RiskMAP
Increasing Resilience Together

Jefferson County
Flood Risk Review Meeting

July 25, 2017

FEMA

Agenda

- The value of updated flood maps for your community
- Review updated flood-risk data and important next steps in the Risk MAP process
- Increasing mitigation opportunities in your community
- Working session to review maps

New York State Planning and Grants

Corrina Cavallo

Supervisor, Mitigation Planning

NYS Division of Homeland Security and Emergency Services
Phone: 518-292-1155
Email: Corrina.Cavallo@dhses.ny.gov
www.dhses.ny.gov/recovery

The Value of Updated Flood Maps for your Community

Why Are We Here?

The Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) are being updated for your community.

Flood Maps Impact Important Decisions

To Identify and Assess the Flood Risk

To Establish Rates for Flood Insurance

To Determine Local Land Use

To Inform Engineers and Developers

To Equip Emergency Managers

Why Update your Flood Maps?

JEFFERSON COUNTY: SNAPSHOT

COMMUNITY	POPULATION	NFIP POLICIES	NFIP CLAIMS	FEMA CLAIMS PAID	CAV/CAC DATES	HAZARD MITIGATION PLAN
TOWN OF ALEXANDRIA	2,983	17	7	$12,973.76	CAV: 8/6/2015 CAC: 11/19/2004	Expired
TOWN OF BROWNVILLE	3,632	23	6	$284,056.09	CAV: 9/17/2009 CAC: 3/25/1996	Expired
TOWN OF CAPE VINCENT	2,051	18	4	$10,691.73	CAV: 12/18/2001 CAC: 10/21/2015	Expired
TOWN OF CLAYTON	3,175	9	5	$6,855.00	CAV: 6/25/2004 CAC: 1/28/1992	Expired
TOWN OF ELLISBURG	2,876	8	4	$36,331.68	CAV: 10/1/2015 CAC: N/A	Expired
TOWN OF HENDERSON	1,360	30	14	$15,177.00	CAV: 2/8/2012 CAC: 12/20/2006	Expired
TOWN OF HOUNSFIELD	2,016	8	N/A	$0	CAV: N/A CAC: 3/27/1996	Expired

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Why Update your Flood Maps? (cont'd)

JEFFERSON COUNTY: SNAPSHOT

COMMUNITY	POPULATION	NFIP POLICIES	NFIP CLAIMS	FEMA CLAIMS PAID	CAV/CAC DATES	HAZARD MITIGATION PLAN
TOWN OF LYME	1,561	48	1	$3,924.56	CAV: 9/15/2009 CAC: 3/14/2011	Expired
TOWN OF ORLEANS	2,789	16	4	$3,661.00	CAV: 8/6/2015 CAC: 11/19/2014	Expired
VILLAGE OF ALEXANDRIA BAY	1,078	17	2	$4,534.03	CAV: 8/6/2015 CAC: 11/19/2014	Expired
VILLAGE OF CAPE VINCENT	726	3	3	$7,528.00	CAV: N/A CAC: 10/28/2015	Expired
VILLAGE OF CHAUMONT	624	4	4	$7,659.11	CAV: 5/13/2003 CAC: 11/16/2015	Expired
VILLAGE OF CLAYTON	1,978	12	4	$18,121.31	CAV: 6/25/2004 CAC: N/A	Expired
VILLAGE OF SACKETS HARBOR	2,586	8	1	$1,115.00	CAV: N/A CAC: 12/20/2006	Expired

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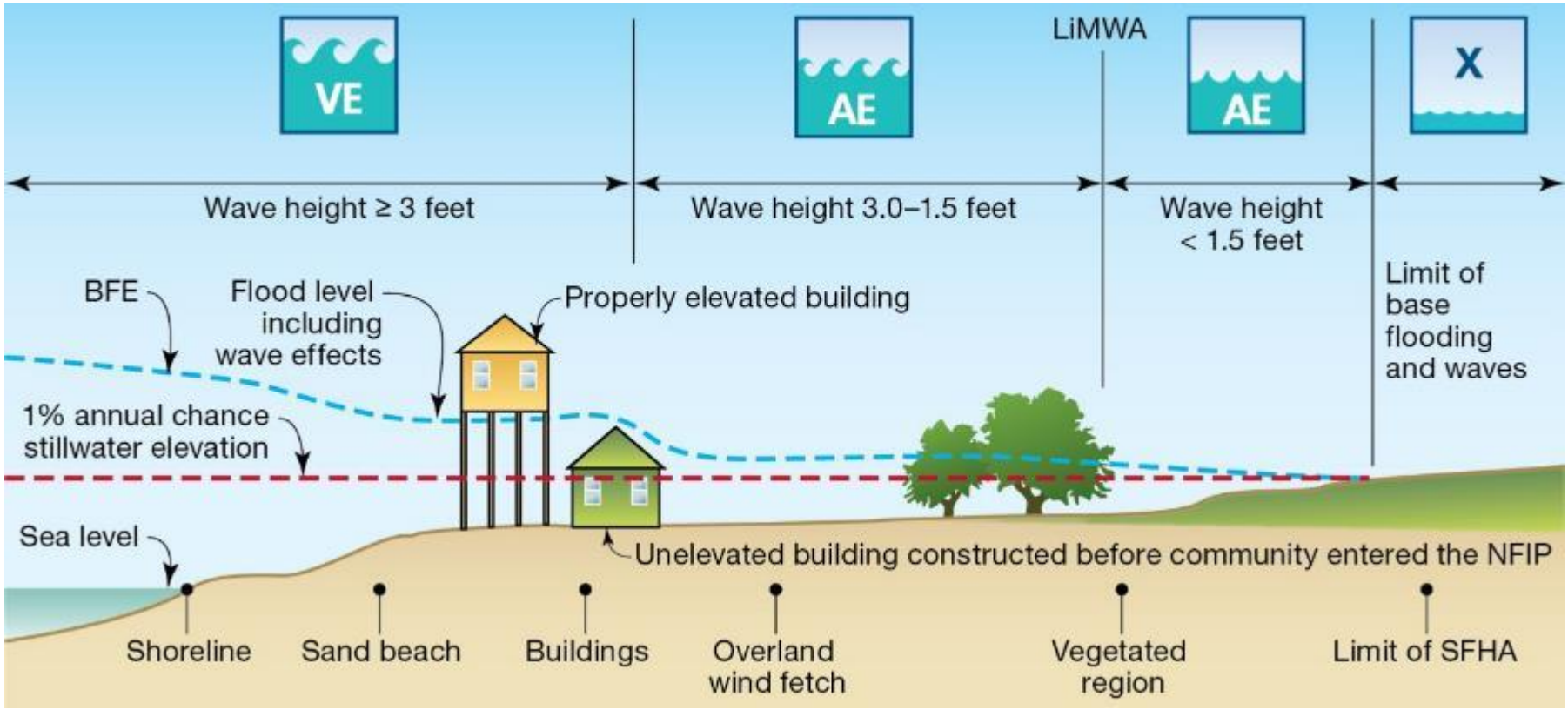
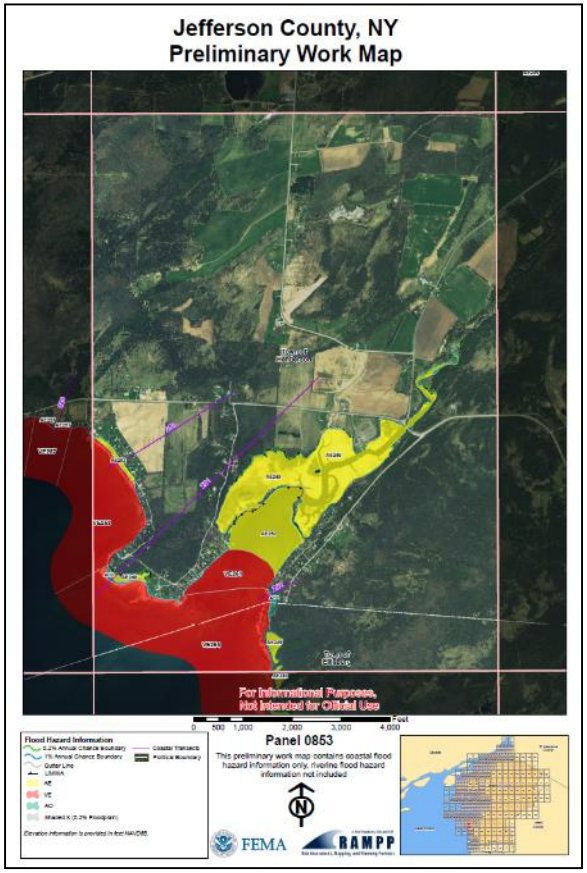
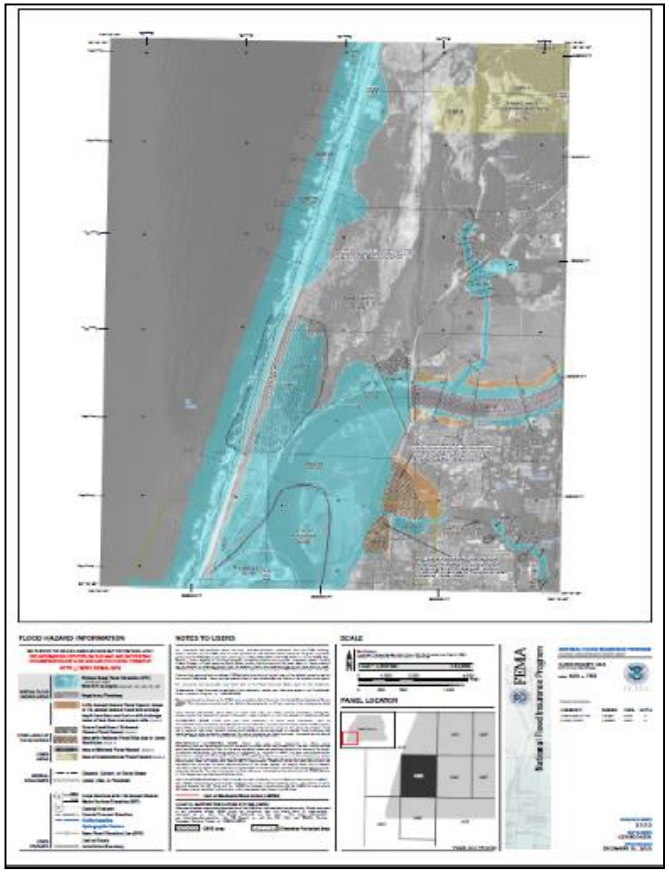
Detailed Coastal Mapping



Preliminary Work Map vs FIS/FIRM





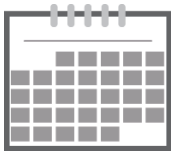
WORK MAPS WILL NOT AFFECT FLOOD INSURANCE REQUIREMENTS OR COSTS

Your Role

Local Officials, Floodplain Administrators and Staff

Provide technical review of preliminary data

Submit questions and comments to FEMA



Share new flood risk info with property owners and stakeholders

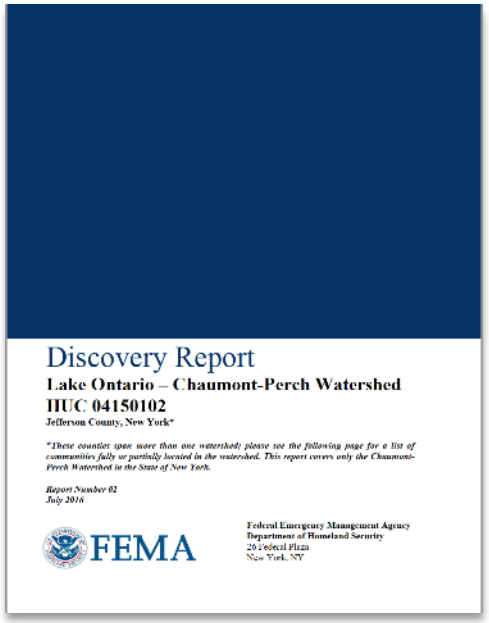
Identify mitigation needs and priorities

Update local plans, codes, and ordinances

Jefferson County

The Risk MAP Process and Scope

Discovery Report 2014



Discovery Report

Lake Ontario – Chaumont-Perch Watershed

HUC 04150102

Jefferson County, New York*

**These counties span more than one watershed; please see the following page for a list of communities fully or partially located in the watershed. This report covers only the Chaumont-Perch Watershed in the State of New York.*

Report Number 02
July 2016

FEMA

Federal Emergency Management Agency
Department of Homeland Security
26 Federal Plaza
New York, NY

- The most severe flooding from overflow occurs during the spring thaw.
- Current Coastal Erosion Hazard Area (CEHA) Base Flood Elevations are lower than what is shown in the U.S. Army Corps of Engineers coast flood level report. A restudy with wind and wave run up or a coastal study is needed.
- BFEs are needed along Lake Ontario's shoreline.

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Jefferson County

STARR

FEMA

RAMPP

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Project Timeline and Schedule

Discovery Meeting
2014

Flood Risk Review Meeting
July 25, 2017

Preliminary Date
TBD

CCO Meeting & Open House
TBD

Appeal Period
TBD

End of Appeal Period
TBD

FEMA issues LFD
TBD

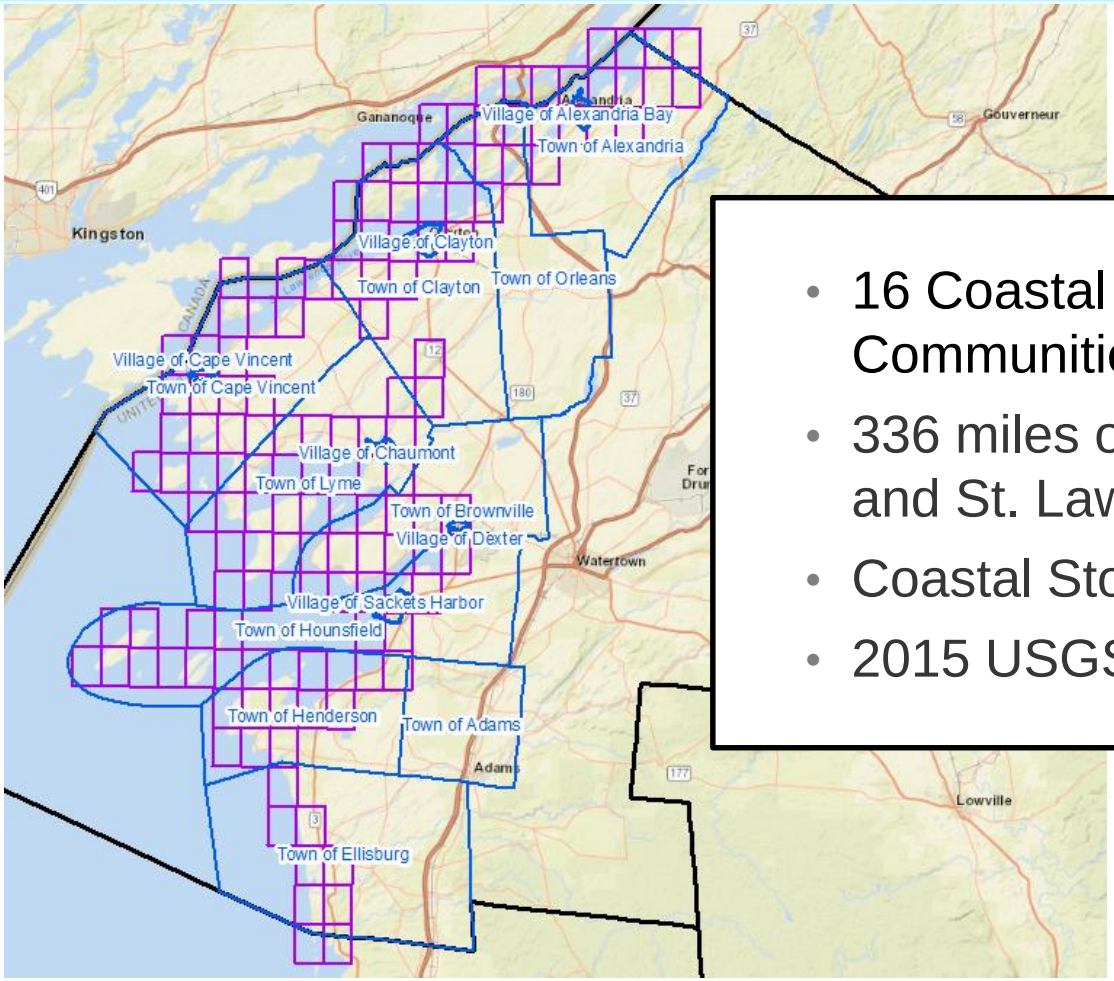
"Letter of Final Determination"

To communities and publishes the BFEs in the Federal Register

Communities have 6 months to adopt the study before the data becomes "effective". *Failure to adopt results in suspension from NFIP*

Effective Date
2019-2020

Study Area



- 16 Coastal Jefferson County Communities
- 336 miles of shoreline (Lake Ontario and St. Lawrence River)
- Coastal Storm Flooding update
- 2015 USGS NY Great Lakes LiDAR

Storm Study Technical Support

Five Report sections

- Short-term Water Levels
- Long-term Water Levels
- Statistical Analysis
- Storm Surge model Setup and Validation
- Storm Production

Report can be found at www.greatlakescoast.org

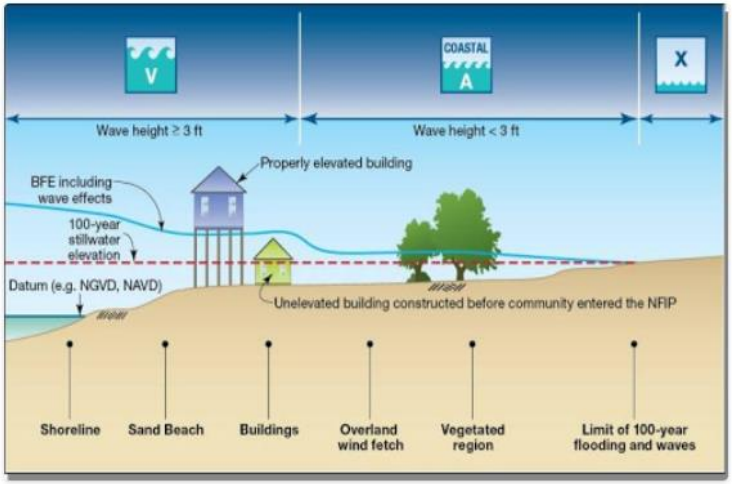
Effective vs New Coastal Study

Coastal Study Component	Effective Studies (1970's)	New Study (2017)
Topographic data	1960s-1970s USGS	2015 USGS NY Great Lakes LiDAR USGS 10 meter National Elevation Dataset (NED) 2011 USACE/JALBTCX Great Lakes Topo/Bathy LiDAR 2007 USACE NCMP Topo/Bathy LiDAR 2001 USACE Detroit District Topo/Bathy LiDAR 1999 Lake Ontario Historic Sounding Data
Stillwater Elevation (SWEL)	Frequency analysis	Lake Ontario - 2012 St. Lawrence River Gage Analysis - 2016
Modeled transects	0	304
Wave set-up	No	Yes
Wave run-up	Yes for the St. Lawrence River communities	Yes
Limit of Moderate Wave Action (LiMWA)	No	Yes

Study Approach

Regional Study Approach

- Water level and wave analysis
- Improvement over community-county
- Reduces number of boundary conditions
- Greater consistency in assumptions



Local/County Level Activities

- Mapping tasks performed at county level
- Nearshore wave transformations
- Wave run-up
- Overland wave propagation

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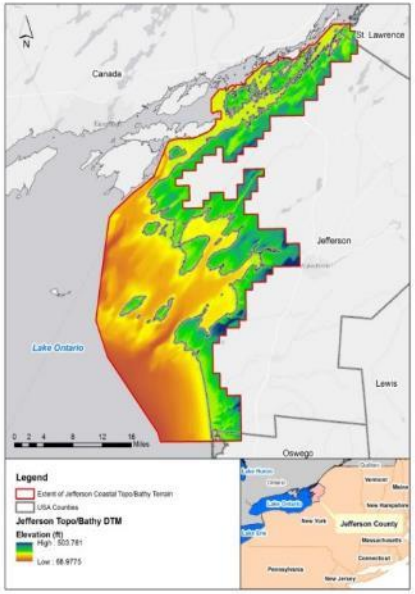
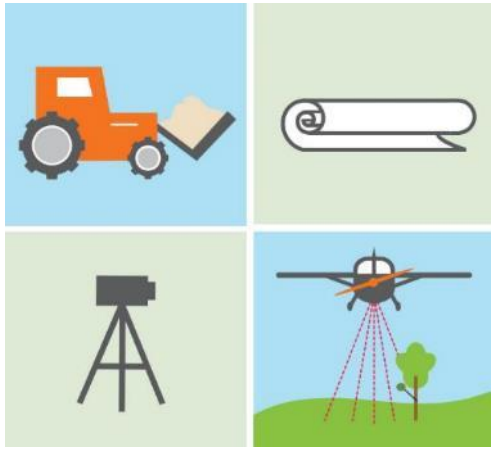
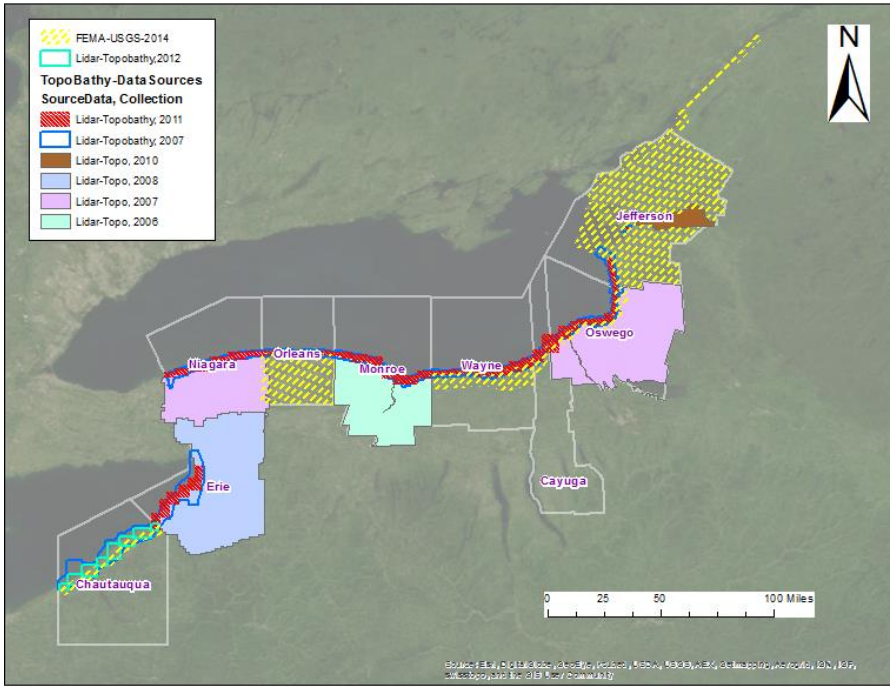
Light Detection and Ranging (LiDAR)







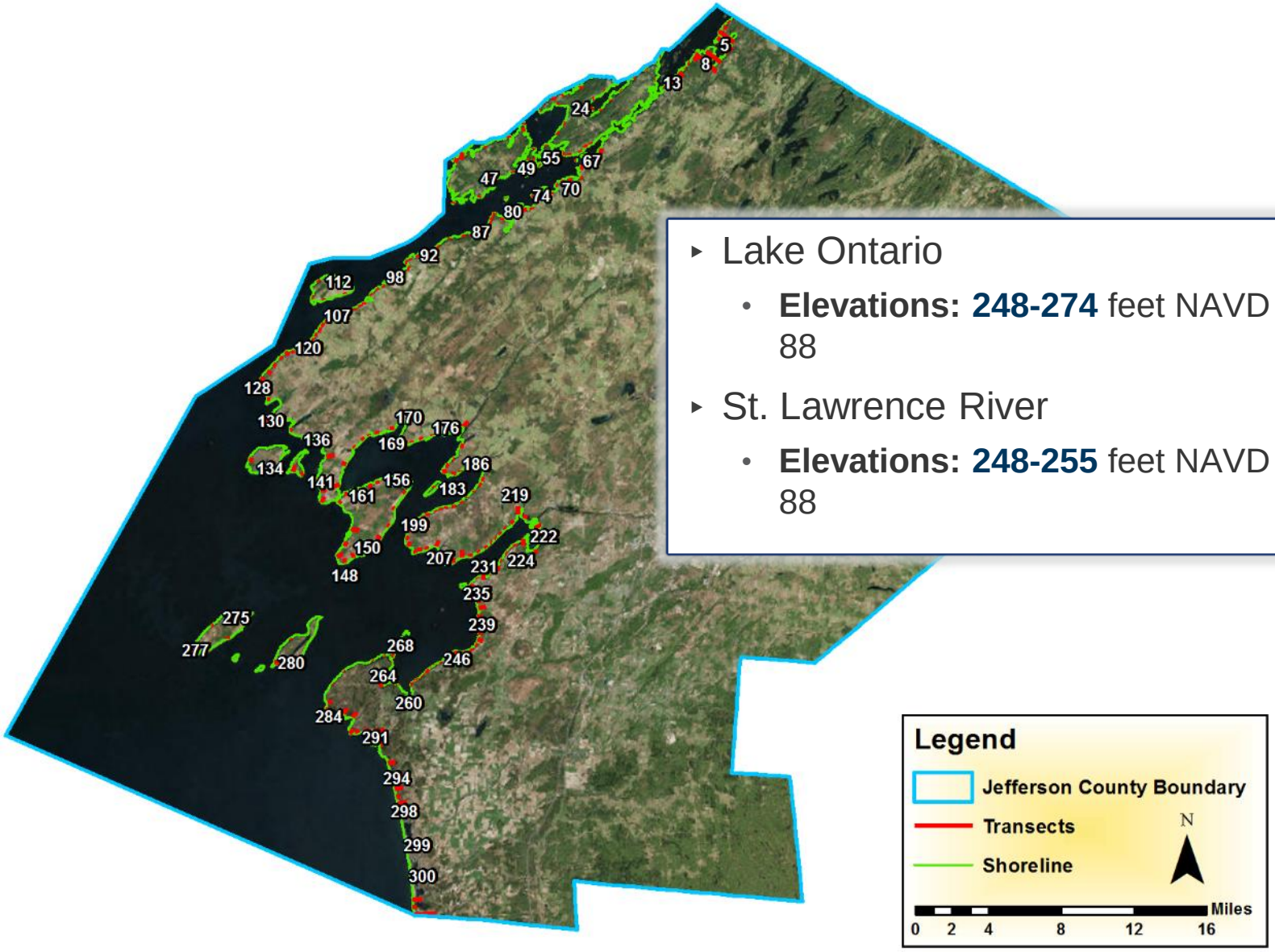
Terrain Dataset

Used for modeling & mapping

LiDAR Data Sources

2015 USGS NY Great Lakes LiDAR
2011 USACE/JALBTCX topo/bathy
Gaps supplemented with USGS National Elevation Dataset (NED) data

Jefferson County Transects



- Lake Ontario
  - **Elevations: 248-274** feet NAVD 88
- St. Lawrence River
  - **Elevations: 248-255** feet NAVD 88

Field Reconnaissance

Jefferson County, NY *Transect* 3, *Point* 1 *Date*: 7/28/2015 *Time*: 08:11:37 AM	
Location Description:	Beach at Bryant Road within manufactured home community. Surrounding shoreline is bedrock with a small beach made with placed sand. Shoreline should be non erosional to majority being bedrock.
Point Type:	Coastal
Latitude, Longitude (decimal degrees):	44.38446, -75.853392
Building Description:	Manufactured home community where homes are elevated by 1-2 feet.
Vegetation Description:	None
Marsh Description:	None
Coast Description:	Artificial Beach
Fetch:	Limited Fetch

Direction 320

Description Artificial beach surrounded by bedrock and dock.

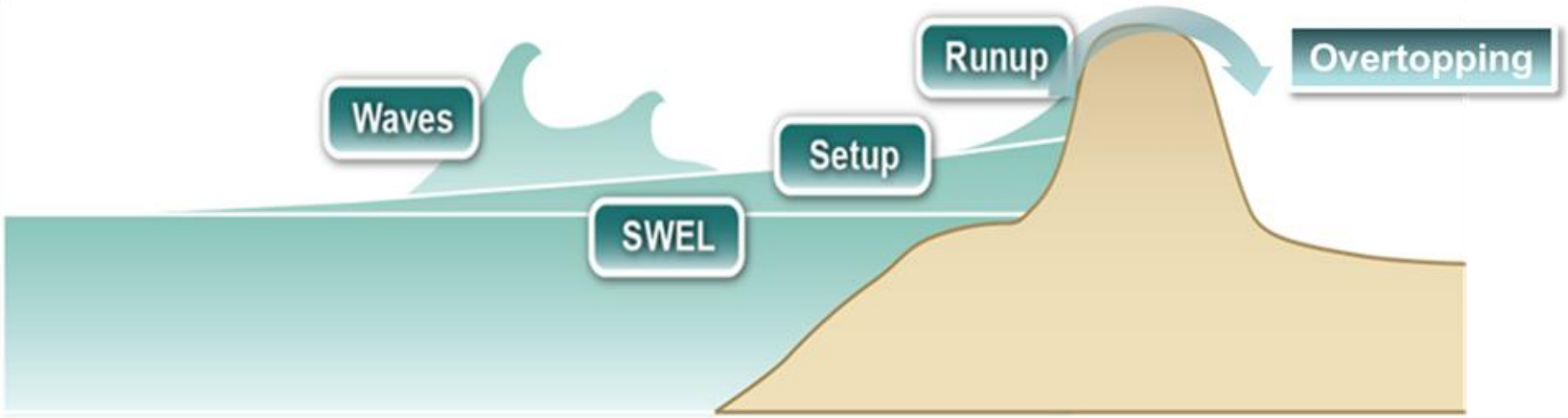
Direction 190

Description Manufactured home community, homes elevated 1-2 feet.

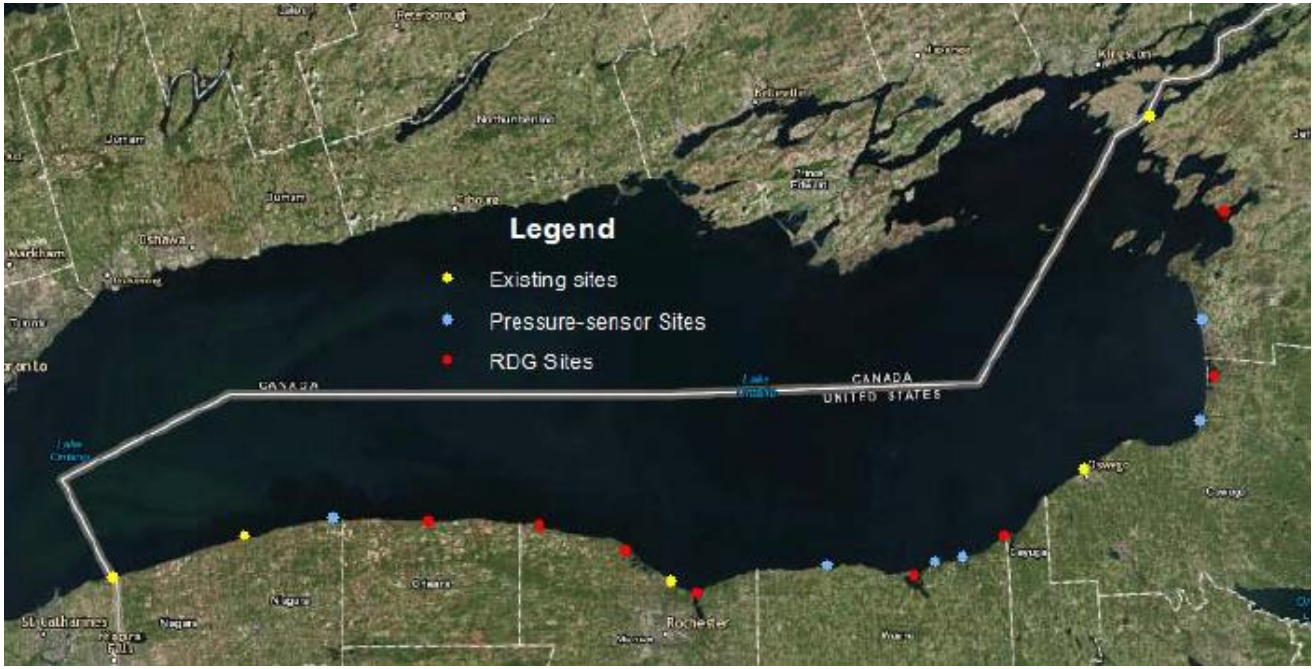
Direction 20

Description Small stone wall and jetty next to local channel.

Coastal Base Flood Elevation



U.S. Geological Survey (USGS) Study



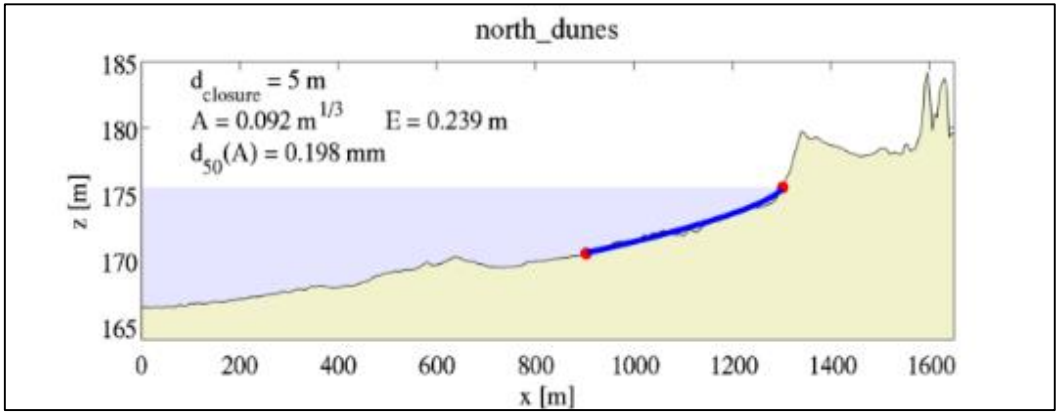
Combination of sensors:

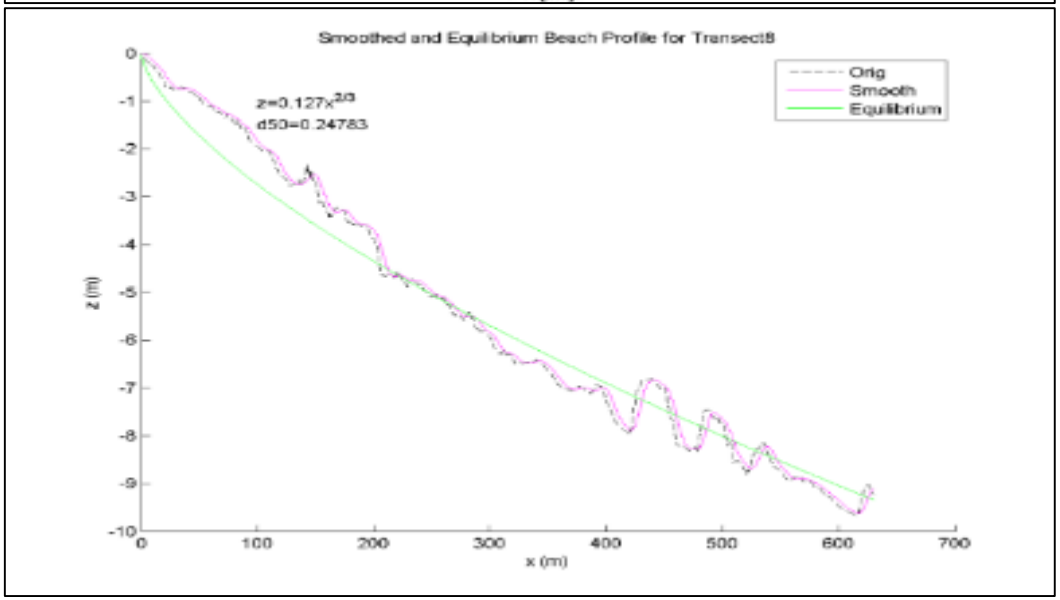
- Record water levels at 14 locations along Lake Ontario.
- Drones will supplement high-resolution elevation maps and documentation of flooding extents and coastal impacts.

Erosion in the Great Lakes

USACE CSHORE model

- Applies real physics
- Near-shore wave processes
- Cross-shore and along shore sediment transport
- Requires sediment grain size



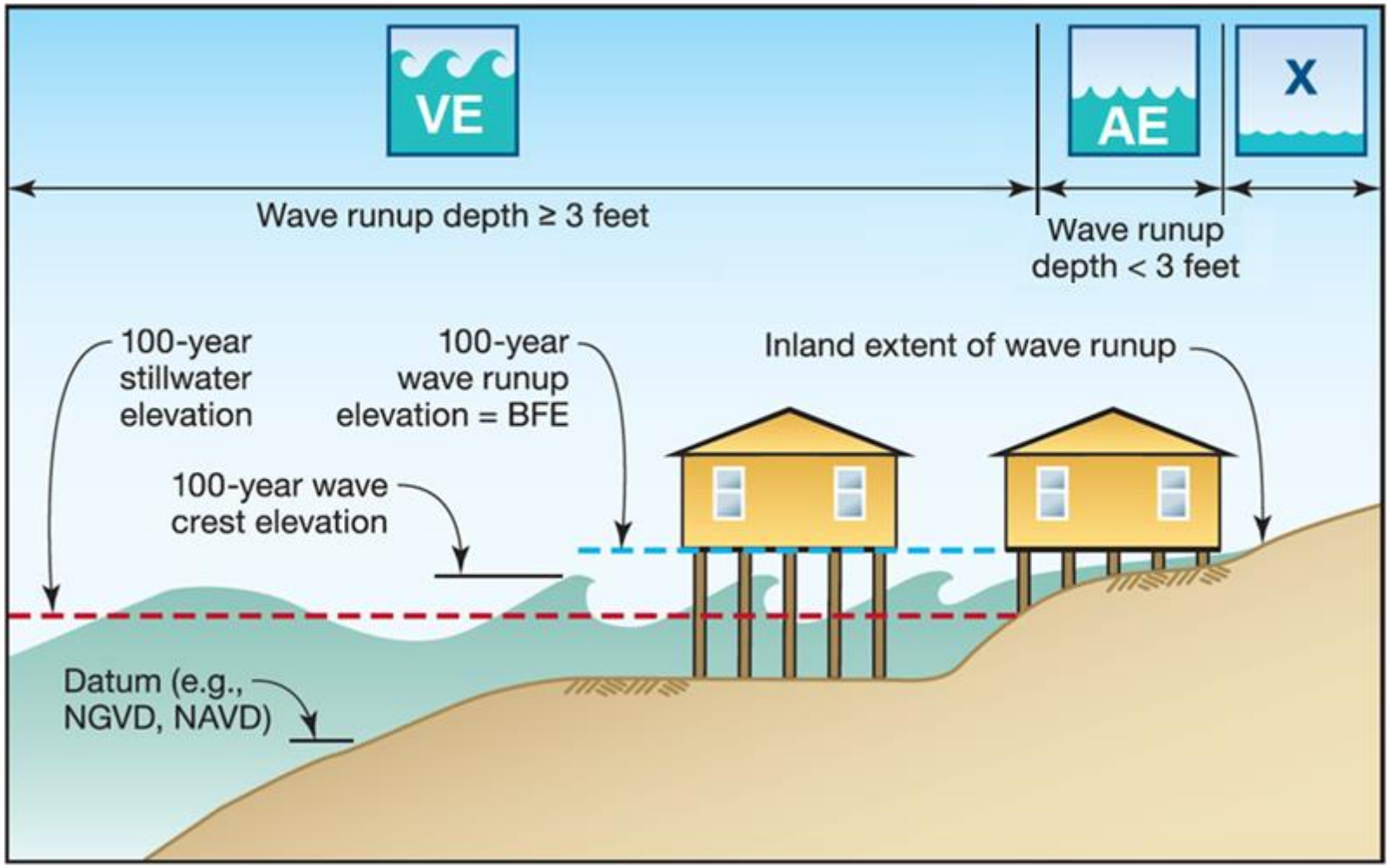


Coastal Erosion and Scour

The two most damaging aspects of coastal flooding for coastal buildings.

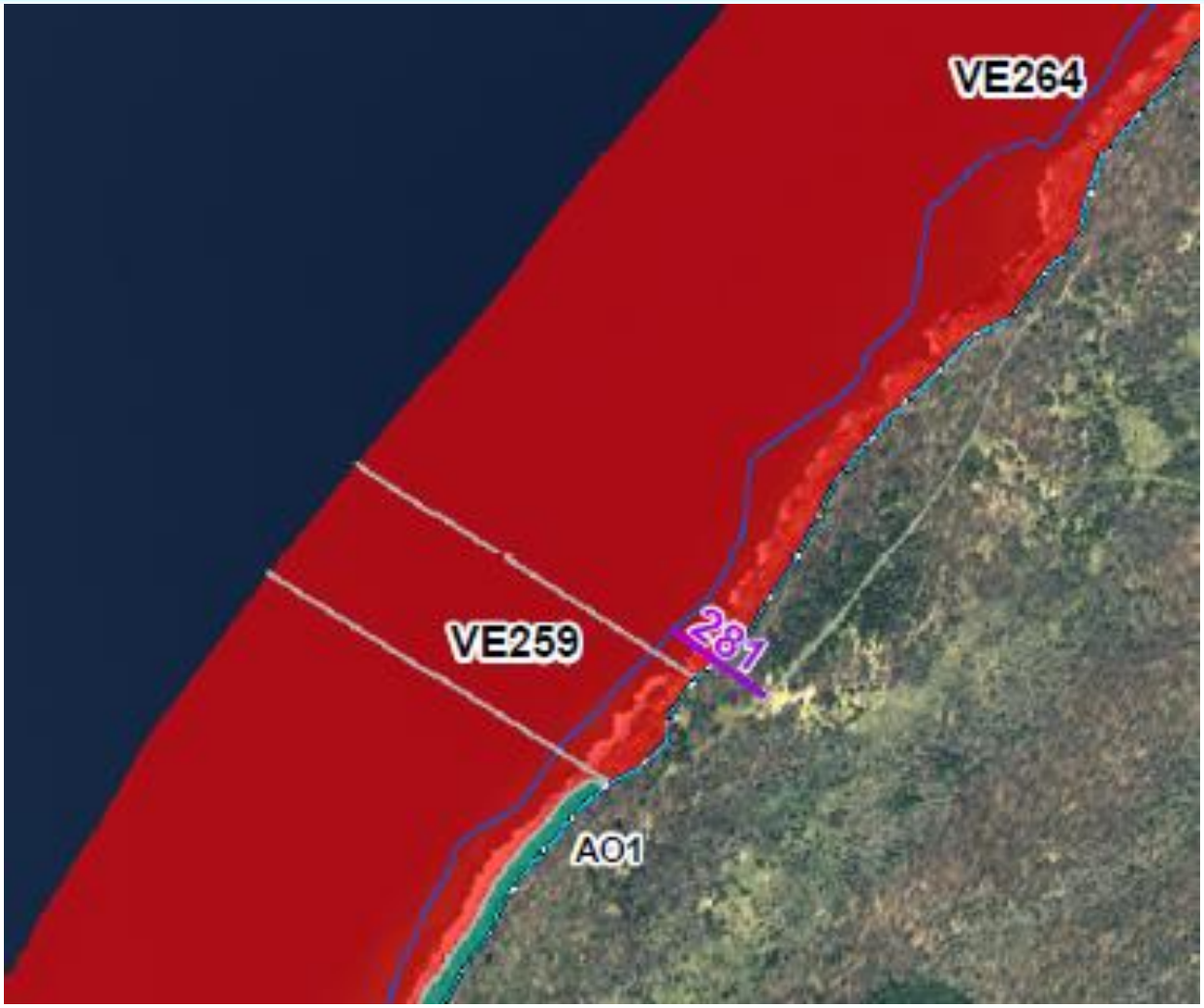
- Erosion should be considered in determining foundation depths and heights.
- Nature and extent of soil loss expected around a building is critical.
- A slab is not a substitute for adequate embedment.

Detailed Coastal Mapping: Wave Runup



Wave Runup

- Rush of water that extends inland when waves come ashore
- These elevations may be higher than the stillwater elevations developed as part of the storm surge analysis
- First time wave effects have been mapped for this area



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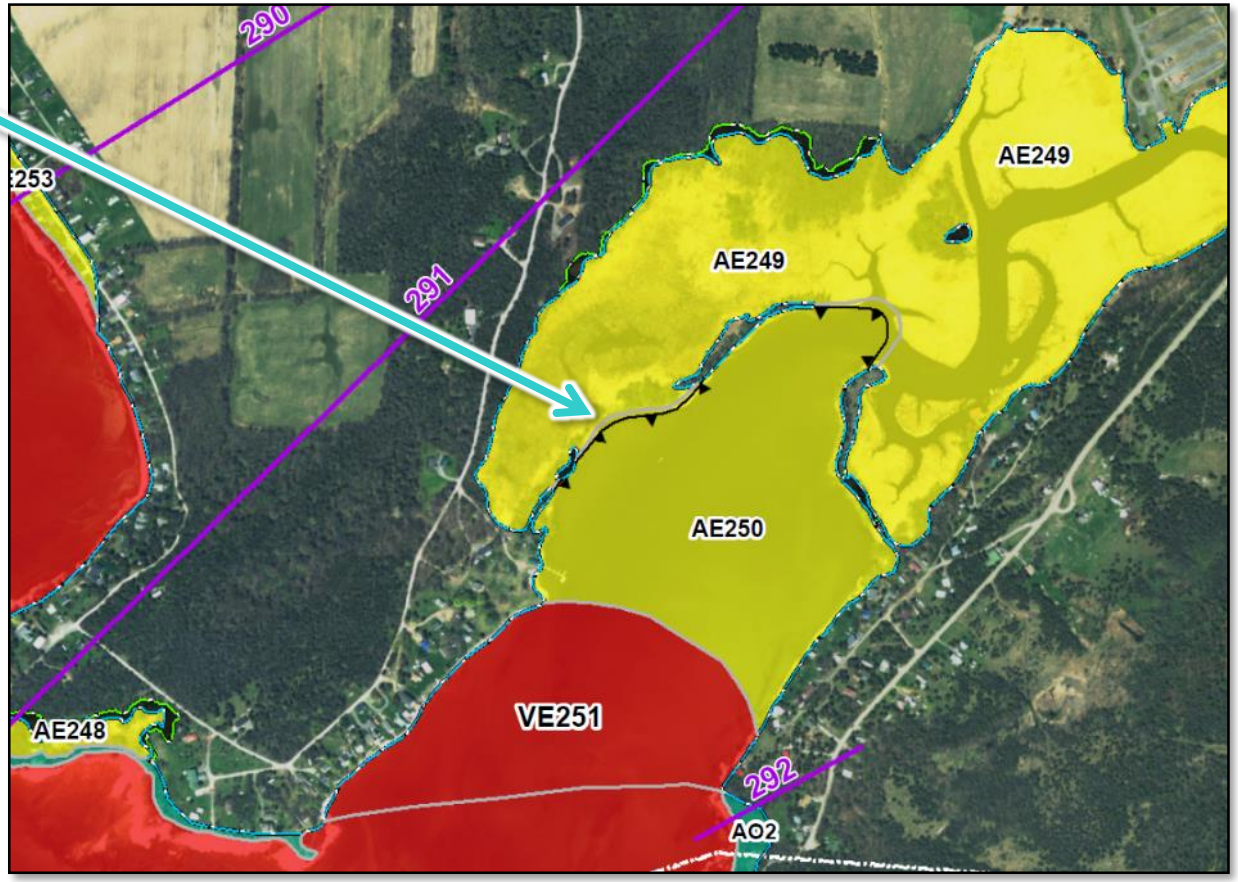
Wave Overtopping: AO Zones

- Overtopping Rate Considerations for Establishing Flood Insurance Rate Zones
- Ponding Considerations
  - Areas were AE not present beyond slope break
  - Duration of overtopping
  - Consider rainfall associated with event
  - Topography
  - Drainage landward of the overtopped barrier

Limit of Moderate Wave Action (LiMWA)

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



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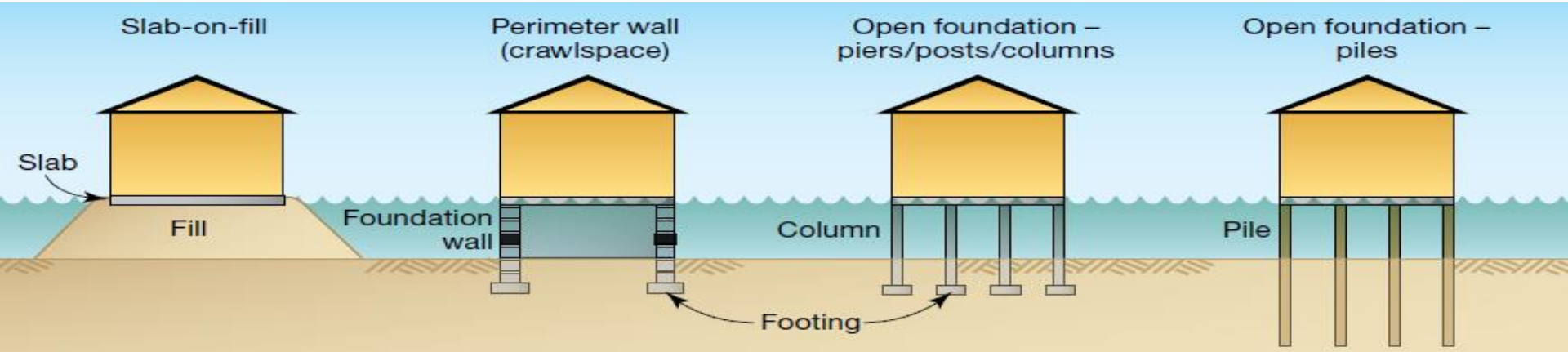
Development Requirements

A Zones

- Slab-on-grade / Slab-on-fill
- Fully-enclosed foundation wall (flood openings required)
- Open foundation on piers, posts, piles, or columns
- Top of lowest floor elevated to or above the BFE
- AO Zone – elevate to or above flood depth number or 2 feet above HAG

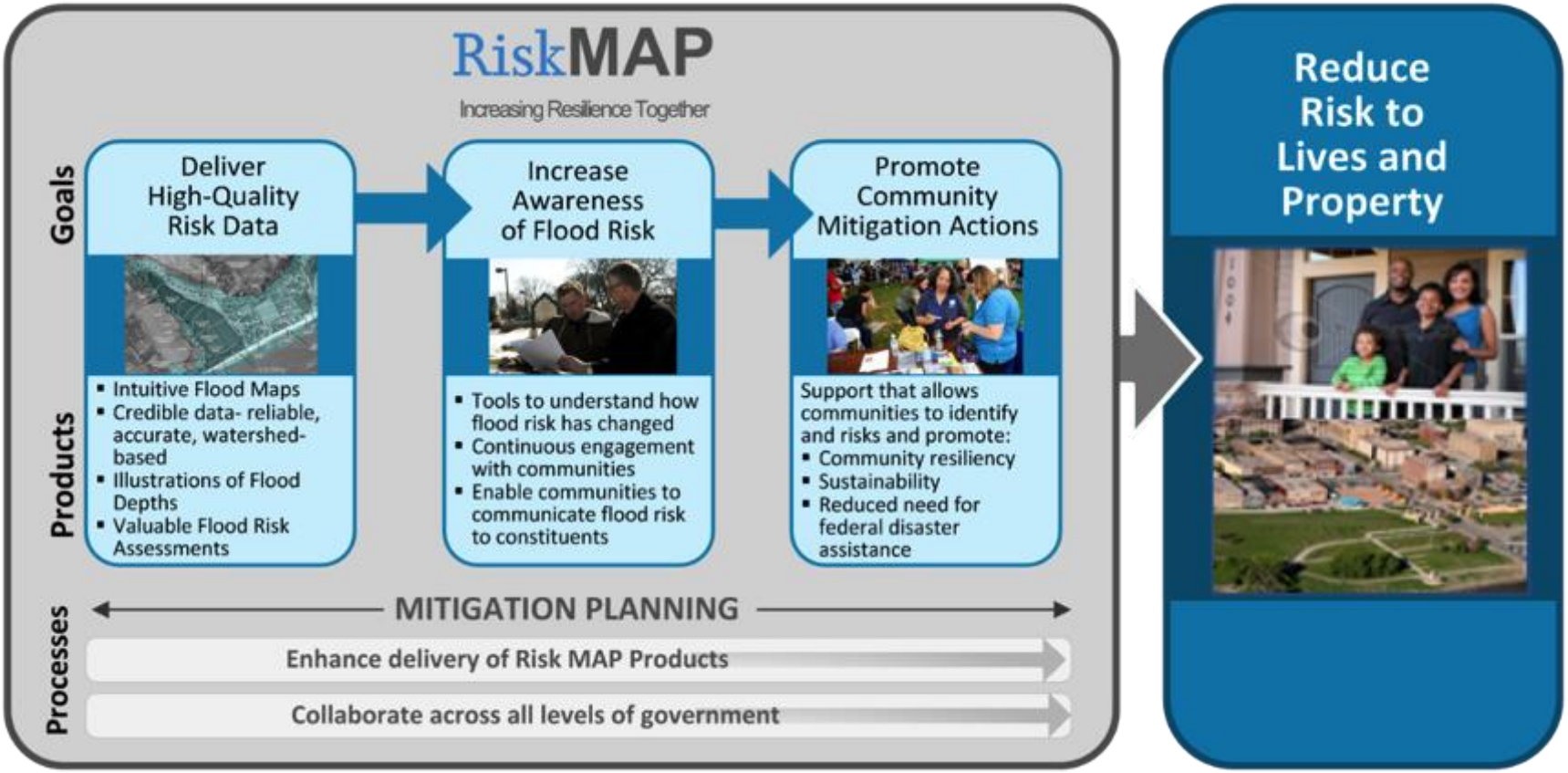
V Zones

- Open foundation on columns or piles
- Free of obstruction or use of breakaway walls/lattice work
- Parking, access, and storage
- Designed by a registered design professional
- Bottom of lowest horizontal structural member to or above BFE



Increase Mitigation Opportunities

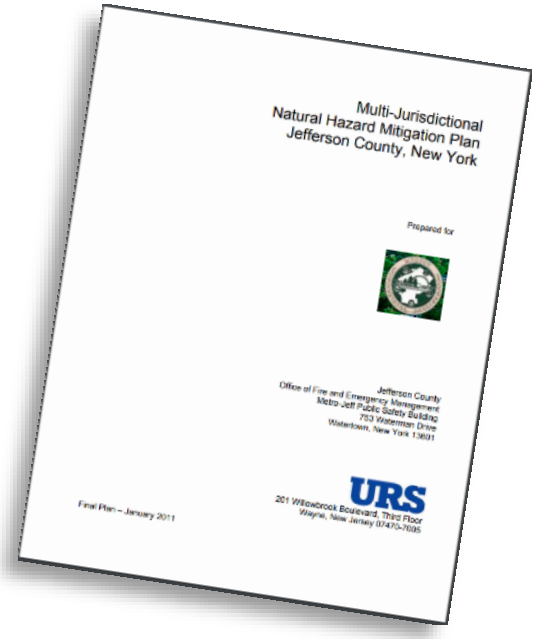
Goal: Stronger and Safer Communities



Proposed Mitigation Actions

From the 2011 Hazard Mitigation Plan

- Need to review existing local codes and ordinances to determine if amendments are needed to address hazards.
- Sewage treatment plant and water low lift critical facilities must be protected.
- Develop/implement storm water management plan and update drainage capacity to mitigate flooding aggravated by runoff.


Multi-Jurisdictional
Natural Hazard Mitigation Plan
Jefferson County, New York

Prepared for

Jefferson County
Office of Fire and Emergency Management
Metro Jeff Public Safety Building
753 Waterman Drive
Watertown, New York 13601

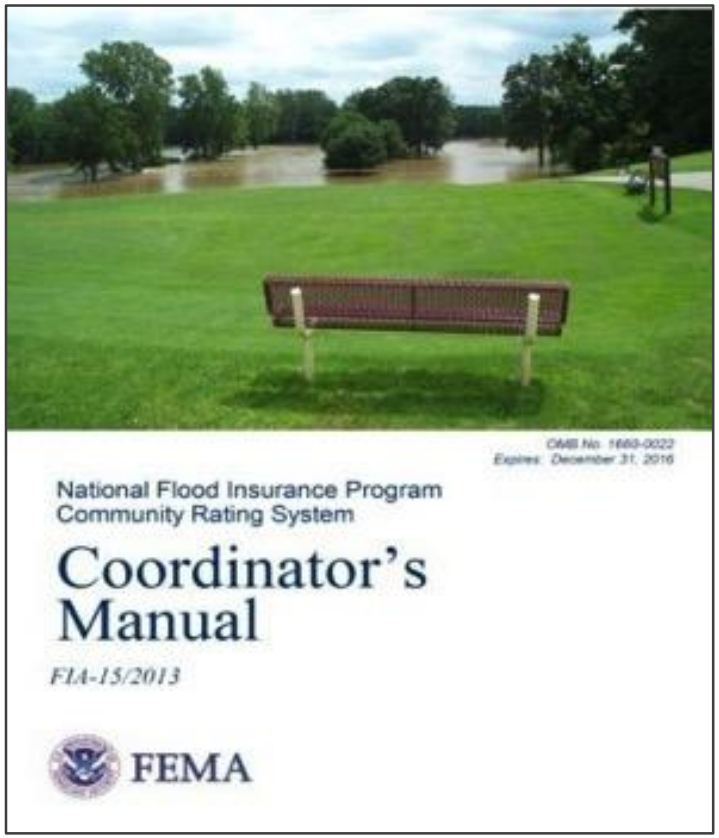
URS
201 Willowbrook Boulevard, Third Floor
Wayne, New Jersey 07470-7095

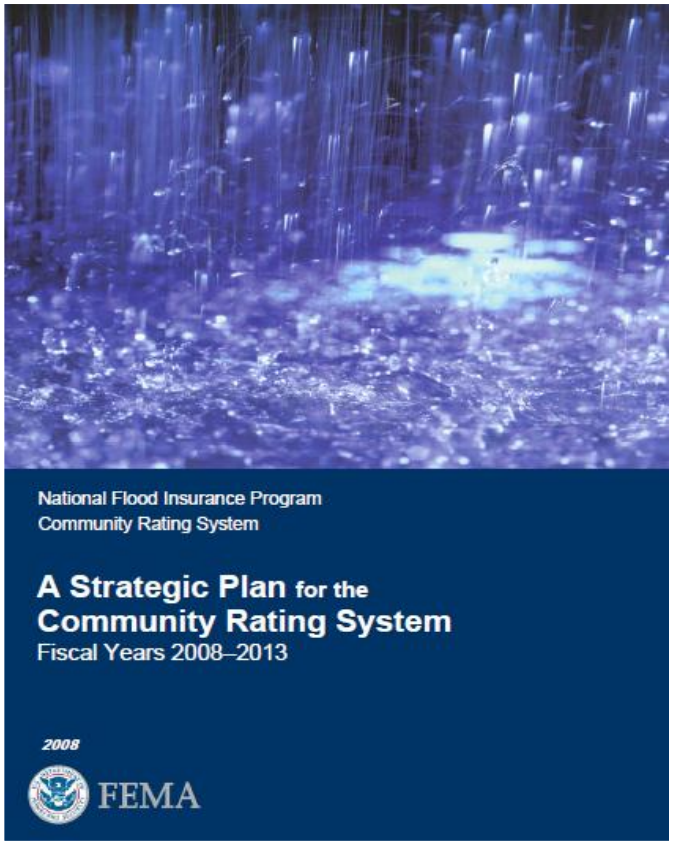
Final Plan – January 2011

Grants Overview

- **Grants available AFTER a disaster**
  - Hazard Mitigation Grant Program (HMGP)
- **Grants available BEFORE a disaster**
  - Pre-Disaster Mitigation (PDM) Program
  - Flood Mitigation Assistance (FMA) Program
- **FEMA awards grants to States, tribes, and territories**
  - Communities contact State Hazard Mitigation Office (SHMO) if interested in applying for HMA

NFIP Community Rating System Program Basics & Benefits

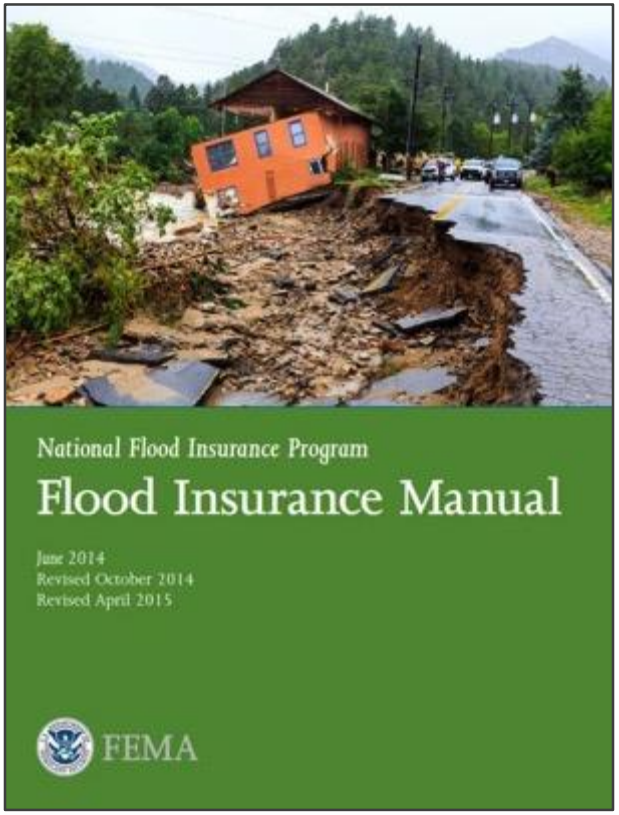




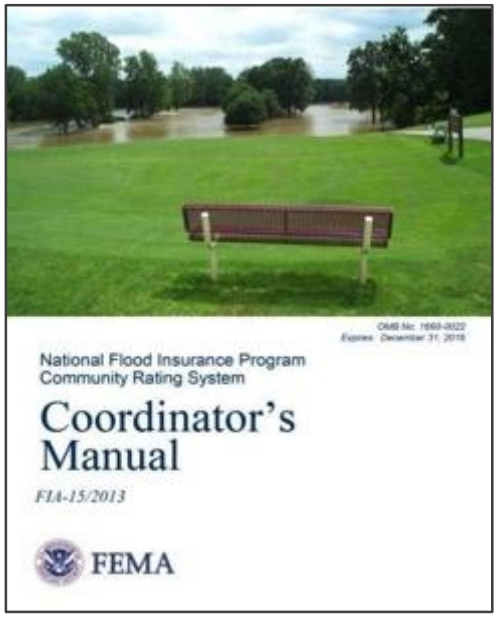
www.CRSResources.org

CRS Community Requirements

- Be in full compliance with the NFIP
- Implement activities
- Maintain Elevation Certificates
- Verification visit every 3 to 5 years
- Recertify each year
- Must meet Class prerequisites
    - Repetitive loss (Class 9)
    - BCEGS 5/5 or better (Class 6)
    - BCEGS 4/4 or better; 1 foot of freeboard and more (Class 4)



CRS Coordinator's Manual – Series Organization



100 – Program Overview

200 – Procedures

300 – Public Information Activities

400 – Mapping and Regulations

500 – Flood Damage Reduction Activities

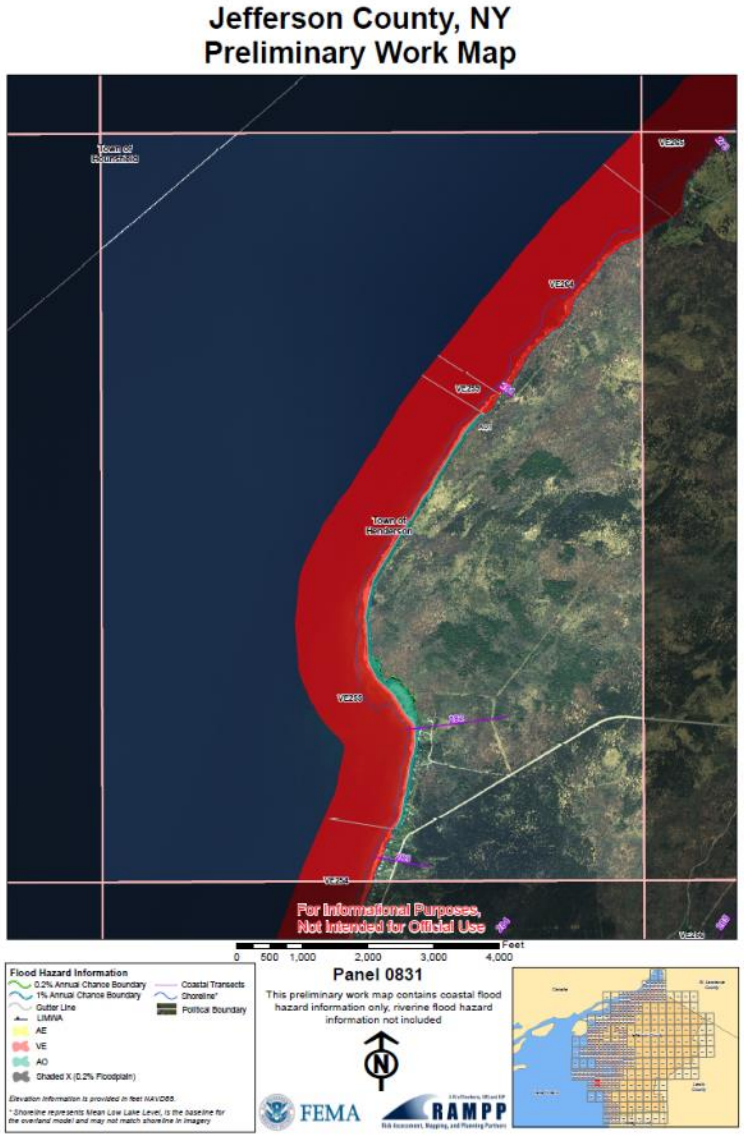
600 – Warning and Response

700 – County Growth Adjustment

Elements of a comprehensive community floodplain management program

Work Session:
Review floodplain mapping and flood risk products for validity.
Ask questions!

Workmap Data Viewer



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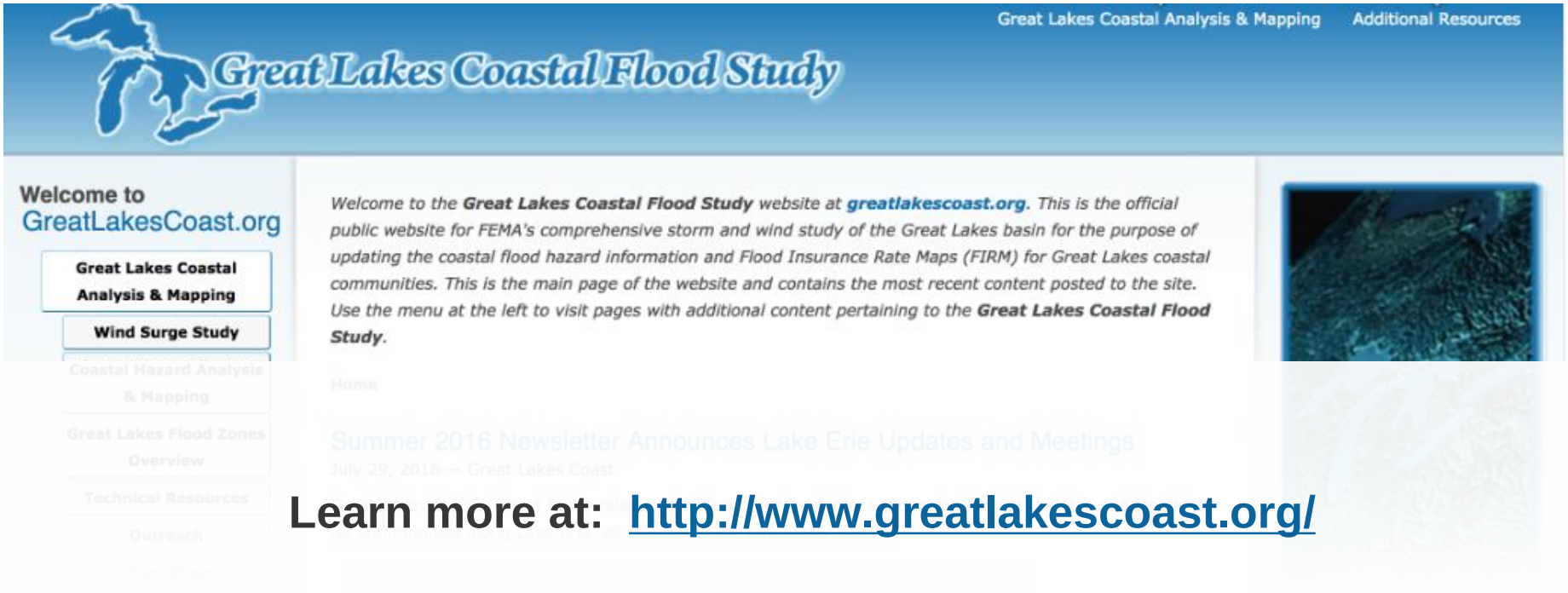
Questions about the Maps?



Learn more at: http://www.greatlakescoast.org/

Contact our office:

Emily Dhingra

301.820.3259

Emily.Dhingra@aecom.com

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FEMA Contacts

Andrew Martin
Region II Mitigation Liaison
212-680-8690 or andrew.martin@fema.dhs.gov

Marianne Luhrs
Region II Floodplain Management & Insurance Specialist
347-515-4874 or Marianne.Luhrs@fema.dhs.gov

Robert Schaefer
FEMA Region II Mapping Lead
212-680-8808 or robert.schaefer@fema.dhs.gov

Olga Gorbunova
Mapping Liaison, STAR II
646-490-3910 or olga.gorbunova@stantec.com

Amber Greene
CERC Liaison, Resilience Action Partners
646-522-9271 or amber.greene@ogilvy.com

Working Together to Build a Stronger and & More Resilient Jefferson County

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