



FEMA



Ocean County, NJ Coastal Hazard Analysis Flood Risk Review Meeting

September 25, 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 and 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

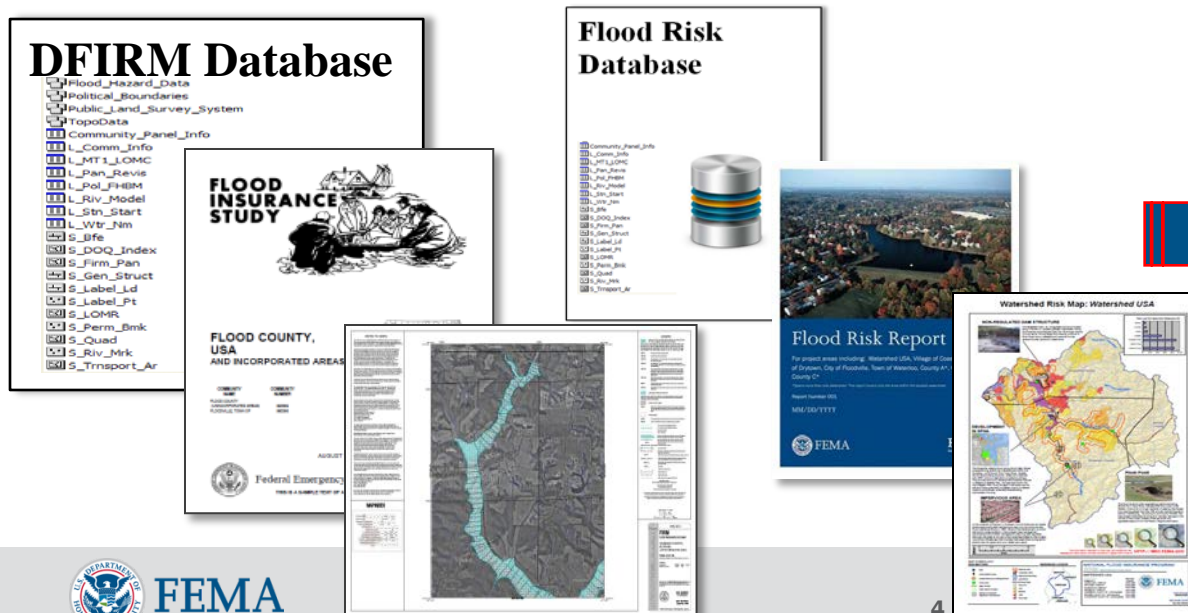


Planning



Hazard Mitigation & Your Hazard Mitigation Plan

- 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

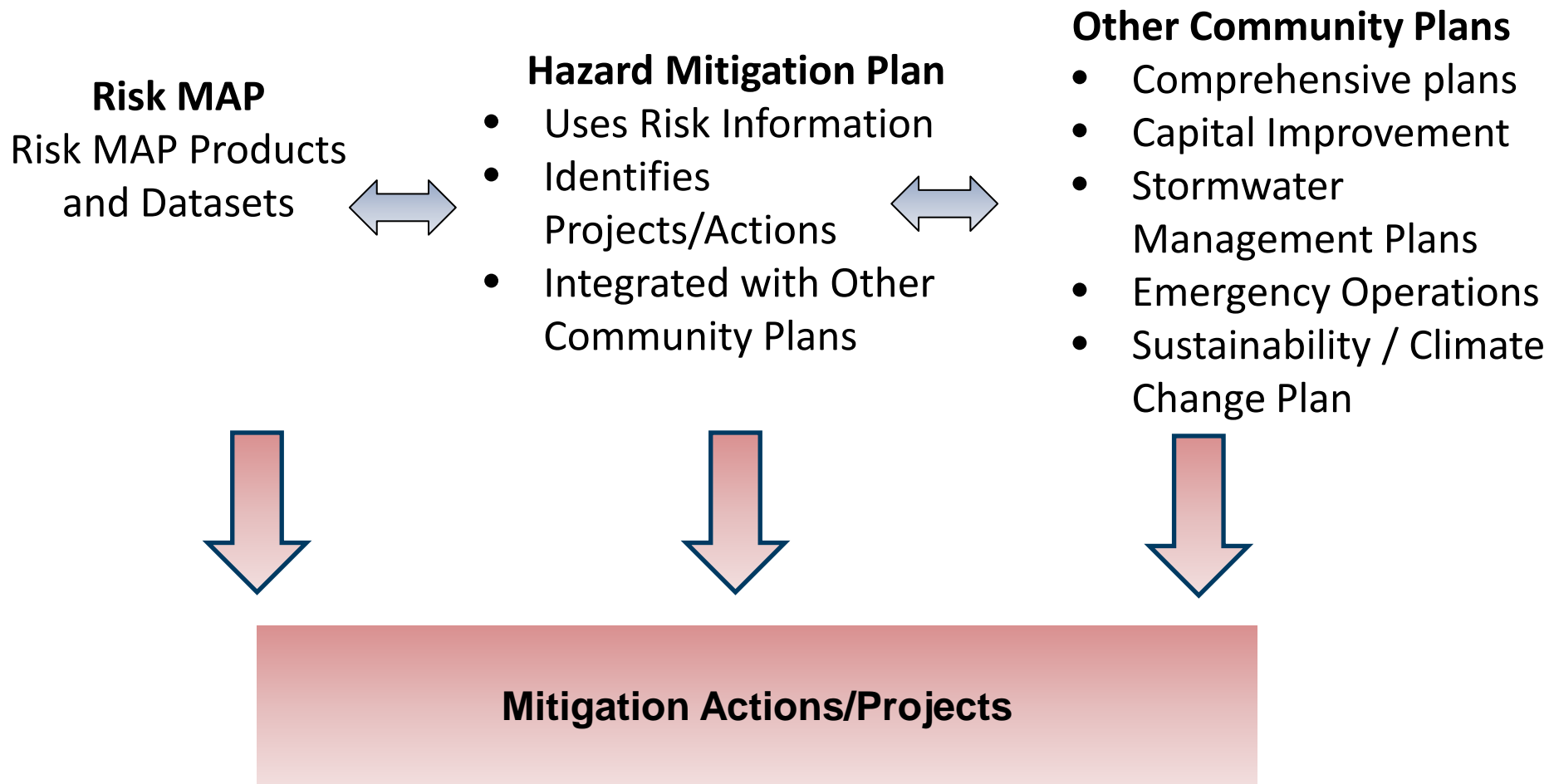


**Ocean County's
Hazard
Mitigation Plan**

Project Website:

www.OceanCountyHMP.com

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

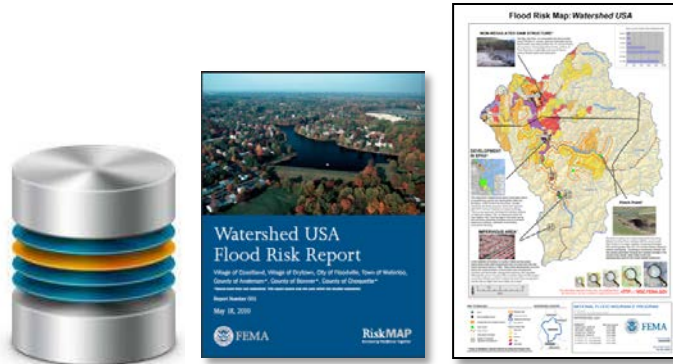
Stream and wetland restoration
Erosion control

What Action Will You Take?

- What are some **areas of mitigation interest** in your community?
- Can you think of any **additional 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

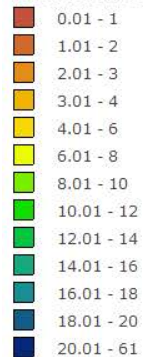
- Changes Since Last FIRM (CSLF)
- Coastal 1% Depth Grid
- Areas of Mitigation Interest (AOMI)
- Flood Risk Assessment (refined Hazus analysis)

Depth Grids – Identifying Actions

Legend

Depth_Grids_New_Jersey

Ocean 100-Yr Depth Grid (feet)



Water Surface Elevation Change Grids – Identifying Actions

About Content Legend

Legend

Water Surface Elevation Change Grids

Ocean County, NJ

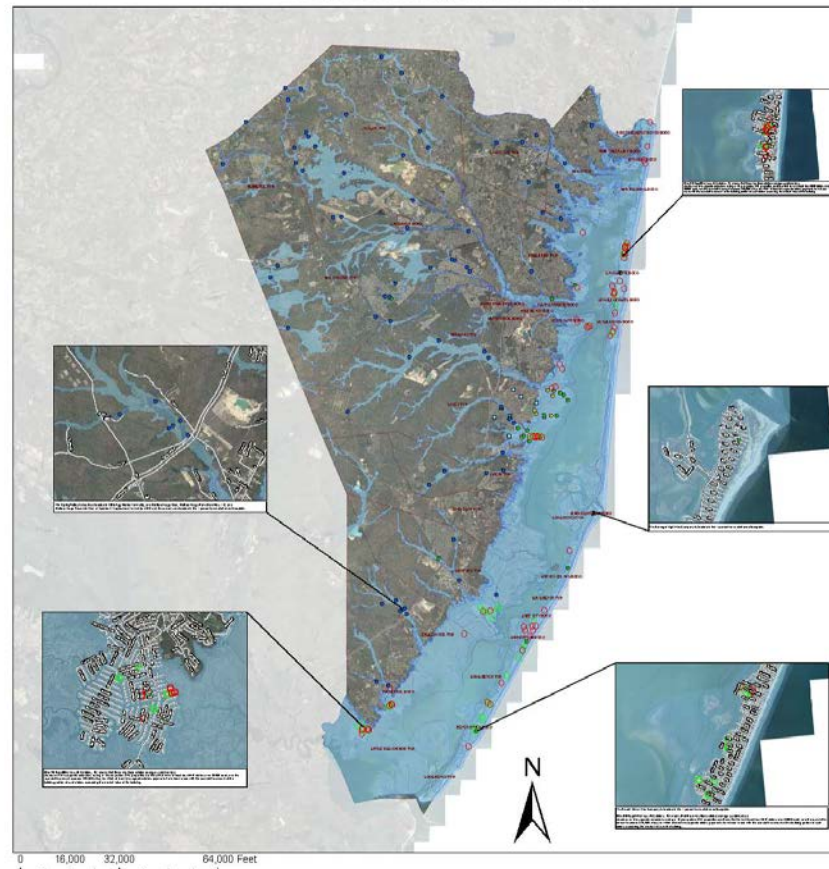
- 3+ foot decrease
- 2 foot decrease
- 1 foot decrease
- No change
- 1 foot increase
- 2 foot increase
- 3+ foot increase

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Areas of Mitigation Interest – Identifying Actions

Areas of Mitigation Interest - DRAFT
Ocean County, New Jersey



Legend

- Areas of Significant Erosion
- At Risk Essential Facilities
- Dams
- Key Emergency Routes
- Other Flood Risk Areas
- Past Claims Hot Spot (PL Clusters)
- Past Claims Hot Spot (SRL)
- Stream Flow Pinch Point
- Riverine - Effective dFIRM
- Coastal - Preliminary Work Map

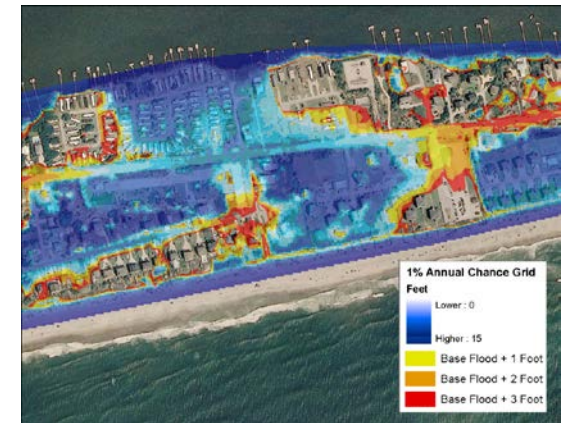
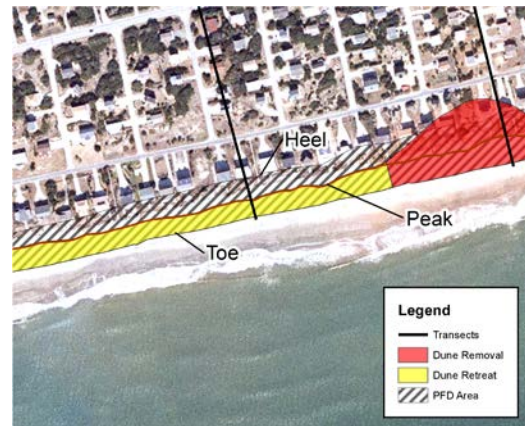
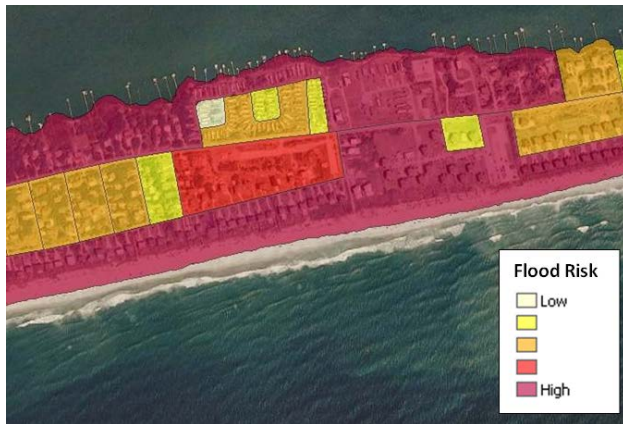


NATIONAL FLOOD
INSURANCE PROGRAM
AOMI MAP

VERSION NUMBER
RELEASE DATE
9/25/2013

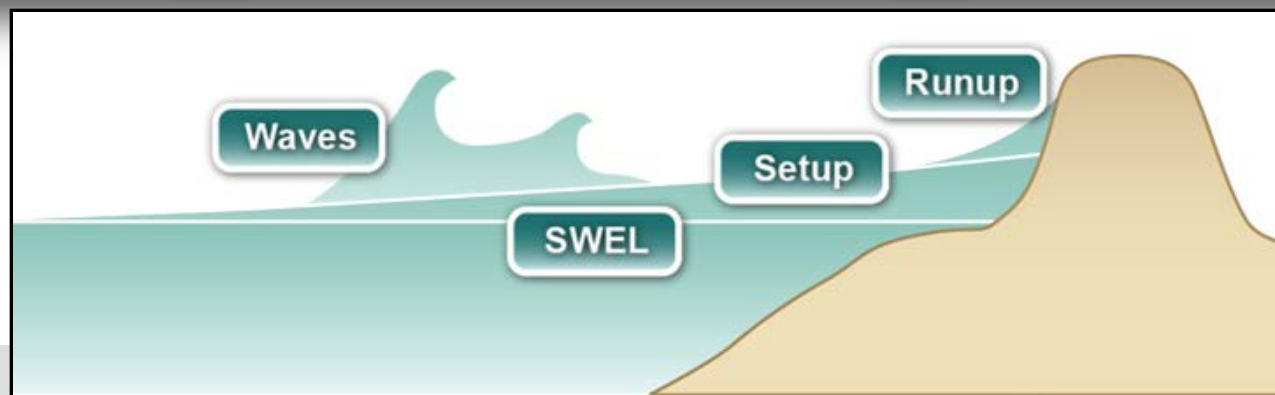
Non-Regulatory Coastal Flood Risk Products and Datasets

- **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

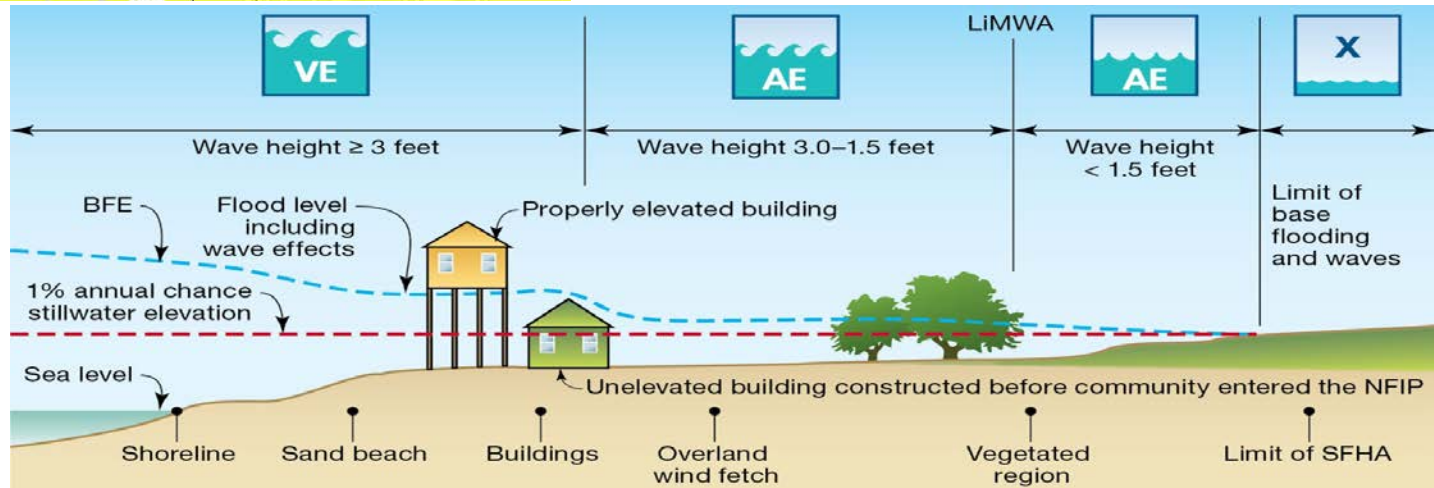
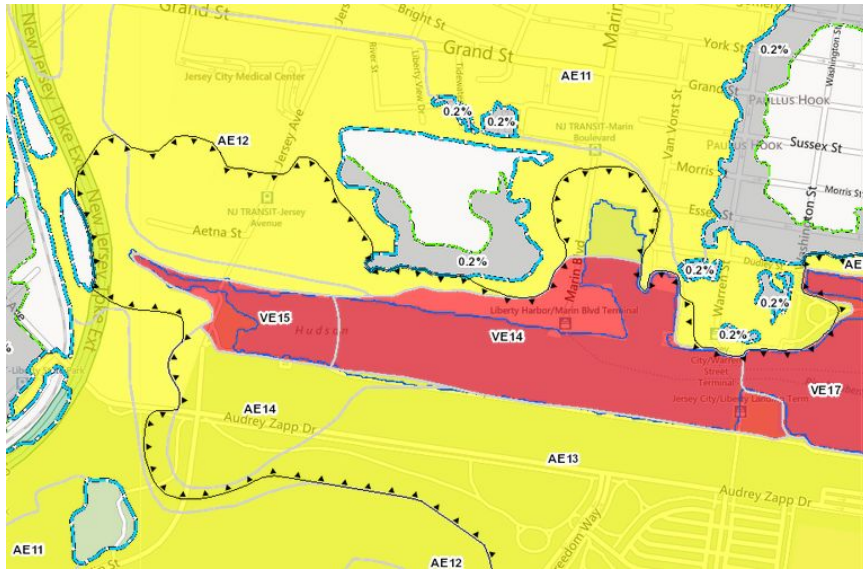


Effective vs. New Coastal Study

Coastal Study Component	Effective Study (2006)	New Study (2013)
Topographic data	1970s and 1980s	2010 LiDAR
SWELs	1970s and 1980s Borough of Bayhead – 1990s	2010 FEMA study
Modeled transects	88	560
Wave setup	No	Yes
Wave runup	Yes	Yes
LiMWA	No	Yes



Mapping



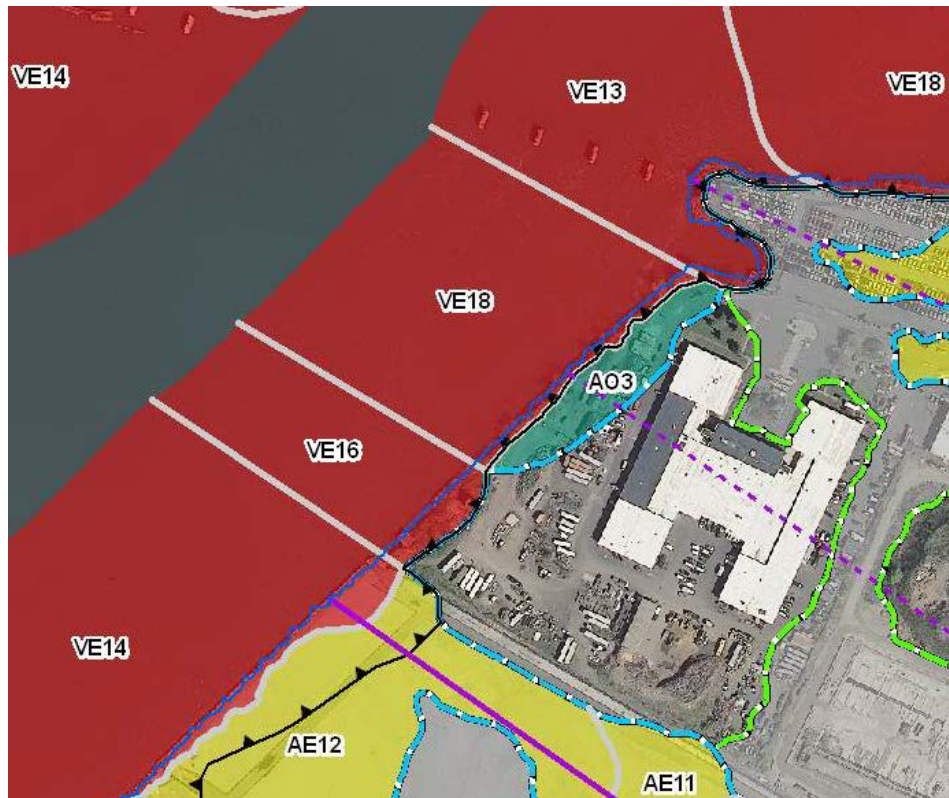
Wave Runup

- 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

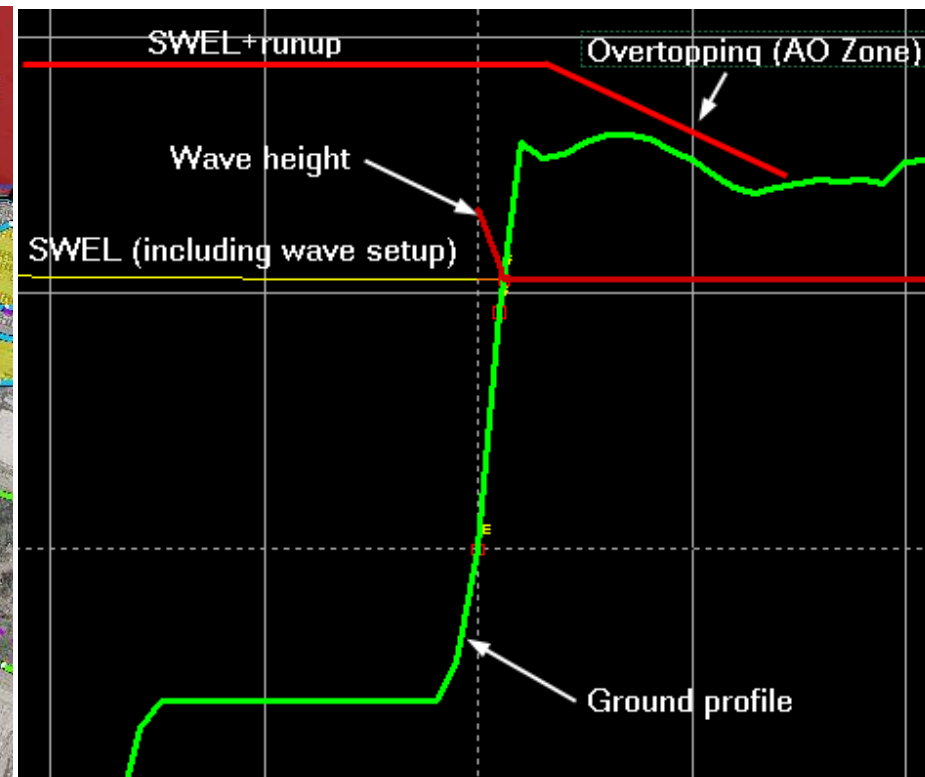


Wave Runup

How runup is mapped?



Profile view of Transect



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

Ocean County, NJ
Preliminary Work Map



Flood Hazard Information

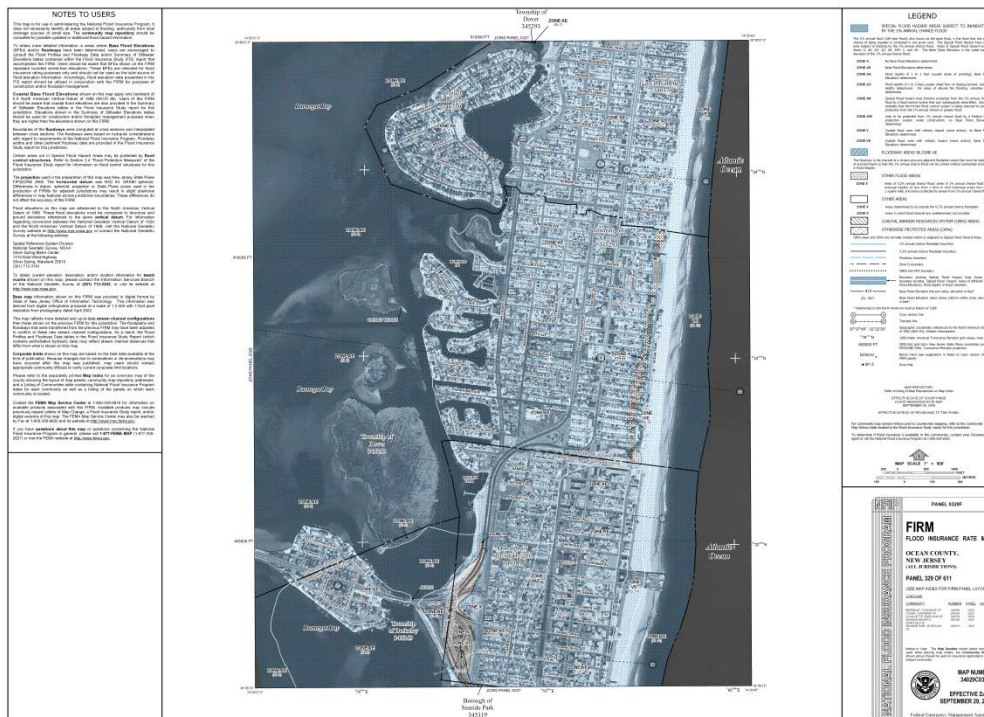
- 0.2% Annual Chance Boundary
- 1% Annual Chance Boundary
- Outer Line / PFD Line
- LMMA
- Transect Station
- AE
- VE
- AO
- Shaded X (0.2% Floodplain)
- Hurricane Sandy High Water Mark (HWM)
- Elevation information is provided on base LULUs
- High water marks are provided for reference to a historical storm event. They are not intended to be used for validation of the coastal mapping and are not expected to match the coastal DFEs.

Panel 0329

This preliminary work map contains coastal flood hazard information only. Inverse flood hazard information is not included.

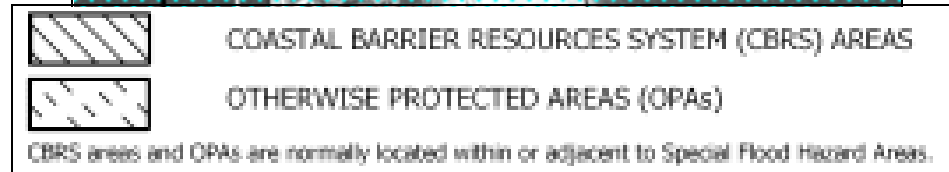
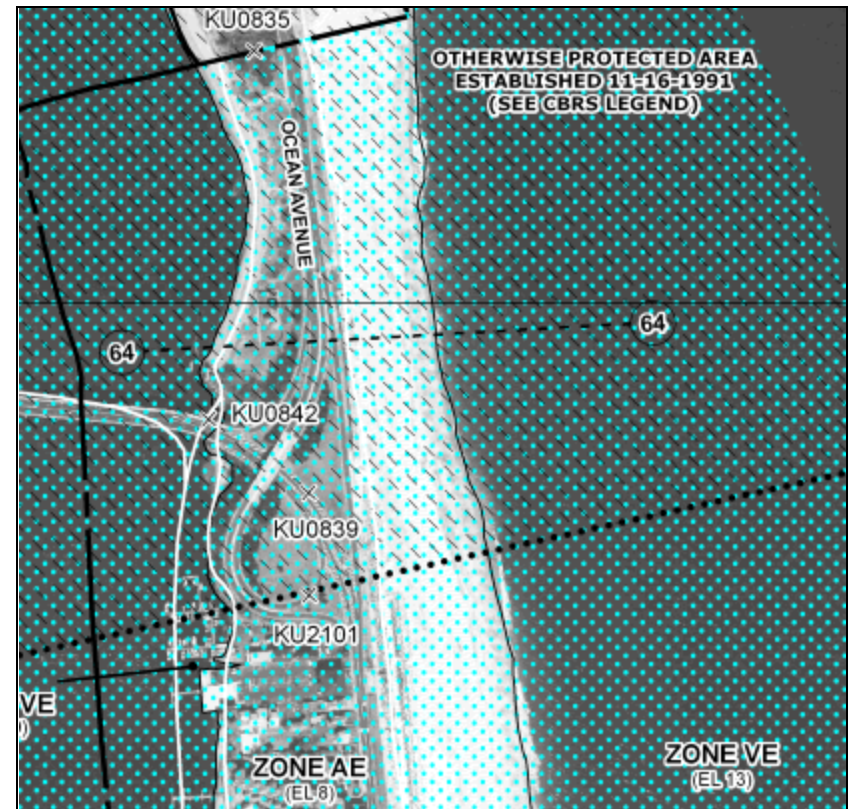
FEMA **RAMP**
Risk Assessment, Mapping, and Planning Partners

Preliminary FIRM



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



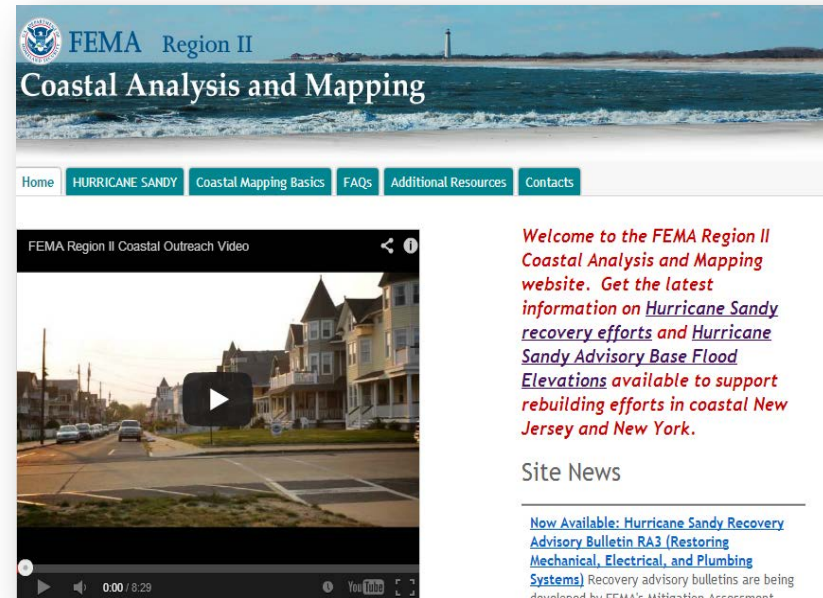
Risk Communications

- **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

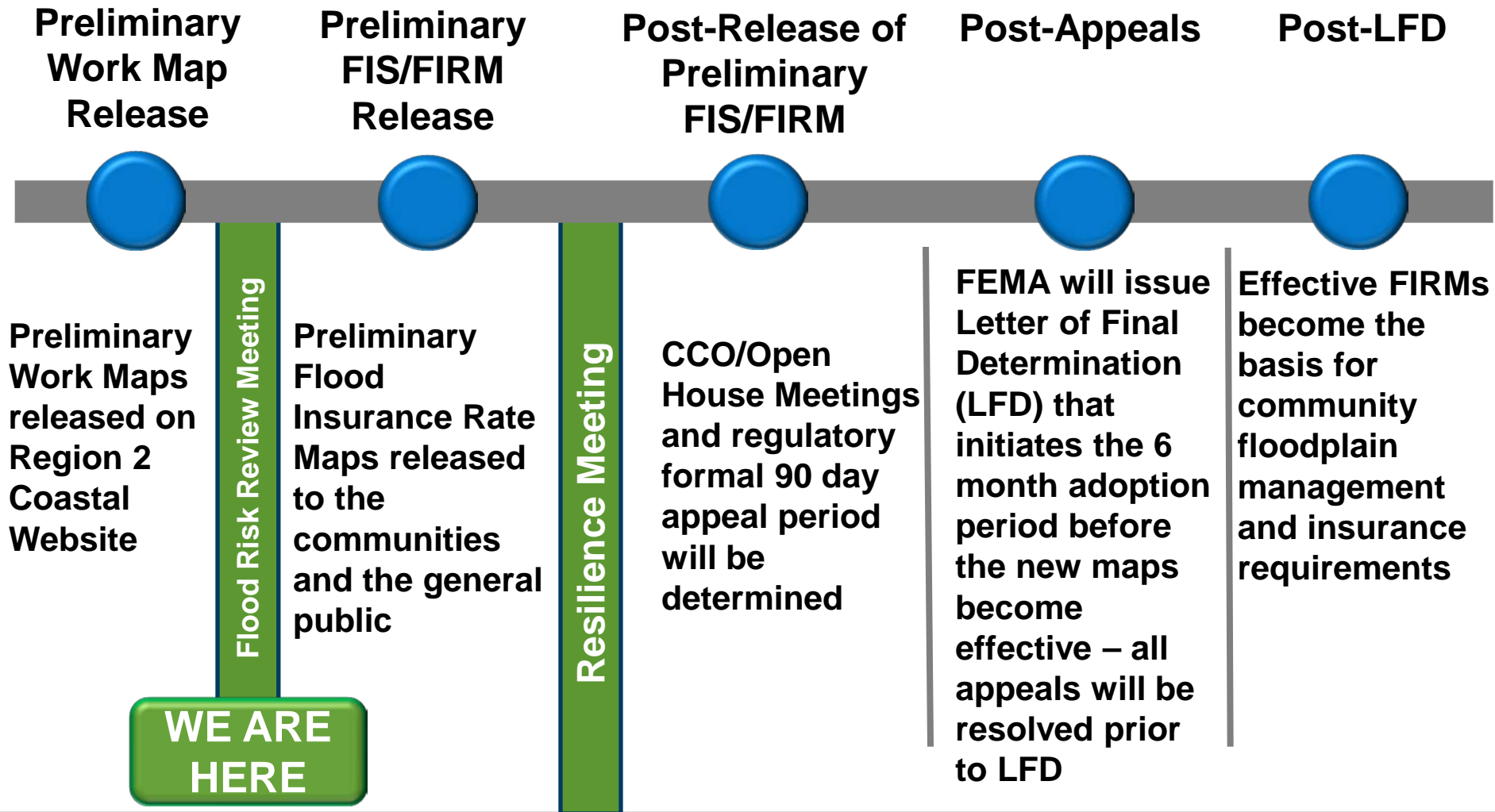
- Visit our Website:
www.region2coastal.com
- Outreach factsheets
- Frequently Asked Questions
- Coastal Risk Educational Videos
- Best Available Data (Preliminary Work Maps)
- Non-Regulatory Products and Datasets



Timeline for Ocean County – Past

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

Timeline for Ocean 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.

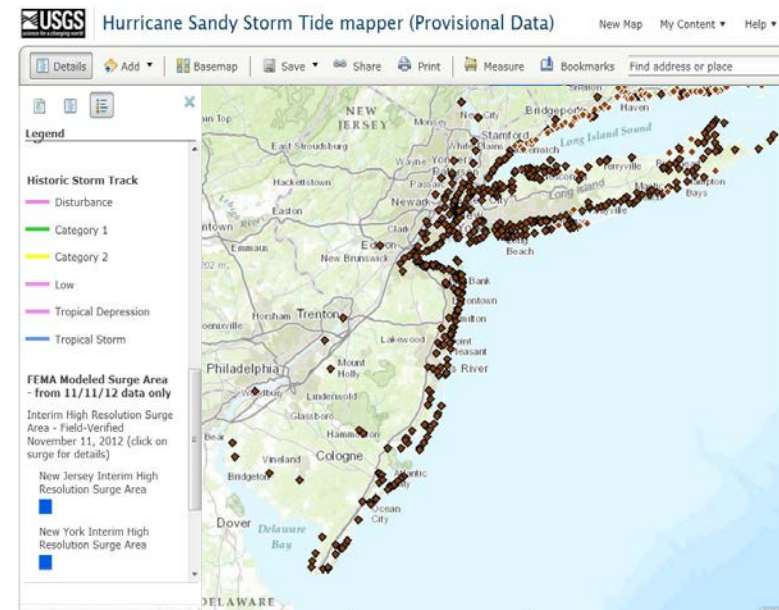


Rapid deployment gages

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**
 - Point Pleasant Beach & Little Egg Harbor & Mantoloking
- **CSLF & Depth Grids**
 - Lavellette & Stafford Twp & Beach Haven
- **AOMI & Hazard Mitigation Planning and Actions**
 - Toms River & Brick & Long Beach Twp & Seaside Heights
- **State**
 - Governor's Office & Bay Head & Jackson Twp & Pine Beach
- **USACE & USGS**
 - Ocean County & Ship Bottom & Seaside Park

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



FEMA