



Using FEMA's Tools to Better Identify, Communicate, and Mitigate Flood Risk

Social Coast Forum 2016



FEMA

Overview

- ▶ **Overview of FEMA's National Flood Insurance Program (NFIP) and Risk Mapping, Assessment, and Planning (Risk MAP) Process**
- ▶ **Coastal Studies Initiative and Community Engagement**
- ▶ **Risk Communication and Visualization Datasets**
 - Regulatory
 - Flood Risk Datasets (Non-regulatory)
 - Non-standard Flood Risk Datasets

Risk MAP Vision

- ▶ **Develop accurate flood maps, risk assessment tools, and outreach support**
 - Beyond the basic flood hazard information on regulatory flood hazard products
- ▶ **Provide communities with flood information and tools they can use to:**
 - Enhance their mitigation plans
 - Better protect their citizens by reducing risk



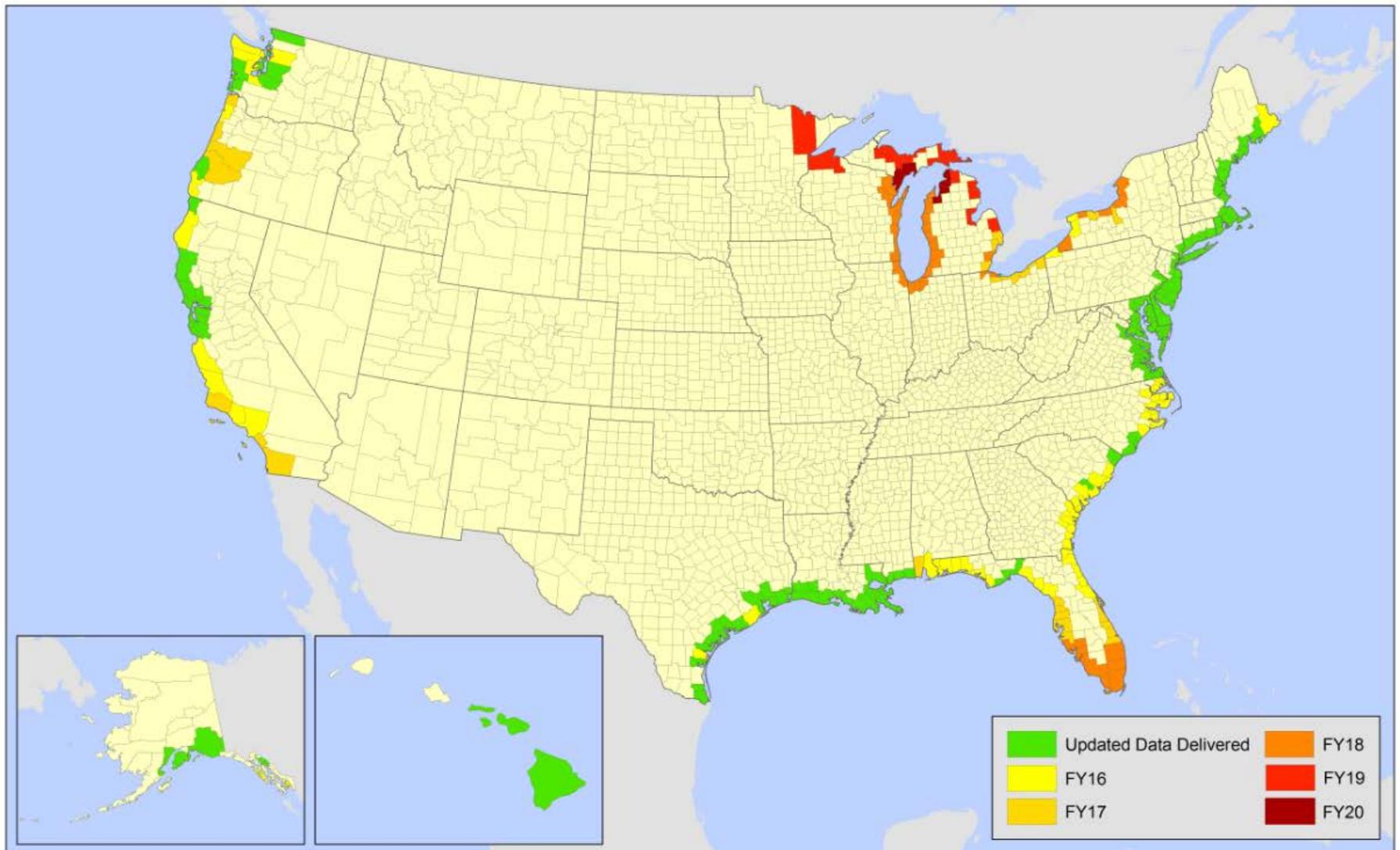
FEMA



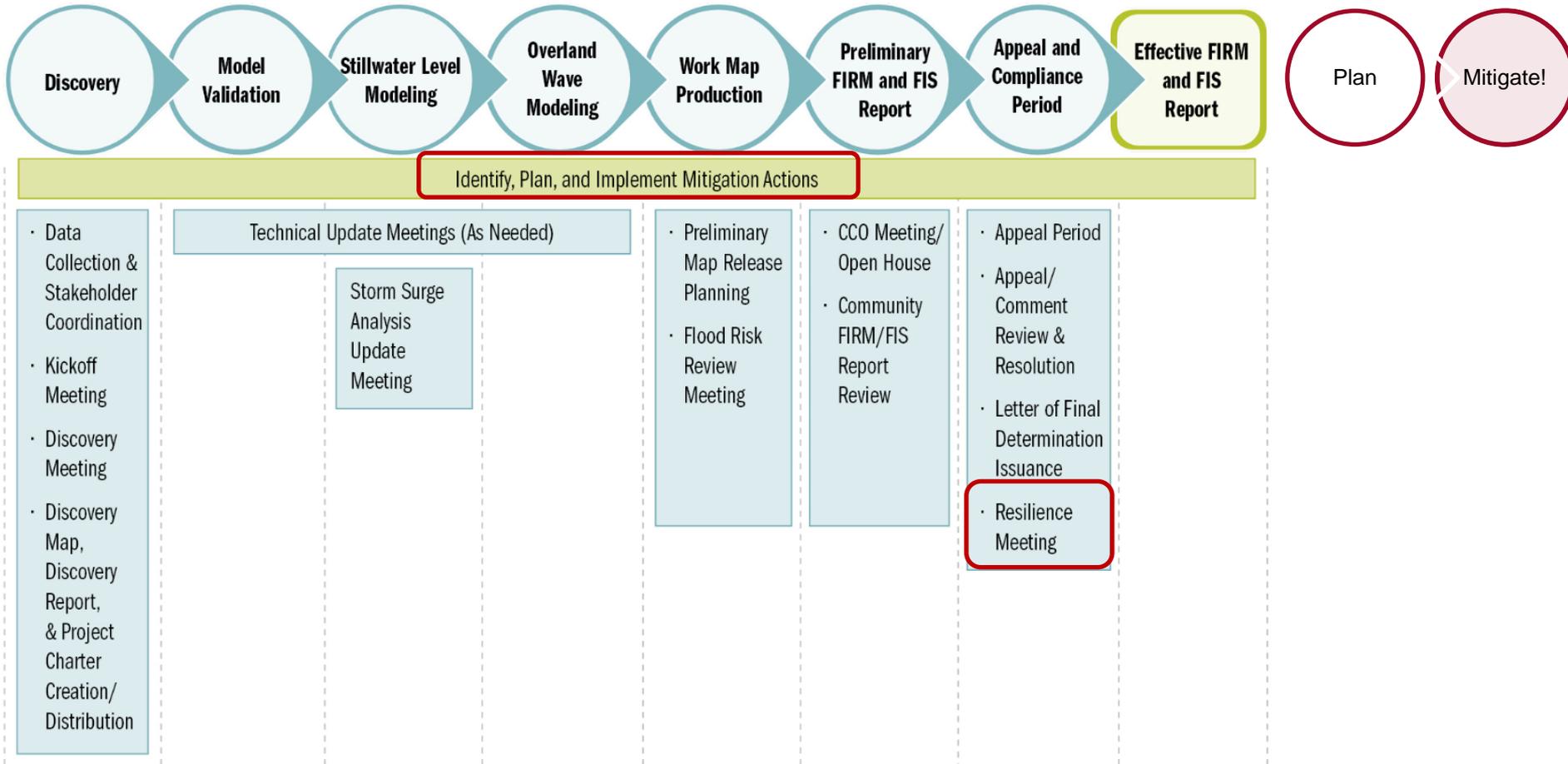
RiskMAP
Increasing Resilience Together

Nationwide Update of Coastal FIRMs

Schedule of Coastal Counties Receiving Updated Mapping Data as of January 2016



Study Process and Community Touch Points



Flood Risk Communication and Visualization Datasets



FEMA

Flood Risk Datasets

► Regulatory Products

- Flood Insurance Rate Map (FIRM) or Flood Map
- Flood Insurance Study (FIS) Report
- FIRM Database
- National Flood Hazard Layer (NFHL)

FLOOD INSURANCE STUDY
FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 2

**FLOOD COUNTY, USA
AND INCORPORATED AREAS**

COMMUNITY NAME	COMMUNITY NUMBER
CITY OF COASTLAND	123456
FLOOD COUNTY UNINCORPORATED AREAS	123457
TOWN OF FLOODVILLE	123458
CITY OF MISTROUSIS	123459
VILLAGE OF UPLAND	123460

*No Special Flood Hazard Areas Identified

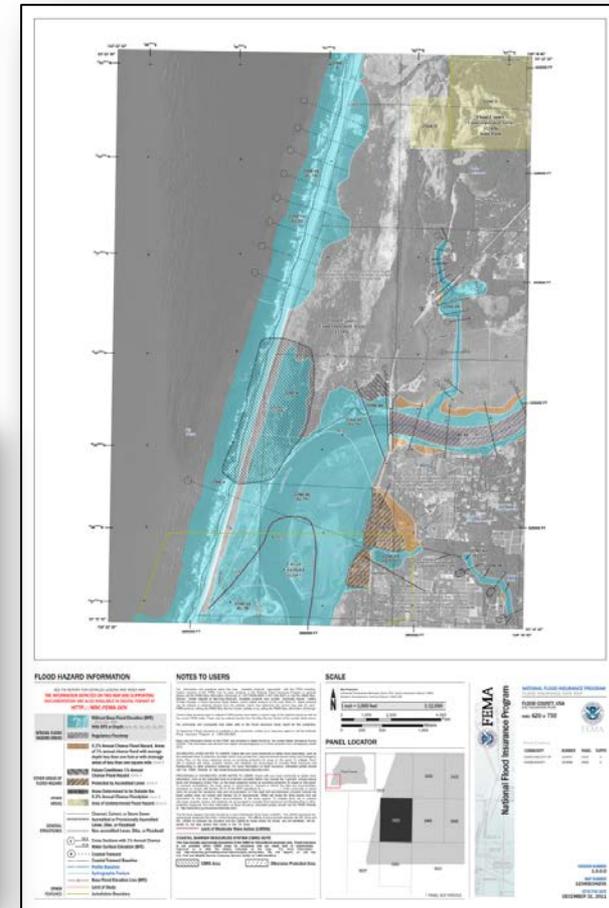


FEMA

EFFECTIVE:
DECEMBER 31, 2011

FLOOD INSURANCE STUDY NUMBER
12345C/000X

Version Number: 1.0.0.0

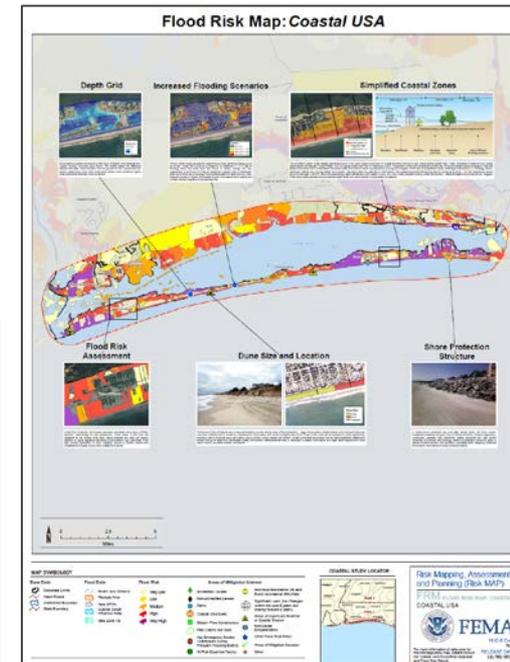
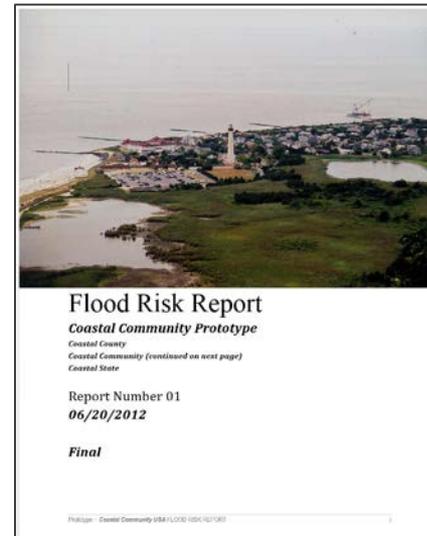


Flood Risk Products (Non-Regulatory)

▶ Flood Risk Products

- Flood Risk Map
- Flood Risk Report
- Flood Risk Database

▶ <https://msc.fema.gov/>



- Effective Products (1170) ?
- Preliminary Products (346) ?
- Pending Product (0) ?
- Historic Products (90) ?
- Flood Risk Products (3) ?**

Please note: Flood Risk Products have purposes that are different from regulatory flood hazard products (i.e., FIRM, FIS Report, and FIRM Database). Regulatory flood hazard products are mandated by law and used by the National Flood Insurance Program (NFIP) for rating flood insurance policies and enforcing the federal mandatory insurance purchase requirements. Flood Risk Products are supplementary resources for communicating flood risk to communities and may not entirely align with the regulatory flood maps. The information in these products reflect what was produced by the FEMA Risk MAP study in that area. Depending on the requirements of the study, the Flood Risk Products available for your community may consist of a Flood Risk Map, Flood Risk Report or Flood Risk Database.

- ▶ Flood Risk Maps (1)
- ▶ Flood Risk Reports (1)
- ▶ Flood Risk Database (1)

Flood Risk Products (Non-Regulatory)

Concept: FEMA aims to better leverage FIS data to convey information about coastal hazards, enhance risk awareness, and encourage action at the community level to reduce those risks.

Base Products	Coastal-Specific Products	Non-standard Products
Changes Since Last FIRM	Increased Flooding	Tsunami
Coastal 1% Annual Chance Depth Grid	Simplified Coastal Zones	Coastal A Zone
Areas of Mitigation Interest	Dune Size and Location	
Flood Risk Assessment		

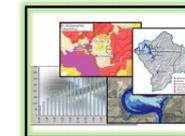
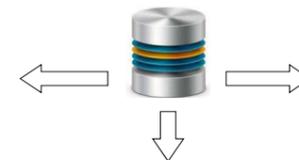
These products can be developed for an entire studied coastline or for focused areas.

Flood Risk Database

Changes Since Last FIRM Data
Areas of Mitigation Interest
Flood Risk Assessment Data
Flood Depth & Analysis Grids



Flood Risk Map



Ad-Hoc Flood Risk Analyses

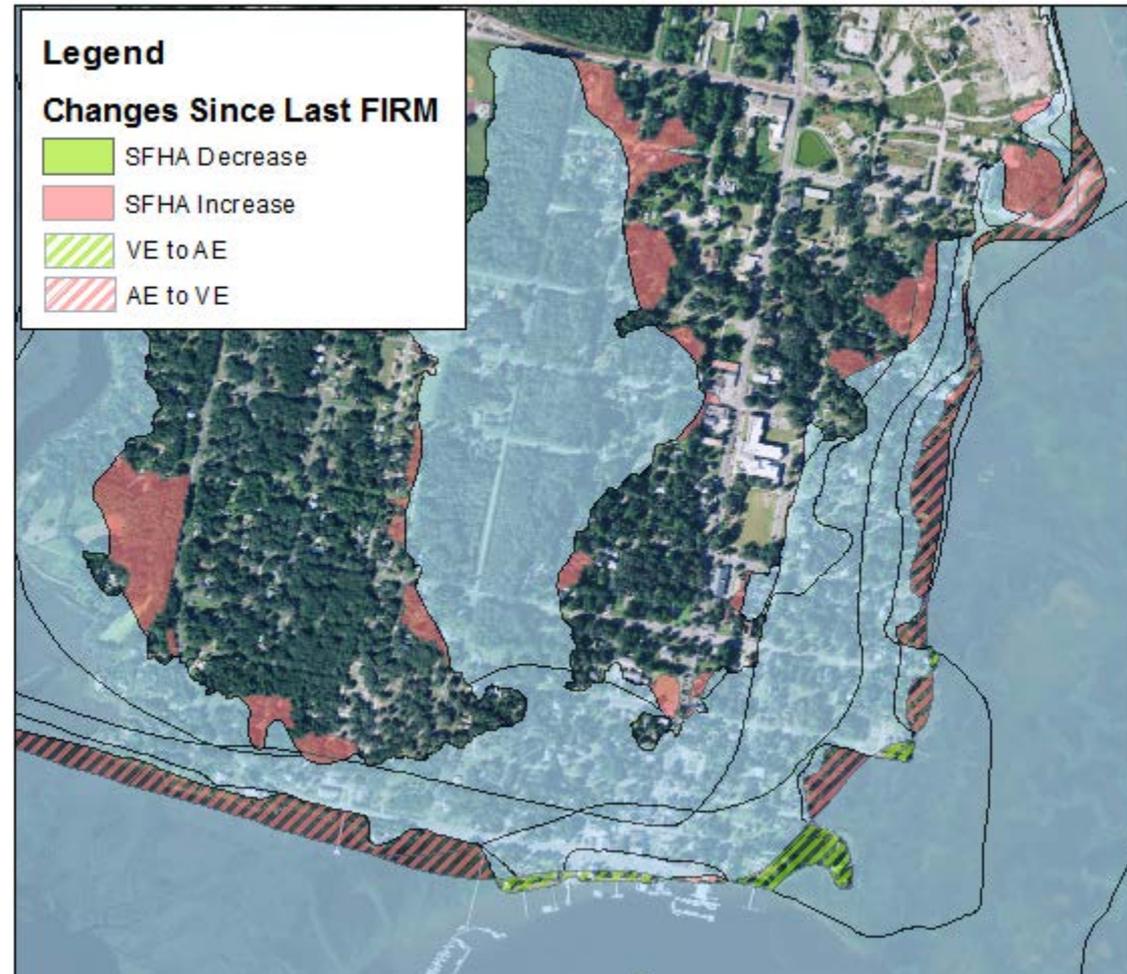


Flood Risk Report



Changes Since Last FIRM

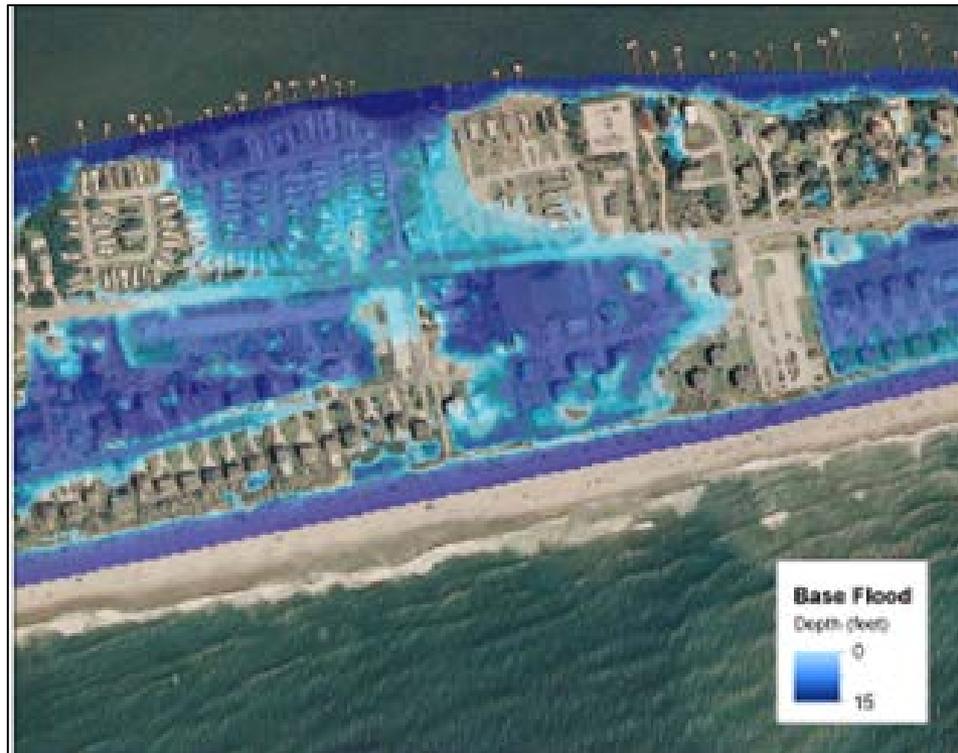
- ▶ **Areas of change between effective map and new mapping**
- ▶ **Attributes include:**
 - Increases/decreases in Special Flood Hazard Area (SFHA) and Floodway
 - Coastal High Hazard Zone Changes (e.g. AE to VE)
 - **Changes to Base Flood Elevation**



FEMA

Alternative Flood Risk Visualizations

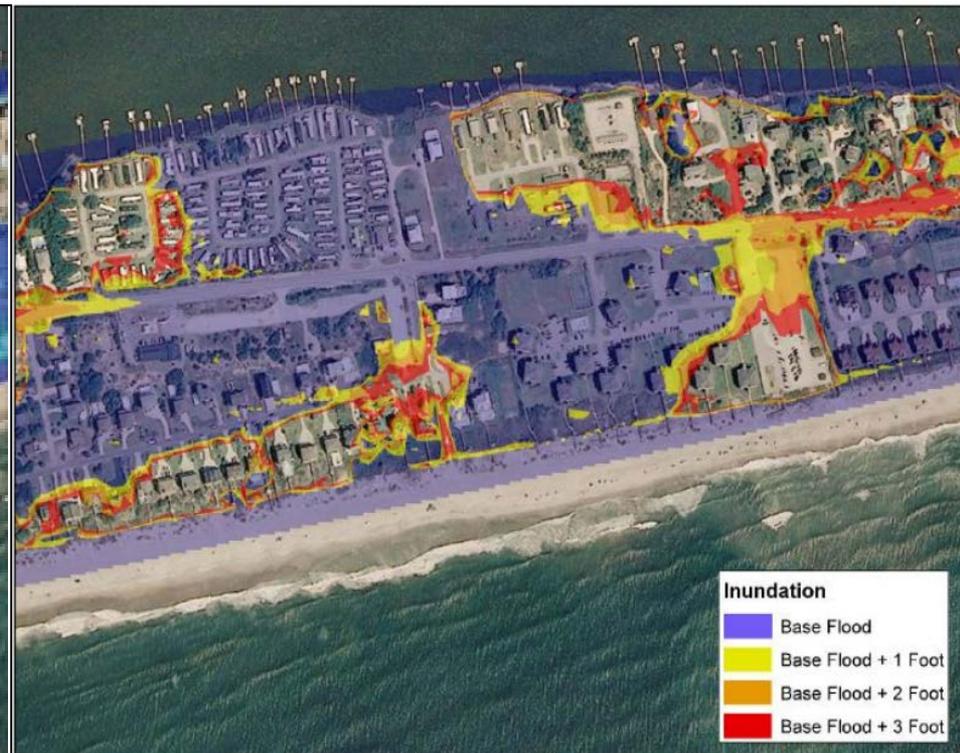
Depth Grids



► Can be used to:

- Show depth of flooding at structures and roads
- Show pathways of flooding
- Prioritize high-risk areas

Increased Flooding Scenario Areas

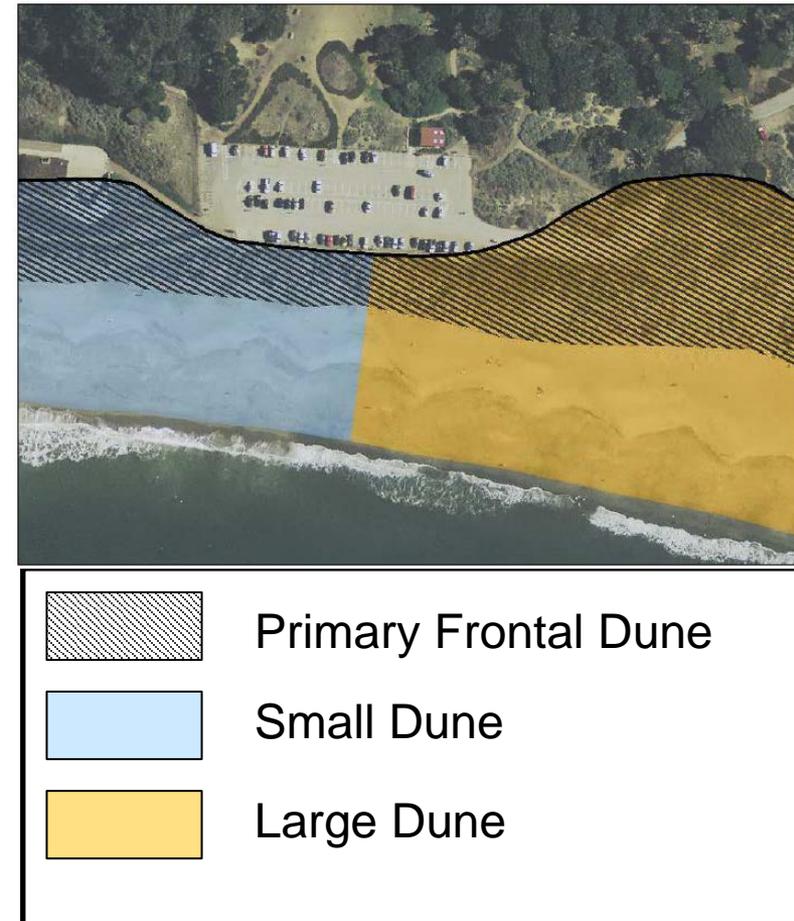


► Can be used to:

- Show flooding from more severe events
- Show risk from sea level rise
- Support planning for these scenarios

Dune Size and Location

- ▶ **High-level indicator of smaller dunes that may provide less flood protection**
- ▶ **Help identify vulnerable reaches where dune protection and enhancement may be most needed**
 - Dune grass plantings, walkovers, signage
 - Beach nourishment
- ▶ **Clearly shows Primary Frontal Dunes and helps communicate basis of VE Zone mapping on FIRM**

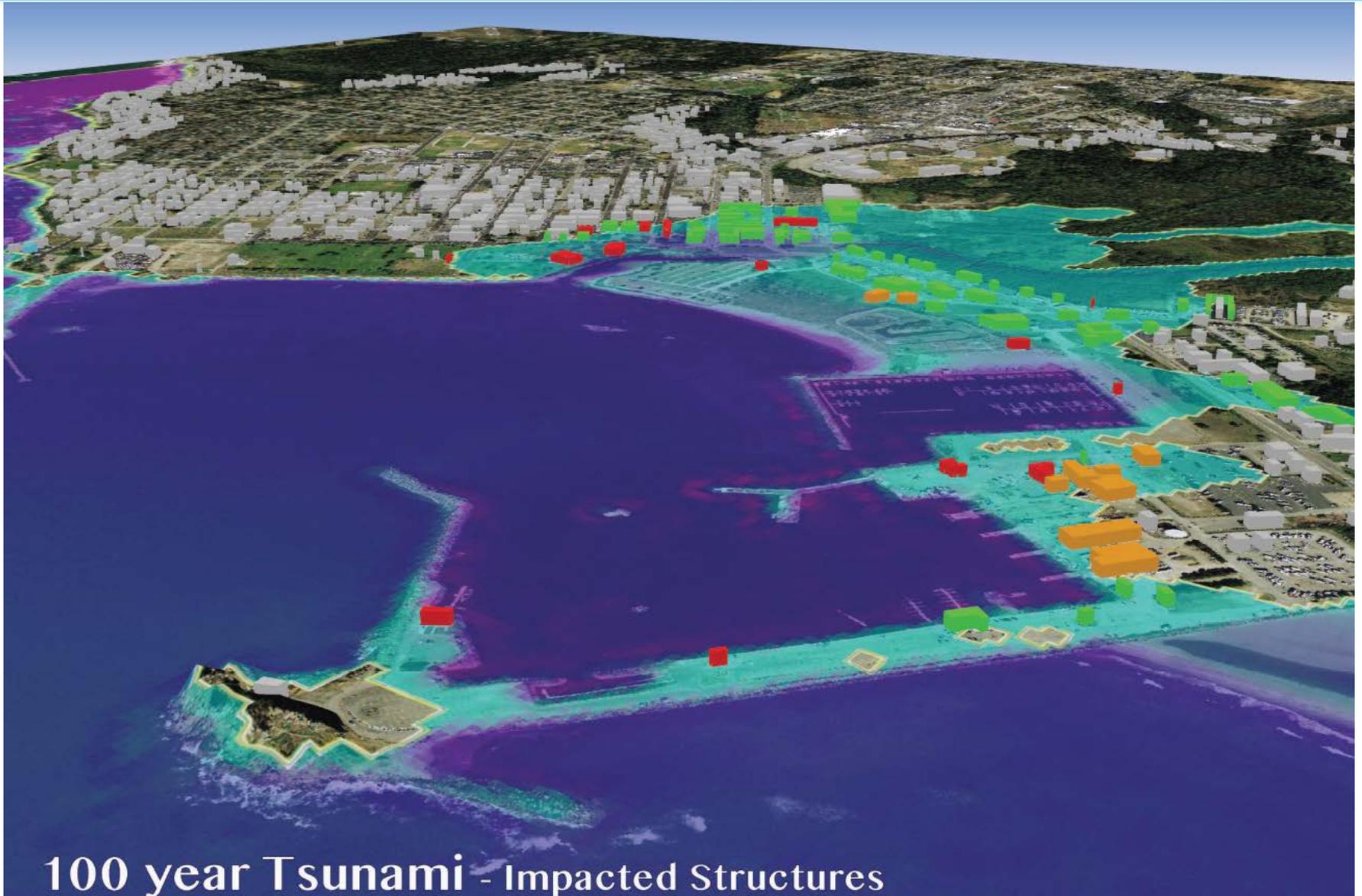


Non-Standard Flood Risk Datasets



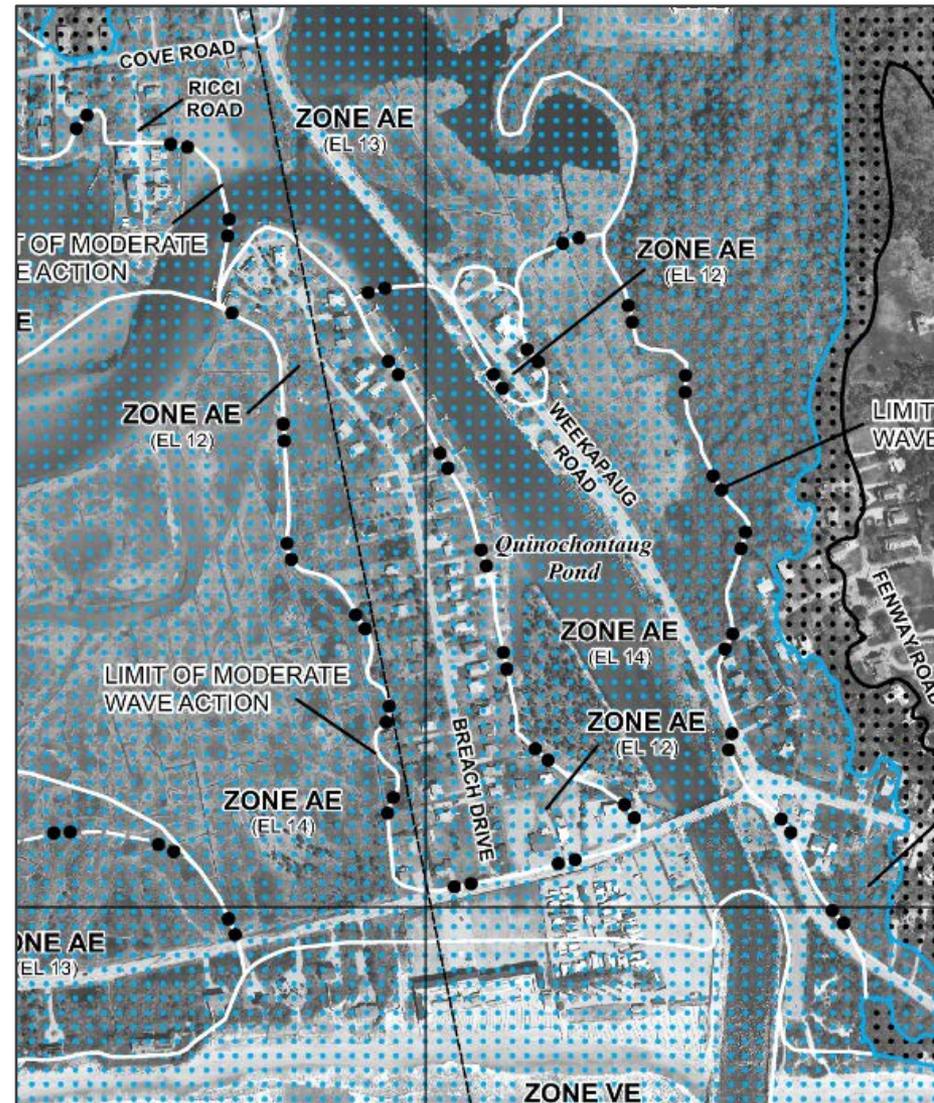
FEMA

Tsunami Vulnerability—Crescent City, CA

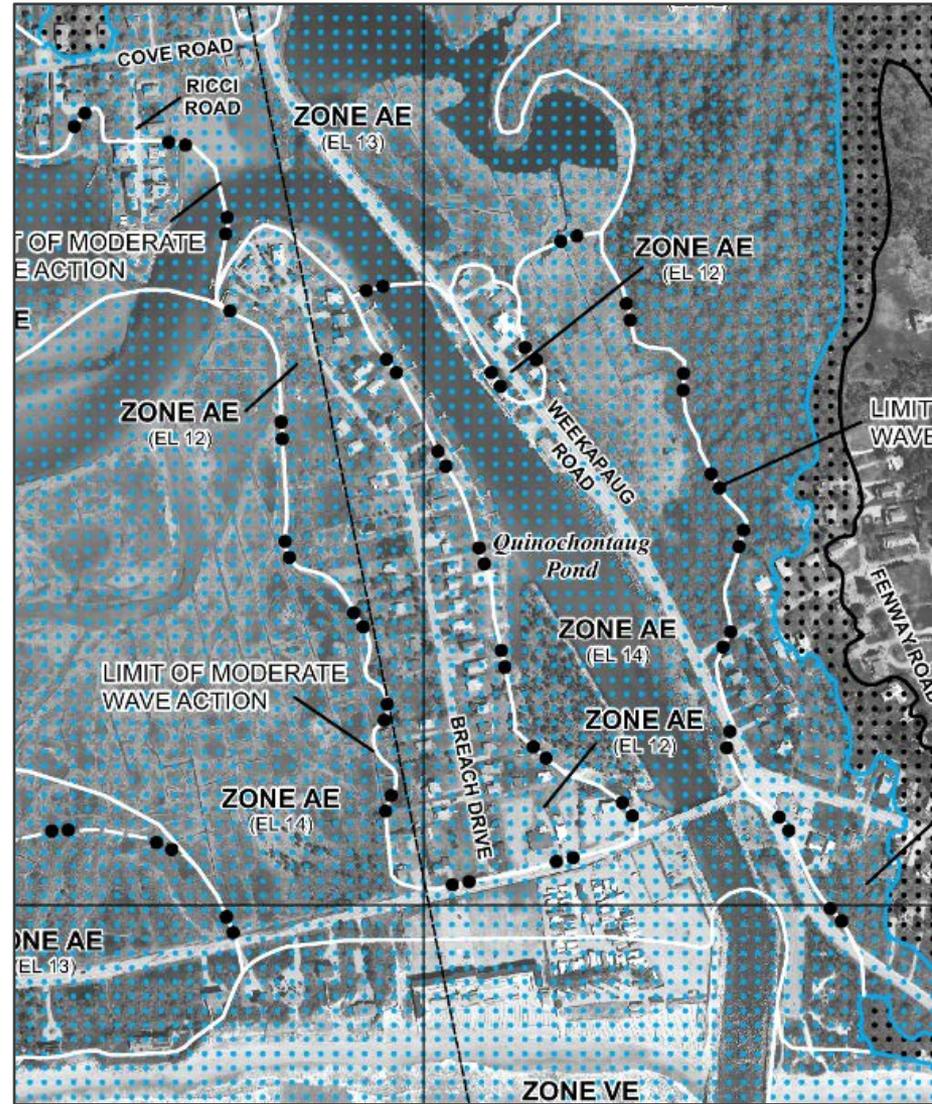
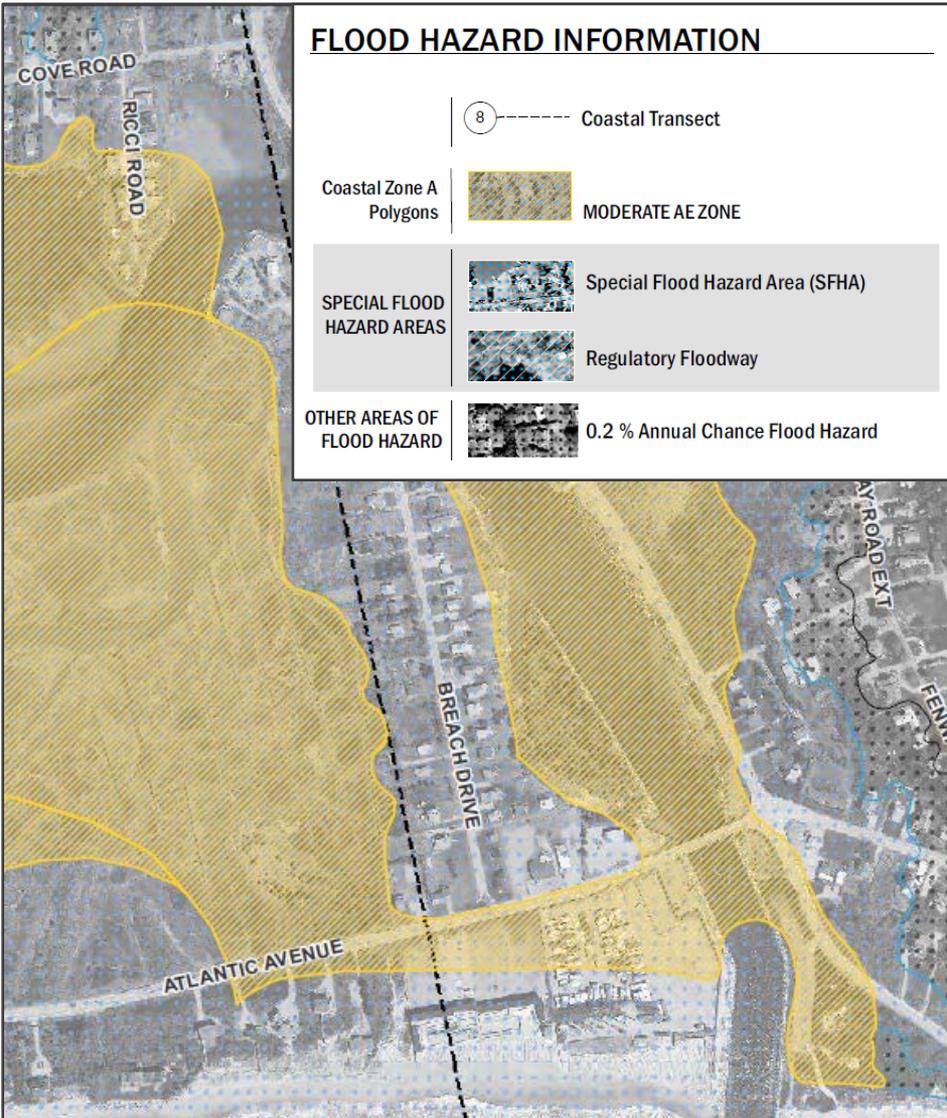


Coastal A Zone Maps—Region I (RI & CT)

- ▶ **Coastal A Zone = Moderate wave action (defined as waves from 1.5 to 3 feet in height)**
- ▶ **Non-regulatory for FEMA**
 - No insurance implications
 - No FEMA-required floodplain management or building specifications
- ▶ **Communities may adopt building codes that require VE Zone building standards**
- ▶ **Area defined by Limit of Moderate Wave Action *line* on FIRM**



Coastal A Zone Maps—Region I (RI & CT)



How can communities use their products?

- 1. Leverage data with partner and external source information
- 2. Identify areas of greatest vulnerability
- 3. Help community members and property owners understand their risk
- 4. Identify projects to make their community more resilient

Summary

- ▶ **FEMA leverages extensive data produced during a flood study to provide additional community-specific information that tells more of the flood story.**
- ▶ **Flood risk datasets go beyond the FIRM to provide nuanced details about hazards that are useful for stakeholders to understand so they can take action to reduce risk.**
- ▶ **Flood risk products are flexible and may be adapted to meet specific geographic or community needs.**

QUESTIONS?

For more info on FEMA's Risk MAP Program:

<https://www.fema.gov/risk-mapping-assessment-and-planning-risk-map>

For more info on Flood Risk Products:

<http://www.fema.gov/risk-map-flood-risk-products>

Jon Westcott

Jonathan.Westcott@fema.dhs.gov

Krista Conner

kconner@mbakerintl.com



FEMA



FEMA



FEMA