



FEMA



Atlantic County, NJ Coastal Hazard Analysis Flood Risk Review Meeting

November 13, 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



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

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_FIRM
- ☑ L_Riv_Model
- ☑ L_Stn_Start
- ☑ L_Vtr_Nm
- ☑ S_Bfe
- ☑ S_DOQ_Index
- ☑ S_Firm_Pan
- ☑ S_Gen_Struct
- ☑ S_Label_Ld
- ☑ S_Label_Pt
- ☑ S_LOMR
- ☑ S_Perm_Bmk
- ☑ S_Qued
- ☑ S_Riv_Mrk
- ☑ S_Tnsport_Ar

Flood Risk Database

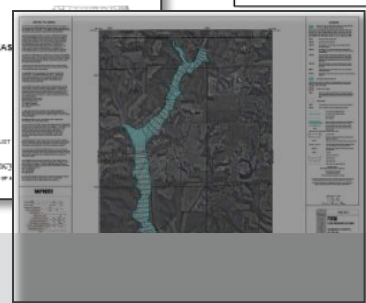
- ☑ Community_Panel_Info
- ☑ L_Comm_Info
- ☑ L_MT1_LOMC
- ☑ L_Pan_Revis
- ☑ L_Pol_FIRM
- ☑ L_Riv_Model
- ☑ L_Stn_Start
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FLOOD INSURANCE STUDY

FLOOD COUNTY, USA AND INCORPORATED AREAS

August 2007

Federal Emergency Management Agency



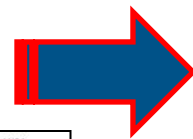
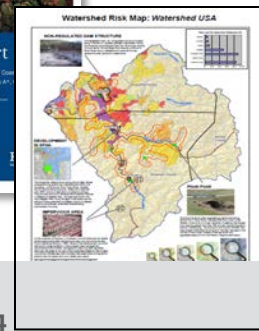
Flood Risk Report

The project area includes: Incorporated USA, Village of Ocean of Ocean, City of Roselle, Town of Woodbury, County of Ocean County, NJ

Report Number: 005

08/10/2011

FEMA



Multi-Jurisdictional Hazard Mitigation Plan
Atlantic County, NJ

— Draft —

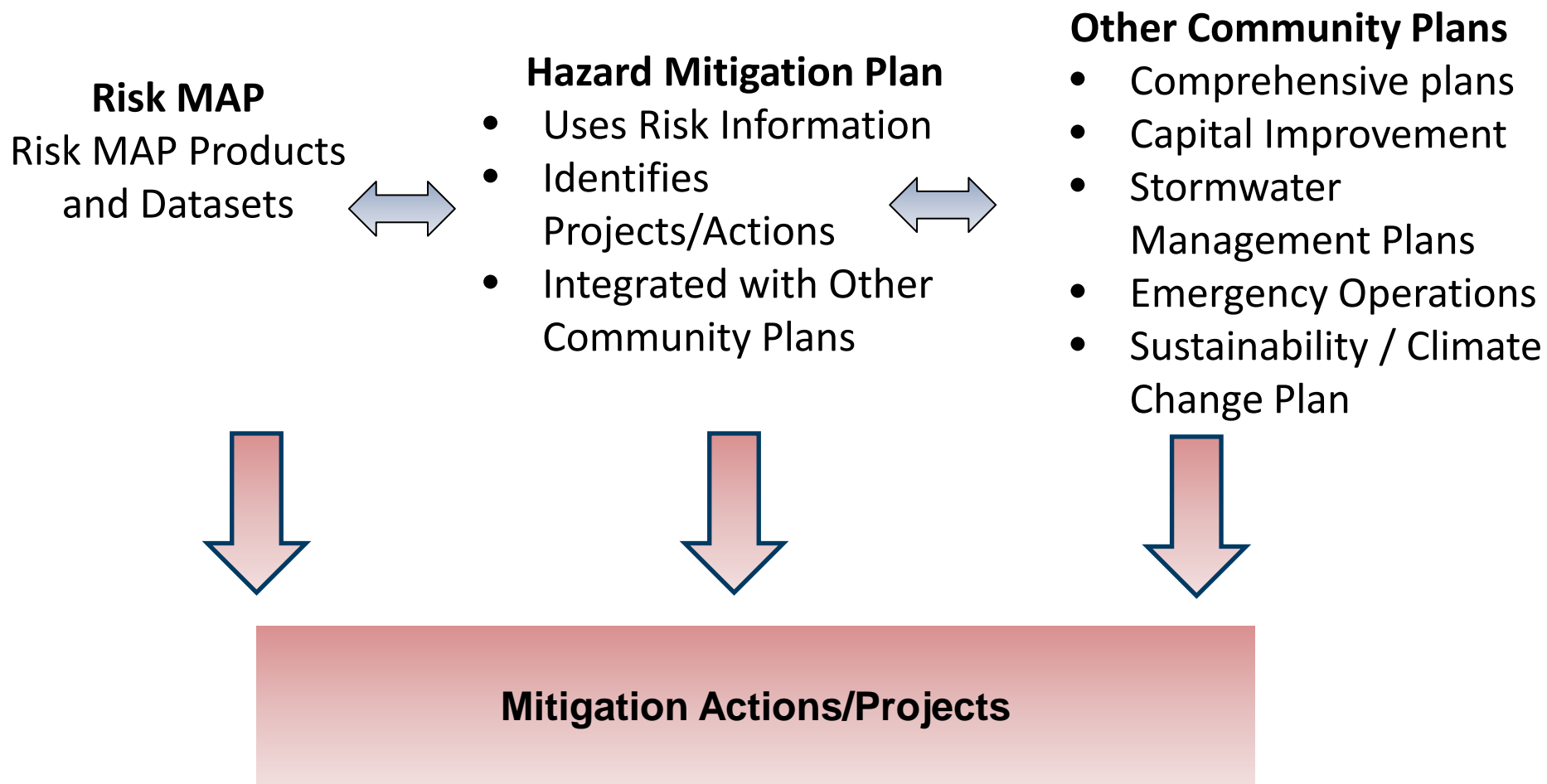
Prepared by
Atlantic County
Office of Emergency Preparedness
5033 English Creek Avenue
Egg Harbor Township, New Jersey 08234

June 2009

Prepared by
URS
201 Willowbrook Boulevard, 2nd Floor
Wayne, New Jersey 07470-7005

Approved: September 29, 2010
Expires: September 29, 2015

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 **mitigation projects**?
- **Review draft Areas of Mitigation Interest and provide feedback** to NJDEP and FEMA representatives during the working session



FEMA Workshops and Technical Assistance

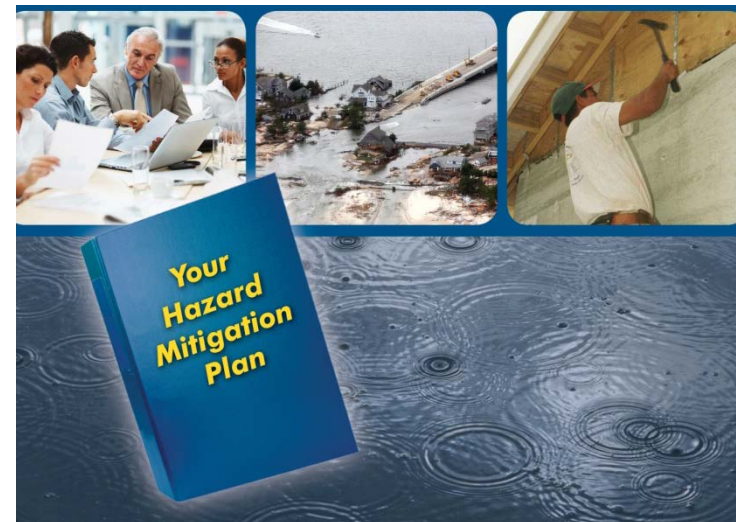
A community's Hazard Mitigation Plan is only as good as its **mitigation strategy**.

Mitigation Strategy Workshop:

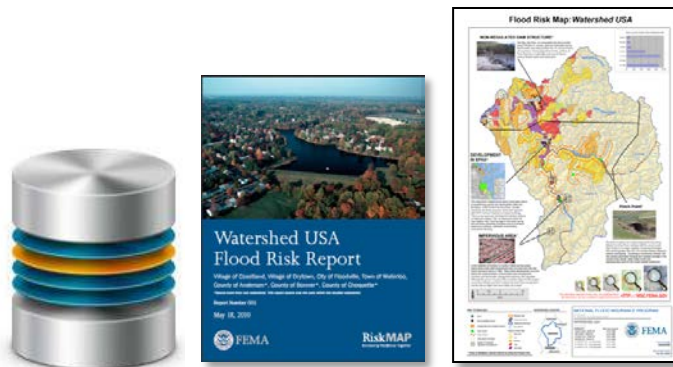
- Develop actions
- Build a strategy for successful implementation
- Coordination
- Link your natural hazard risk, action and implementation
- Use FEMA worksheets and examples
- Communicate directly with FEMA planners

Technical Assistance:

- To help communities integrate non regulatory products into the current hazard mitigation plan



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

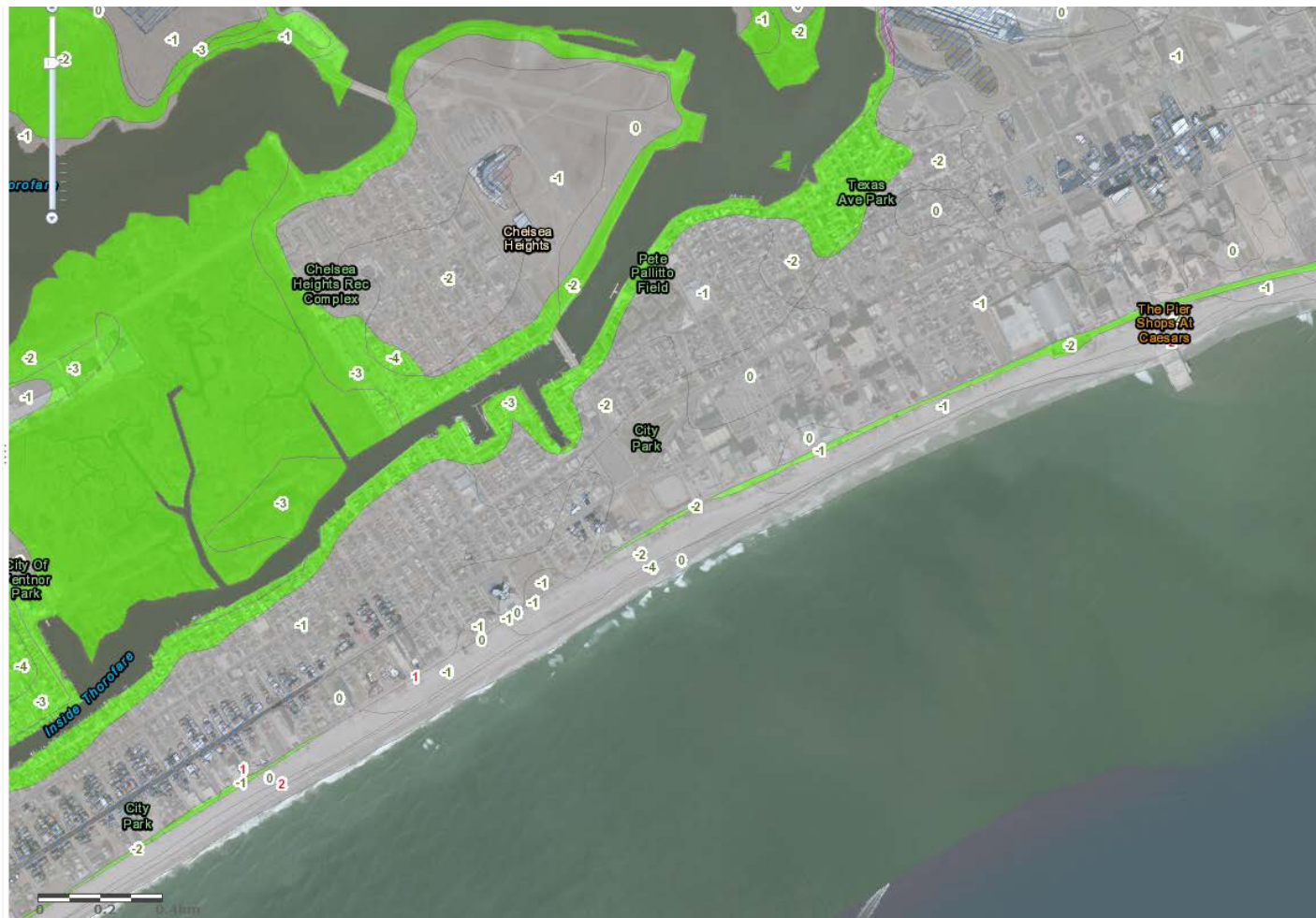
Legend

Effective_ABFE_Prelim_Change

ABFE to Prelim

ABFE to Prelim2 Zone Change

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



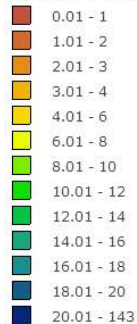
Feri.com - Help - Terms of Use

Depth Grids – Identifying Actions

Legend

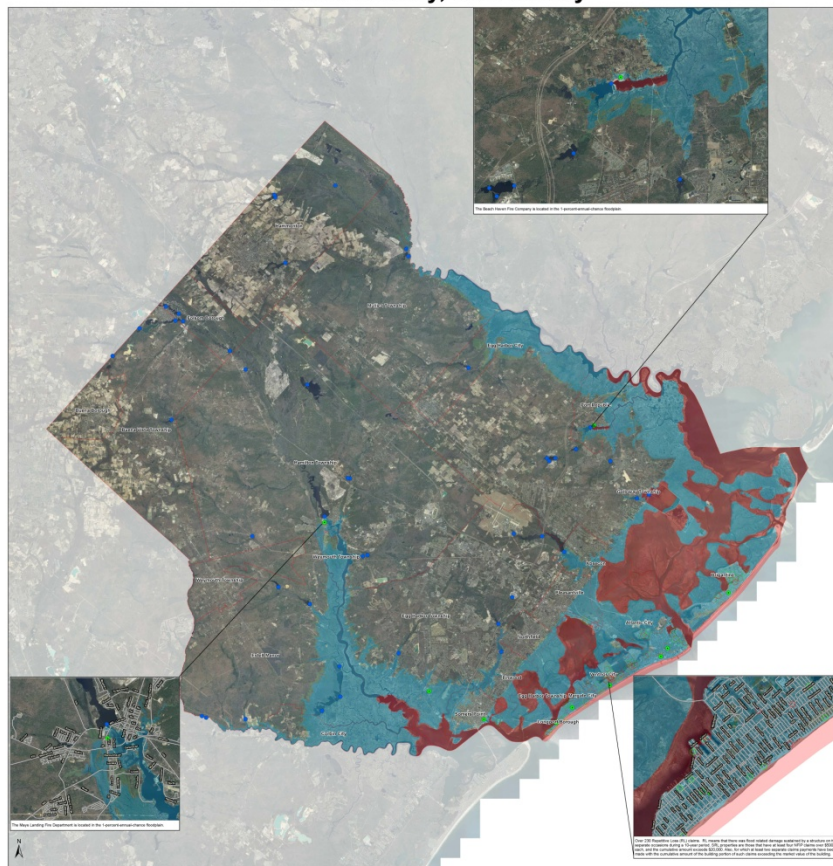
Depth_Grids_AtlanticCountyNJ

Atlantic 100-Yr Depth Grid (feet)



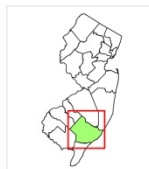
Areas of Mitigation Interest – Identifying Actions

Areas of Mitigation Interest - DRAFT Atlantic County, New Jersey



Legend

- At Risk Essential Facilities
- Dam
- Past Claims Hot Spot (SRL)
- Past Claims Hot Spot (RL Cluster)
- AE
- Shaded X
- VE
- Municipality



NATIONAL FLOOD INSURANCE PROGRAM

AOMI MAP

VERSION NUMBER

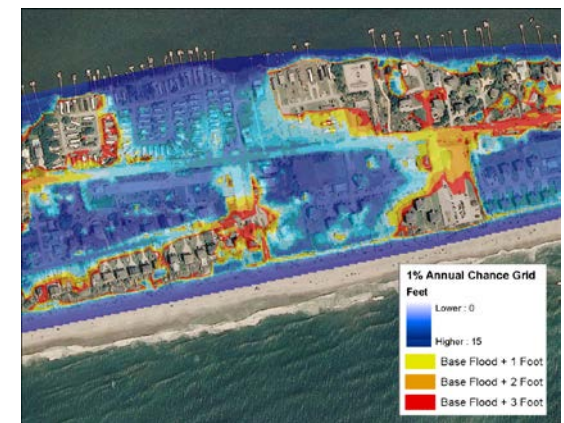
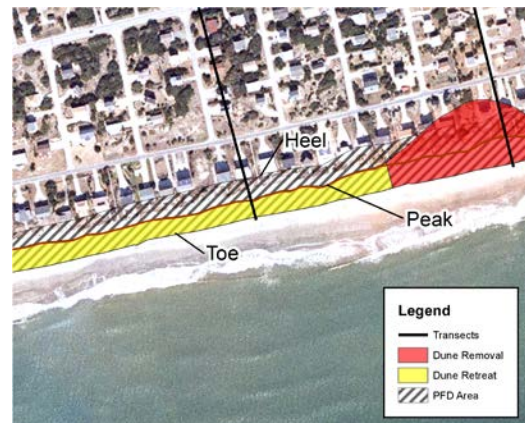
1.1.1.1

RELEASE DATE

11/13/2013

Non-Regulatory Coastal Flood Risk Products and Datasets

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



Draft Flood Risk Tools

- **Region2coastal.com**

The screenshot shows the website's navigation bar with links for Home, Hurricane Sandy, Coastal Flood Study, Coastal Mapping Basics, FAQs, Additional Resources, and Contacts. The 'Coastal Flood Study' menu is open, listing options like 'Coastal Flood Study Overview', 'View Best Available Flood Hazard Data', 'What is My BFE? Address Lookup Tool (Formerly What is My ABFE?)', 'Flood Risk Tools', 'Understanding Vertical Datums', and 'Presentations'. A hand cursor is over the 'Flood Risk Tools' link. Below the menu, the 'Flood Risk Tools Communities' section is visible, featuring a paragraph about updated Flood Insurance Study (FIS) reports, a video player, a 'Draft USA Risk Report' document, and a 'Flood Risk Map - Watershed USA' map. The text below the menu discusses the New Jersey Department of Environmental Protection's role in providing tools for flood risk planning.

Flood Risk Tools Communities

Besides the updated Flood Insurance Study (FIS) reports, the coastal flood study update from the New Jersey Department of Environmental Protection, is also providing communities with additional tools they can use to better understand and plan for flood risk.

What are Flood Risk Tools and How Can They be Used?

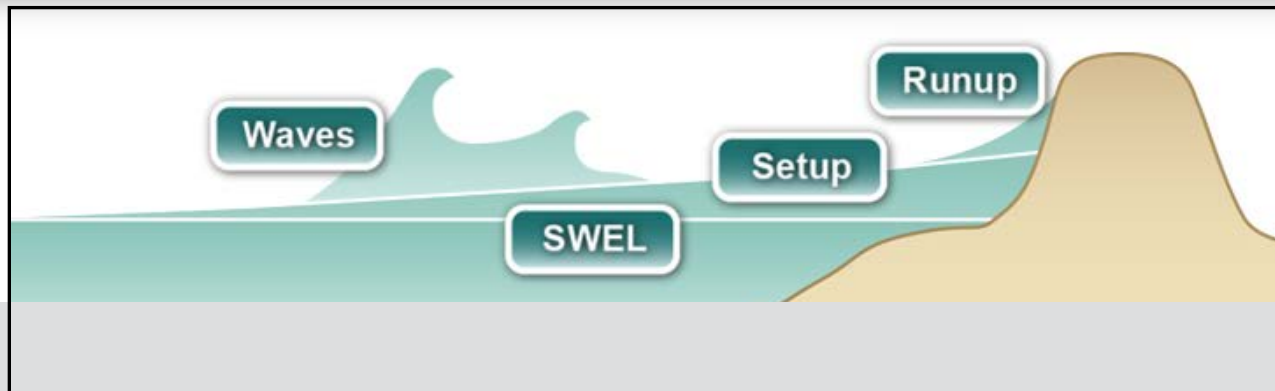
Flood risk tools can help community officials in planning efforts to reduce (or “mitigate”) flood risk, communicate with the public, and create a dialogue with neighboring communities about ways to reduce future flood risk. There are different types of flood risk tools (also referred to as Risk MAP non-regulatory products), including GIS datasets and maps as well as supporting reports. Each is described on the [Flood Risk Tools Descriptions page](#). These tools are not directly tied to regulatory development and insurance requirements of the National Flood Insurance Program like the FIRM and FIS report are but are nonetheless important resources to support community planning efforts.

When will the Flood Risk Tools be Released?

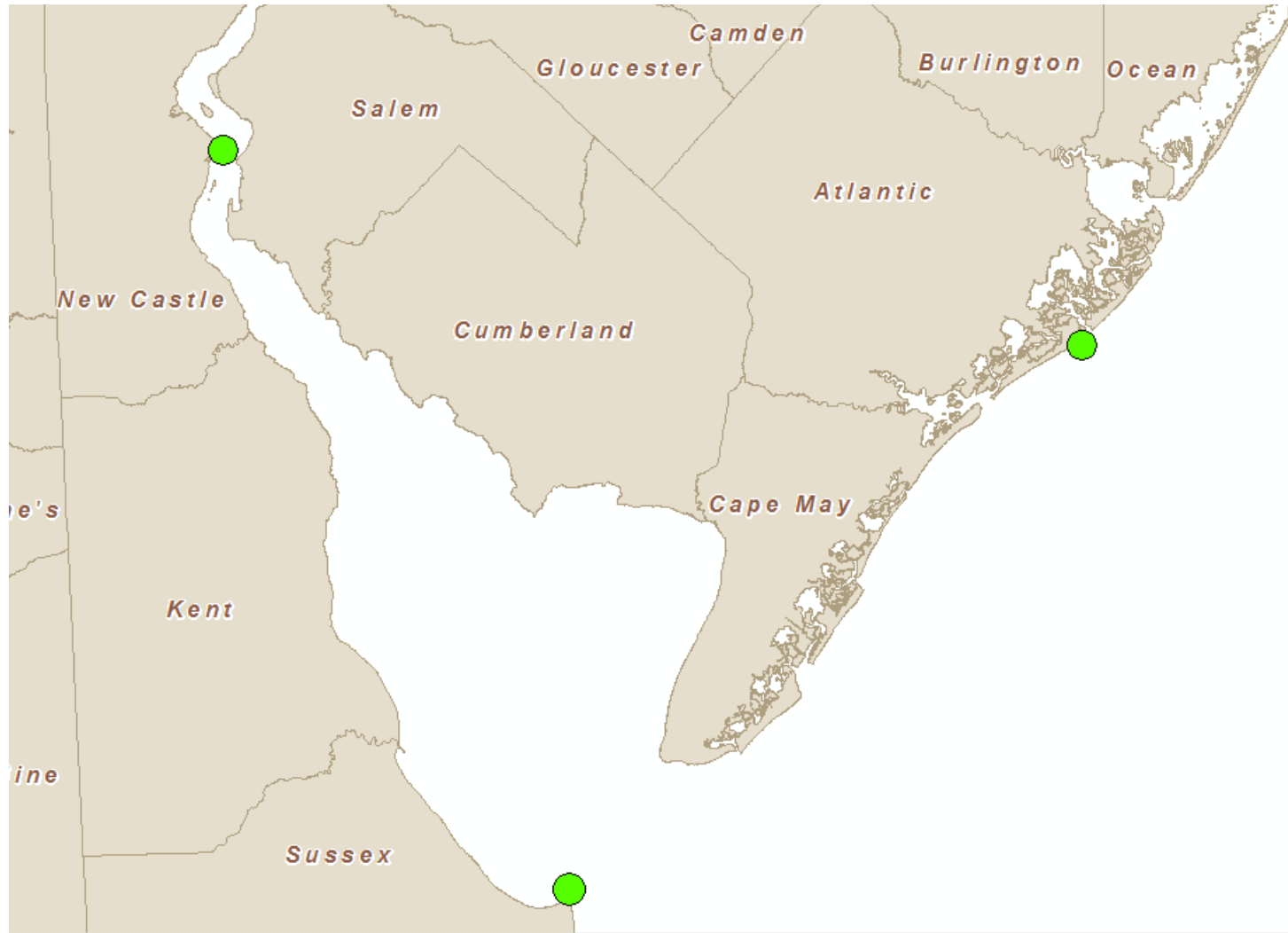
The flood risk tools are in the process of being released on a rolling basis by county. **Draft** versions of certain tools will initially be released at the time of [Flood Risk Review](#) and [Flood Resilience](#) meetings for each community. Final versions of the tools will be released at the time of the [CCO meeting](#). (See graphic below).

Effective vs. New Coastal Study

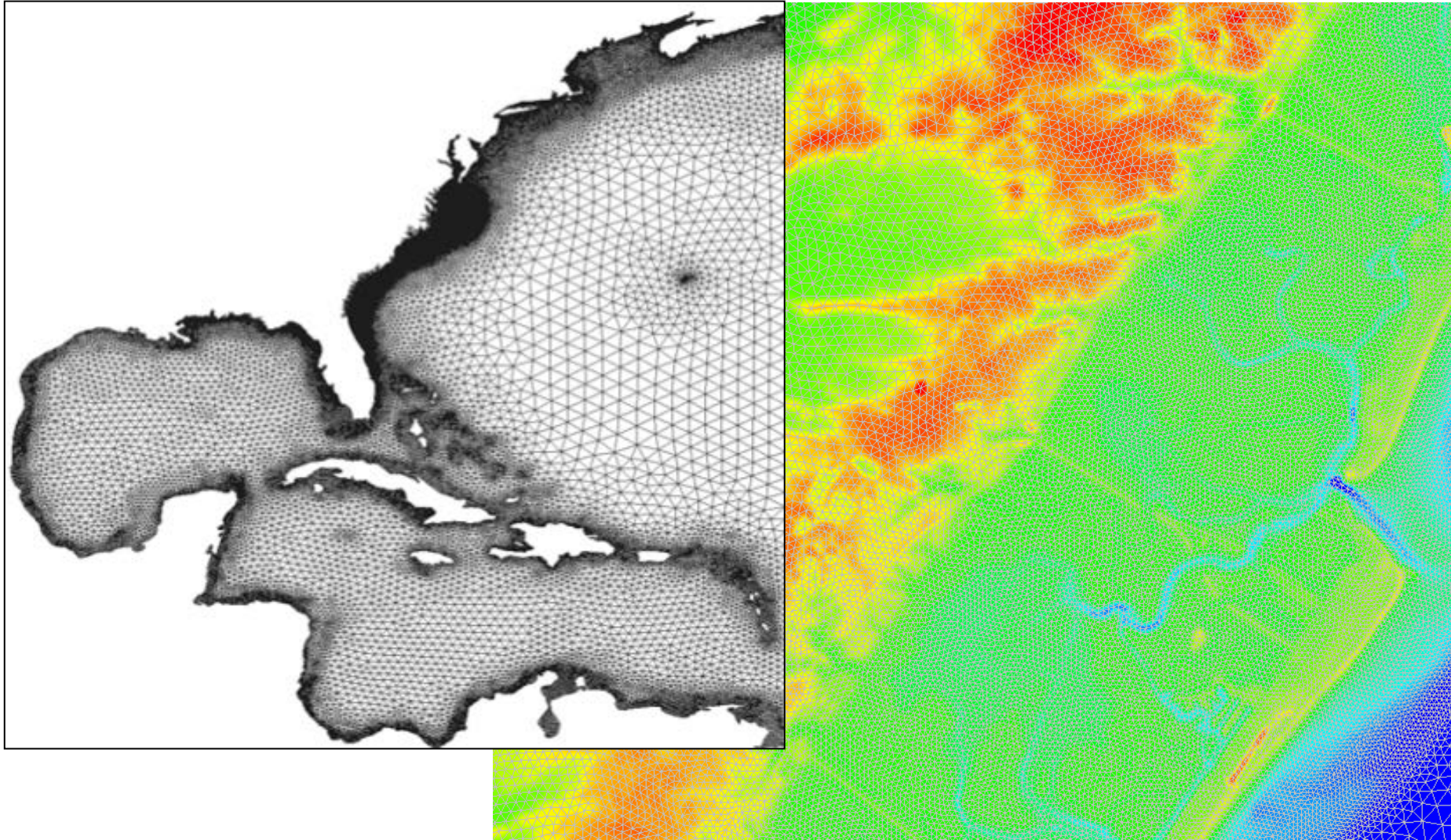
Coastal Study Component	Effective Study (1981-1999)	New Study (2013)
Topographic data	1970's to 1980's	April 2010, FEMA
SWELs	1970's to 1980's	2012 FEMA study
Modeled transects	13	135
Wave setup	No	Yes
Wave runup	No	Yes
LiMWA	No	Yes



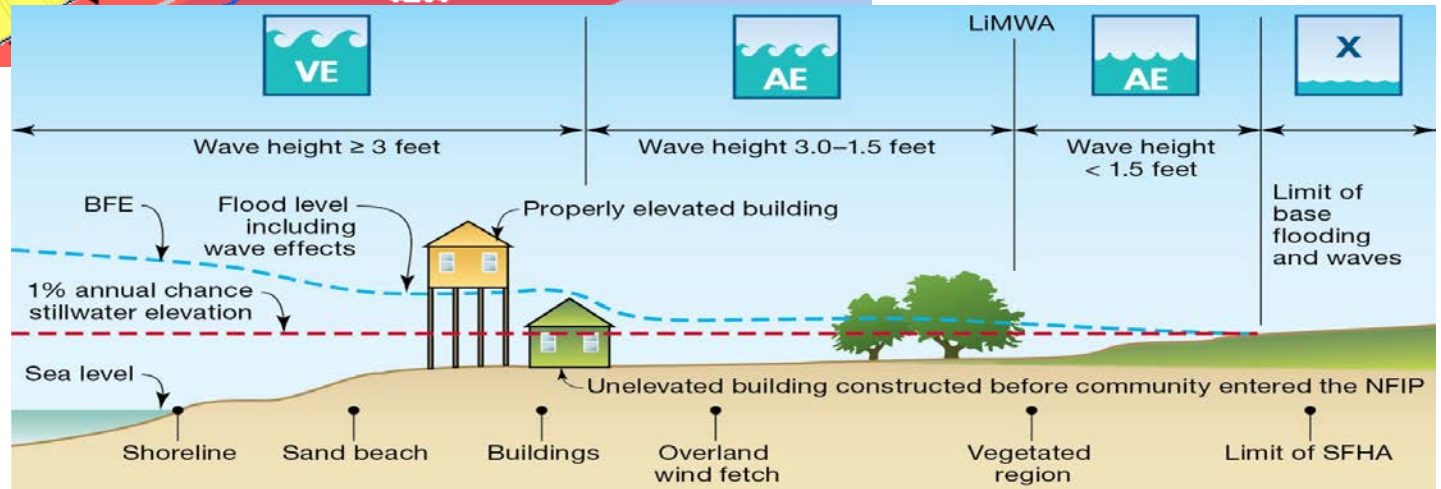
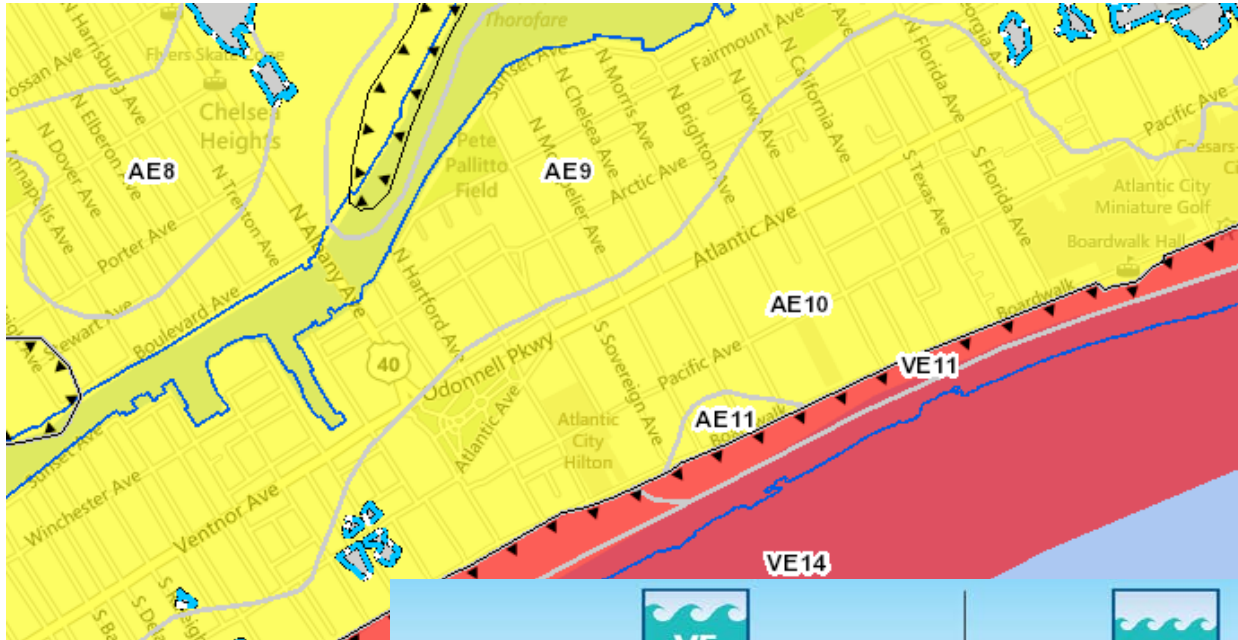
Previous Flood Study



New Storm Surge Model



Mapping



Coastal Study Process



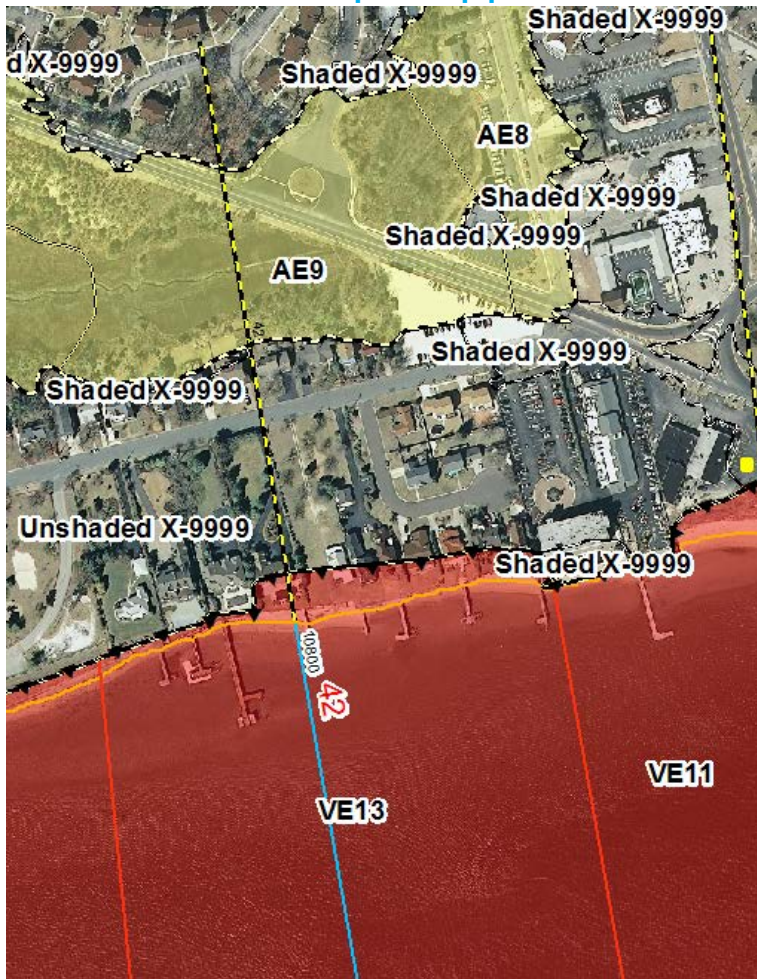
Wave Runup

- 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

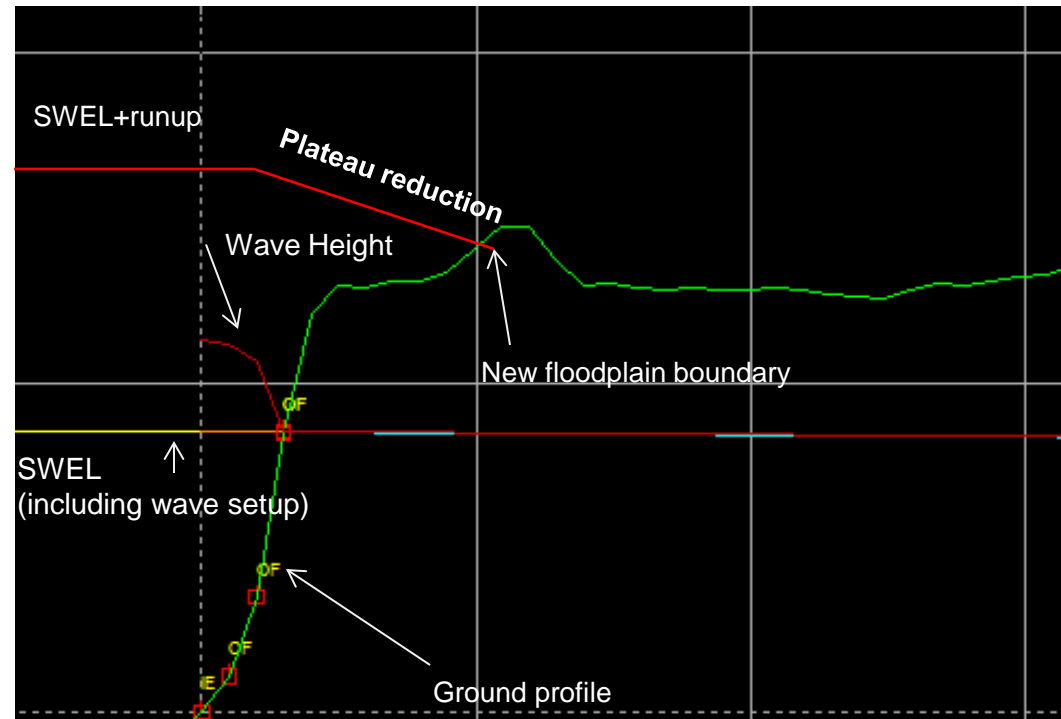


Wave Runup

How is runup mapped?

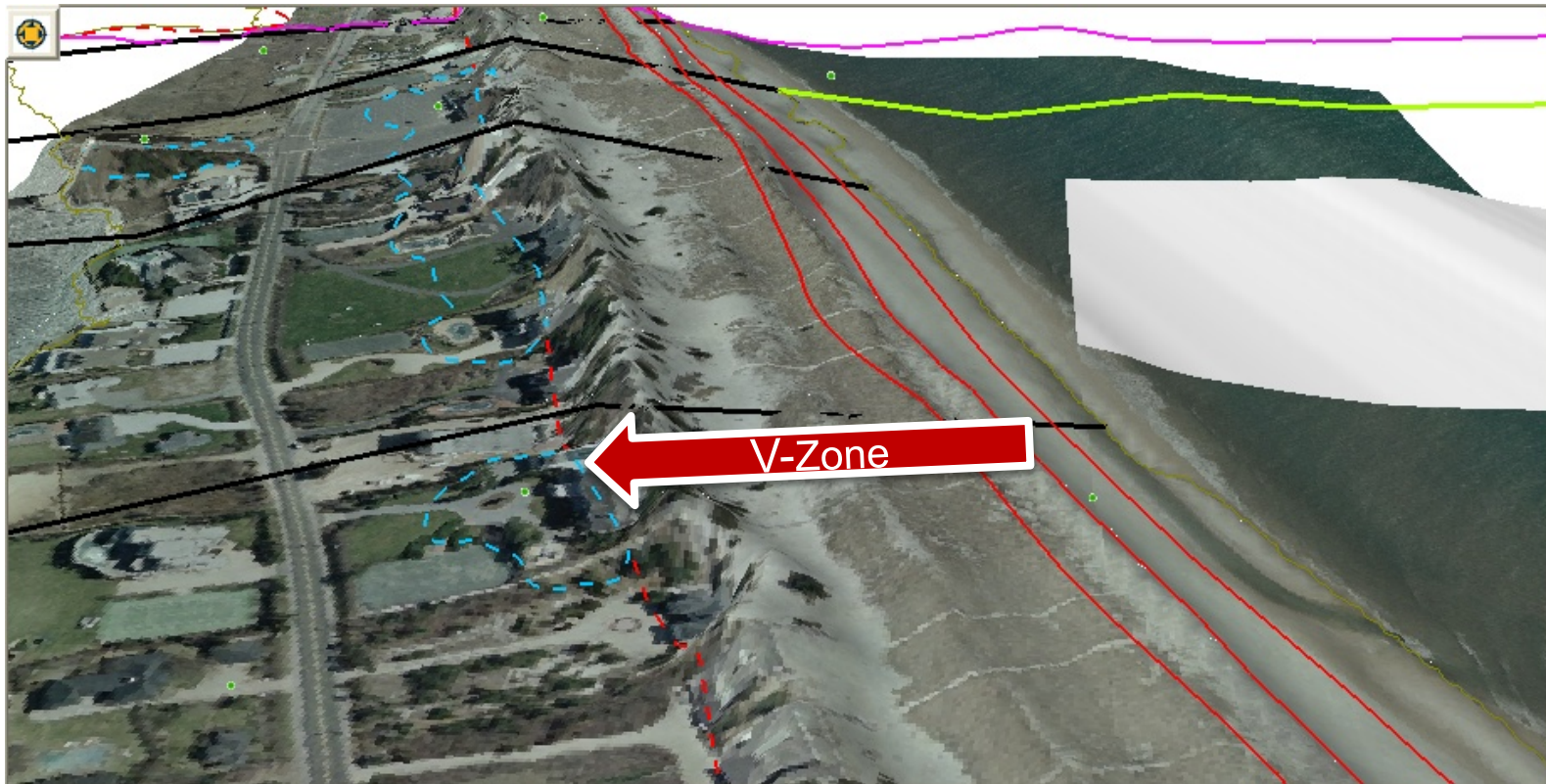


Profile view of Transect

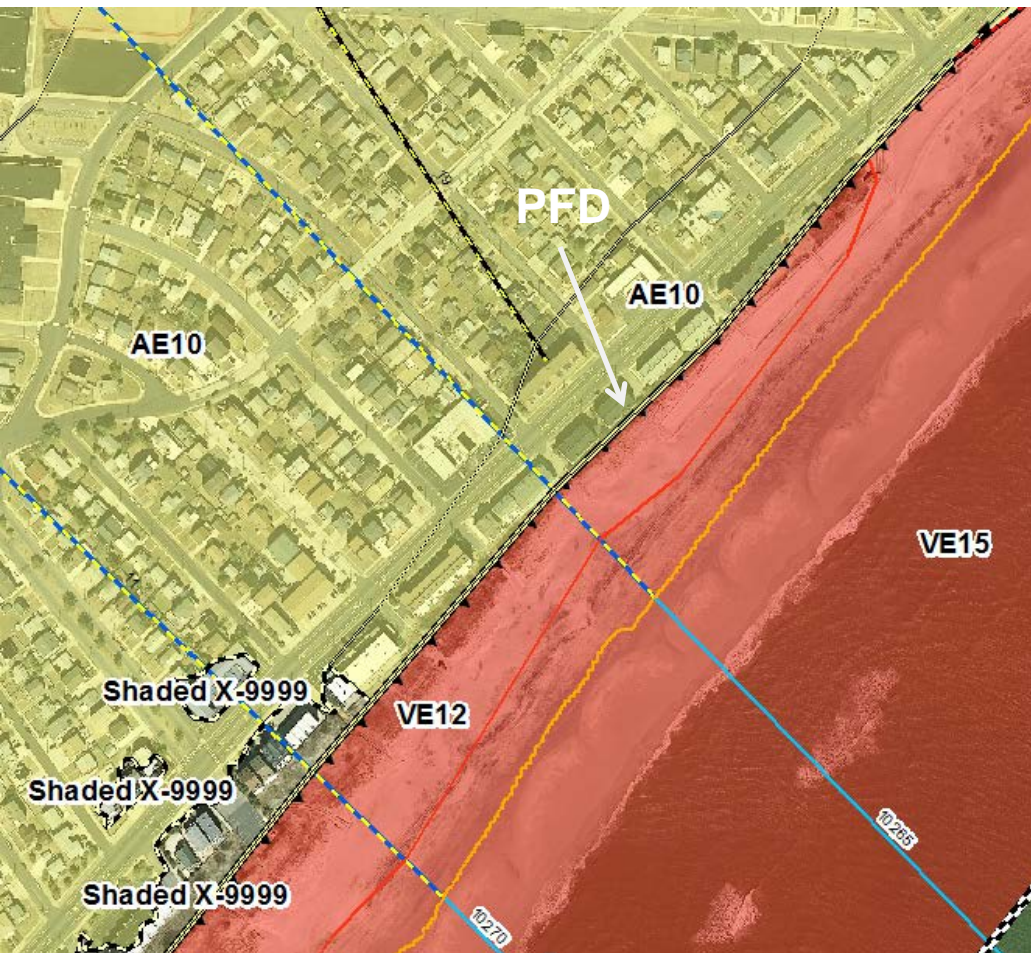


Primary Frontal Dune & VE Zones

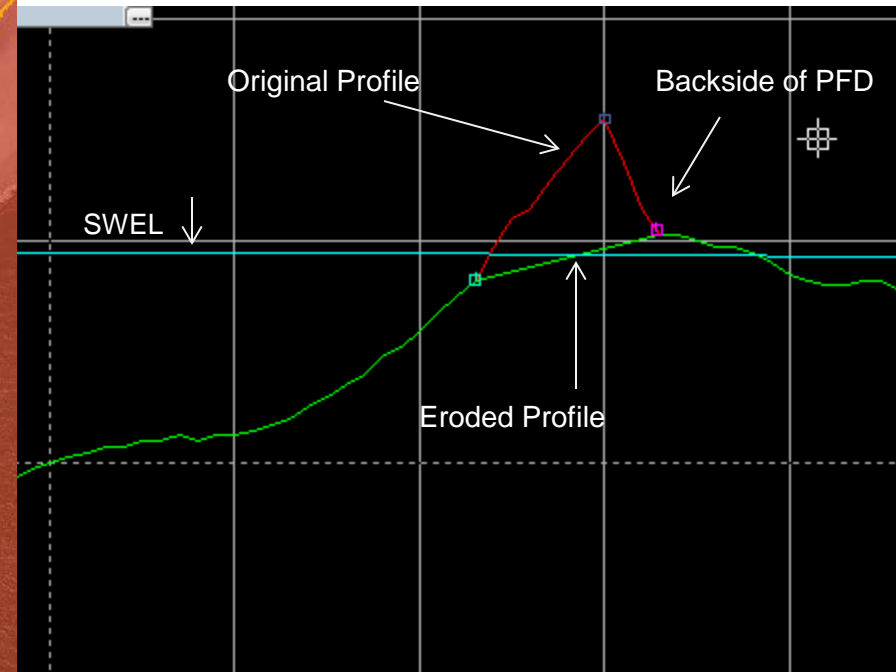
- PFD line represents the landward extension of the Zone VE coastal high hazard velocity zone.



Primary Frontal Dune



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 FIS/FIRM

Atlantic County, NJ
Preliminary Work Map



For Informational Purposes,
Not Intended for Official Use

Flood Hazard Information

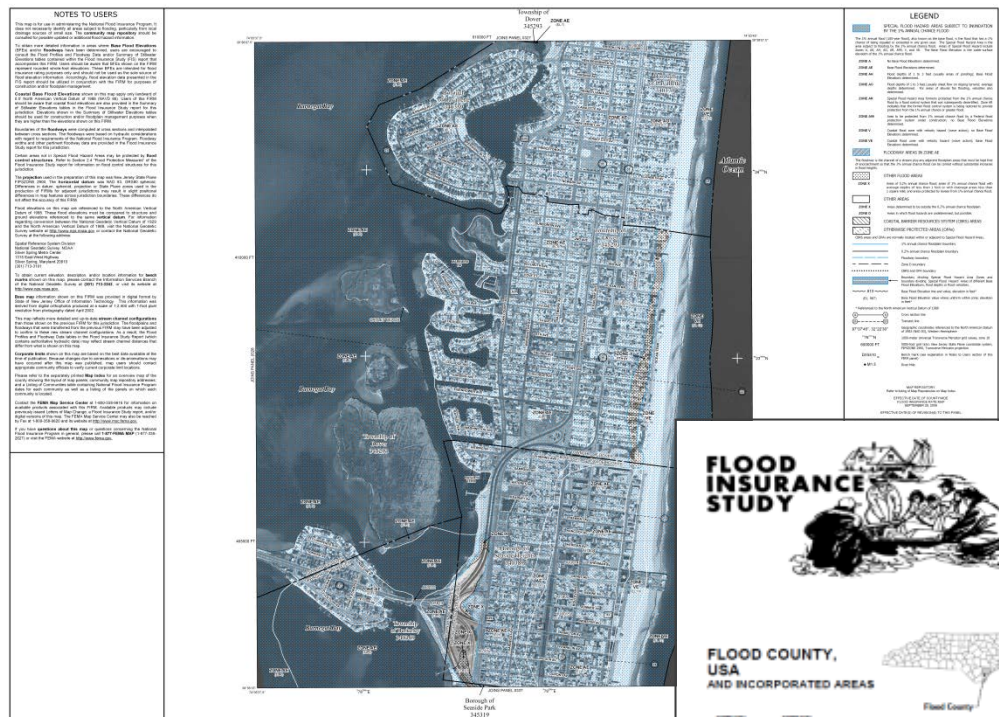
- 0.2% Annual Chance Boundary
- 1% Annual Chance Boundary
- Gutter Line
- LMWA
- AE
- VE
- AO
- Shaded X (0.2% Floodplain)
- Hurricane Sandy High Water Mark (HWM)
- Published Transacts
- Mapping Transacts
- Shoreline
- Political Boundary
- Elevation
- AE
- VE
- X

Panel 0452

This preliminary work map contains coastal flood hazard information only, riverine flood hazard information not included



Sample Preliminary FIRM & FIS



NOTES TO USERS

This map is for informational purposes only. It is not intended for official use. The community may have other flood hazard information that is more current than this map. The community may have other flood hazard information that is more current than this map. The community may have other flood hazard information that is more current than this map.

LEGEND

- 0.2% Annual Chance Flood
- 1% Annual Chance Flood
- AE Flood Hazard Area
- VE Flood Hazard Area
- AO Flood Hazard Area
- Shaded X (0.2% Floodplain)
- Hurricane Sandy High Water Mark (HWM)
- Published Transacts
- Mapping Transacts
- Shoreline
- Political Boundary
- Elevation
- AE
- VE
- X

FLOOD INSURANCE STUDY



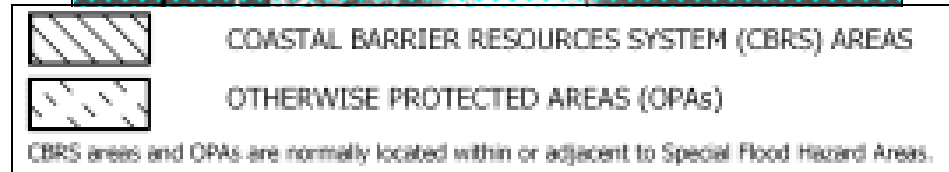
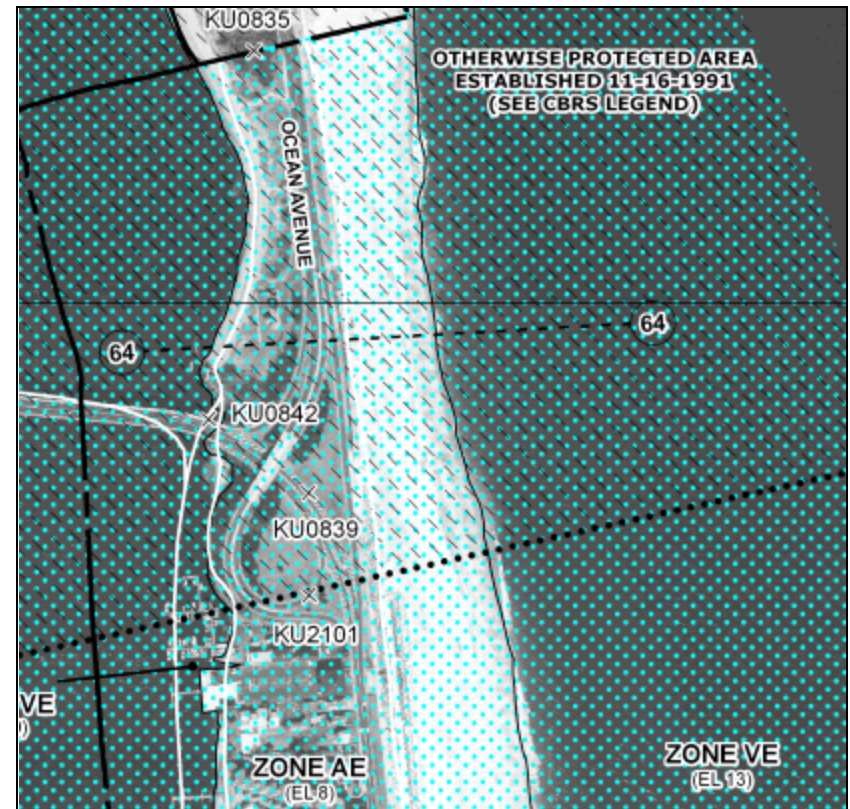
FLOOD COUNTY, USA AND INCORPORATED AREAS



AUGUST 19, 1988
Federal Emergency Management Agency
This is a sample form of a Flood Insurance Study

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



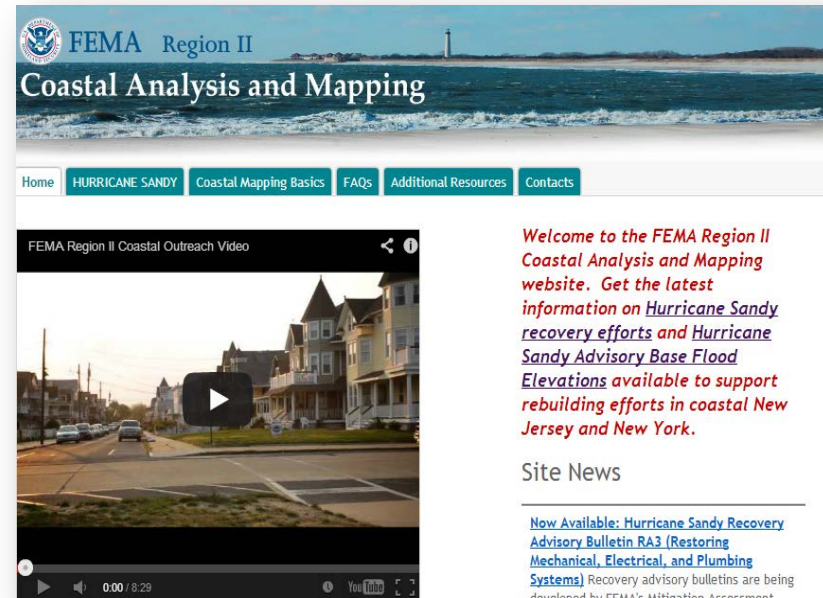
Risk Communications

- **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

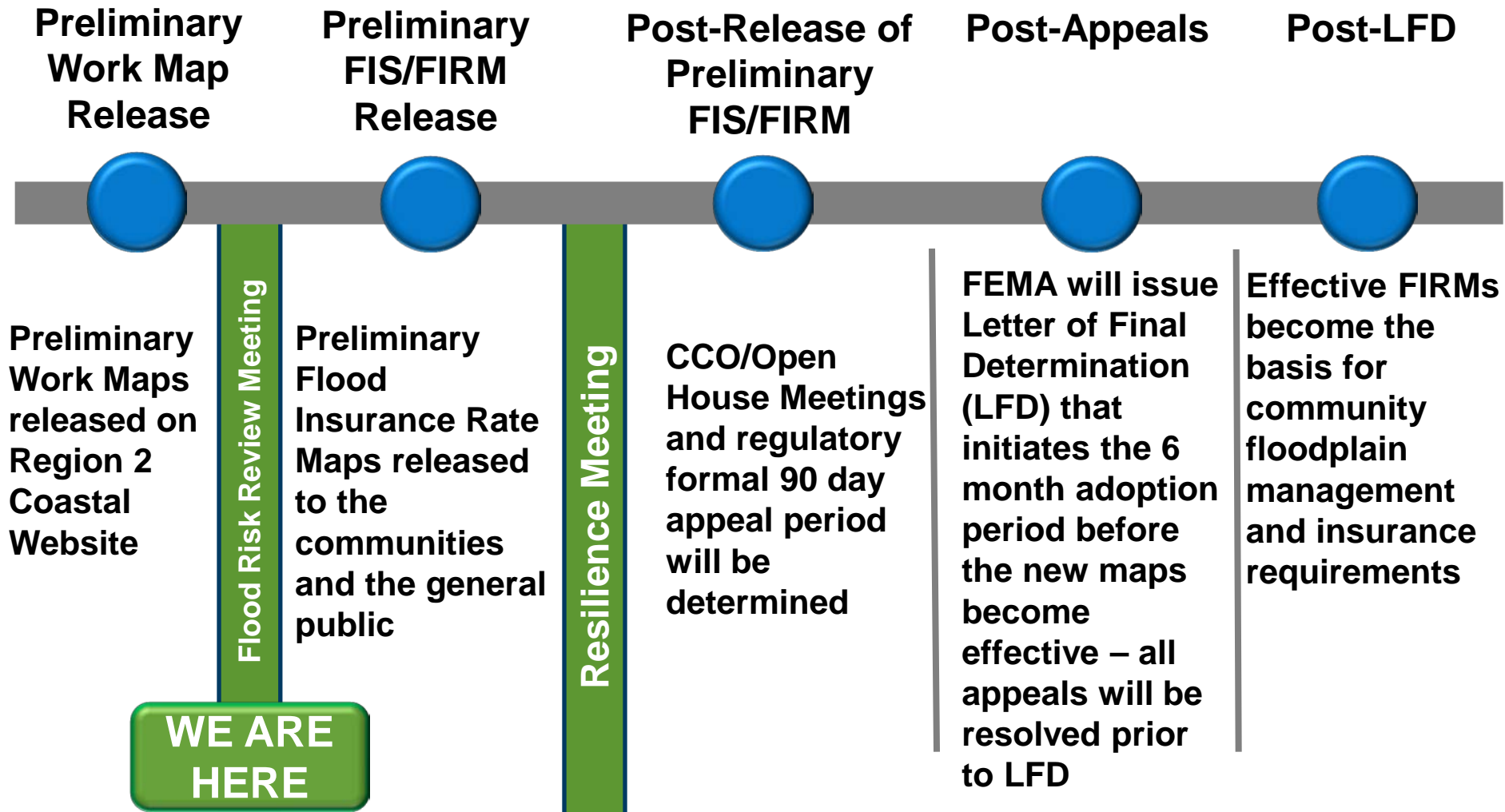
- Visit our Website:
www.region2coastal.com
- Outreach factsheets
- Frequently Asked Questions
- Coastal Risk Educational Videos
- Best Available Data (Preliminary Work Maps)
- Non-Regulatory Products and Datasets



Timeline for Atlantic County – Past

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

Timeline for Atlantic 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.

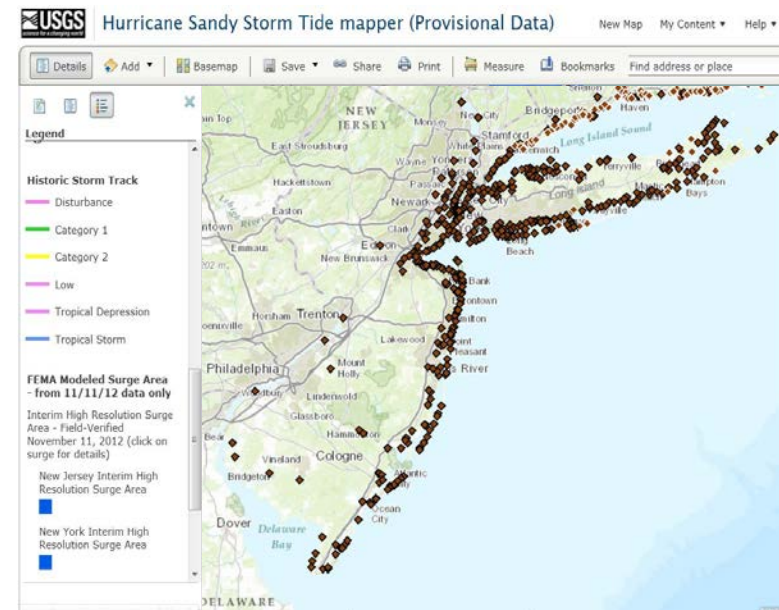


Rapid deployment gages

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**
- **Changes Since Last FIRM & Depth Grids**
- **Areas of Mitigation Interest & Hazard Mitigation Planning and Actions**
- **State**
- **USACE & USGS**

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



FEMA