECTIVE DATE: 11/11/2014**

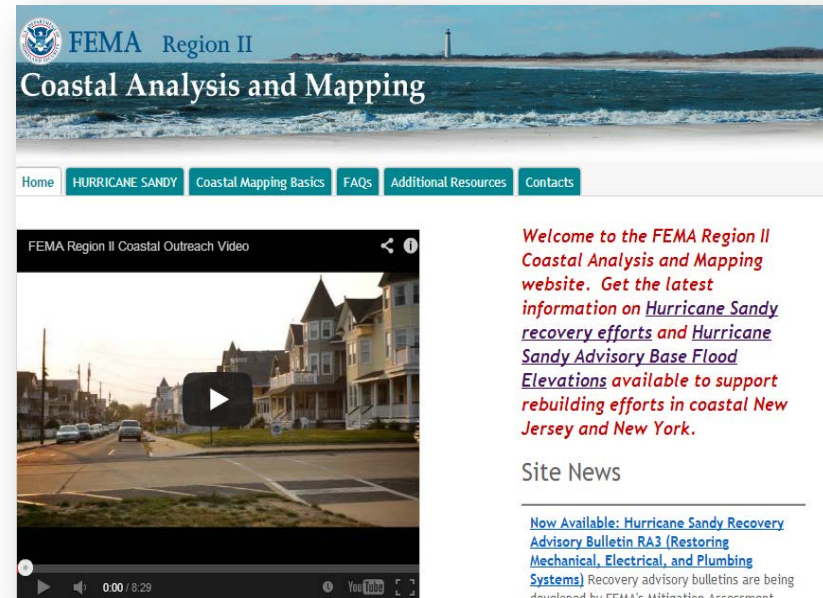
# Risk Communications

- **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

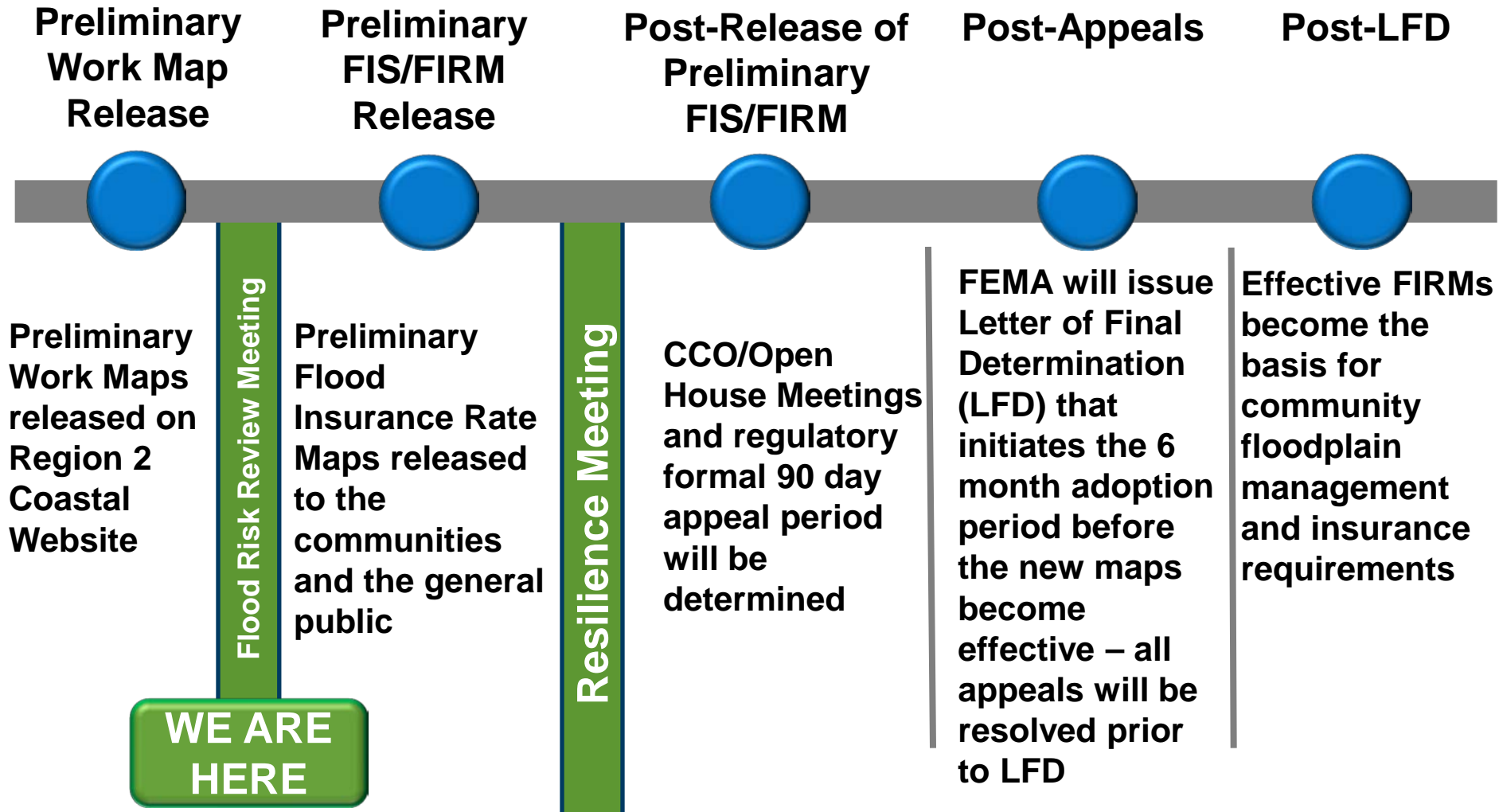
- Visit our Website:  
[www.region2coastal.com](http://www.region2coastal.com)
- Outreach factsheets
- Frequently Asked Questions
- Coastal Risk Educational Videos
- Best Available Data (Preliminary Work Maps)
- Non-Regulatory Products and Datasets



# Timeline for Hudson County – Past

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

# Timeline for Hudson 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 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.

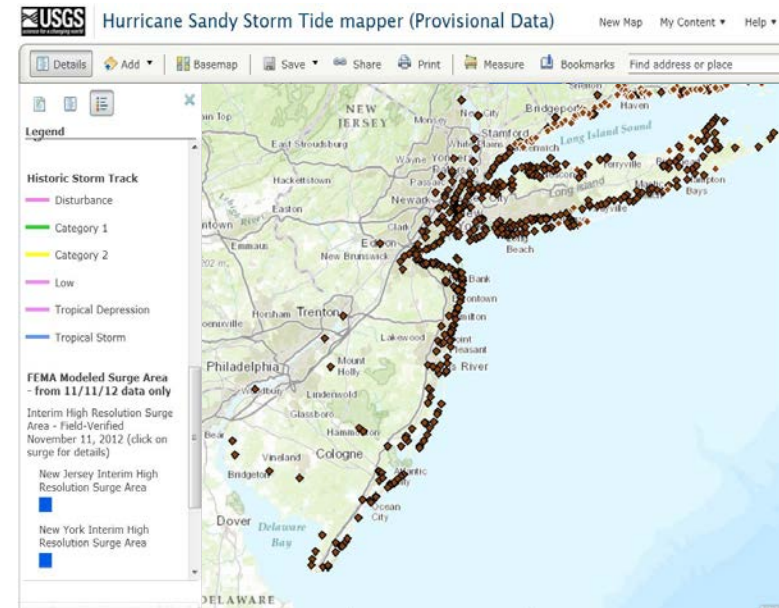


Rapid deployment gages

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



# US Army Corps of Engineers (USACE)

1. **Flood Control and Coastal Emergencies (FCCE) Repair/Restore of Constructed Projects (USACE is authorized to repair (PL84-99) and restore (PL 113-2) already constructed projects that were damaged by Hurricane Sandy.)**
  2. **Authorized/Unconstructed Projects (USACE is authorized to re-evaluate, design and construct (PL 113-2) hurricane/storm damage reduction projects already authorized by congress but, as of Oct 30, 2013, unconstructed).**
  3. **Ongoing Studies (USACE is authorized to continue studies already underway as of Oct 30, 2013, but in need of rescoping and re-evaluation due to damages sustained from Hurricane Sandy)**
  4. **Project Performance Evaluation (complete) & Comprehensive Study (underway)**
- \* All projects and studies are done in partnership with our non-federal sponsor, New Jersey Department of Environmental Protection, and local municipal sponsors.*

## Questions?

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Coastal Restoration and Special Projects Branch  
917 790 8727

# Breakout Groups

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

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

***Please don't forget to turn in your evaluation sheets!***



# FEMA