RiskMAP
Increasing Resilience Together

Oswego 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

Oswego County

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?

OSWEGO COUNTY: SNAPSHOT

COMMUNITY	POPULATION	NFIP POLICIES	NFIP CLAIMS	FEMA CLAIMS PAID	CAV/CAC DATES	HAZARD MITIGATION PLAN
TOWN OF MEXICO	5,197	18	1	$73,394.43	CAV: 10/14/2016 CAC: N/A	Approved* and working on a plan update
TOWN OF SCRIBA	6,840	17	7	$27,343.00	CAV: N/A CAC: N/A	Approved* and working on a plan update
TOWN OF NEW HAVEN	2,856	4	N/A	$0	CAV: N/A CAC: N/A	Approved* and working on a plan update
CITY OF OSWEGO	18,142	23	11	$378,868.00	CAV: 12/29/2004 CAC: N/A	Approved* and working on a plan update

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Why Update your Flood Maps? (cont'd)

OSWEGO COUNTY: SNAPSHOT

COMMUNITY	POPULATION	NFIP POLICIES	NFIP CLAIMS	FEMA CLAIMS PAID	CAV/CAC DATES	HAZARD MITIGATION PLAN
TOWN OF MINETTO	1,659	13	3	$364,973.14	CAV: N/A CAC: 1/31/2012	Did not participate/ has no plan
TOWN OF OSWEGO	7,984	6	1	$516.00	CAV: 8/24/1992 CAC: 3/29/2017	Approved* and working on a plan update
TOWN OF SANDY CREEK	3,939	23	11	$16,647.00	CAV: 8/31/1992	Approved* and working on a plan update
TOWN OF RICHLAND	5,718	13	3	$3,964.00	CAV: 10/4/1994 CAC: N/A	Approved* and working on a plan update

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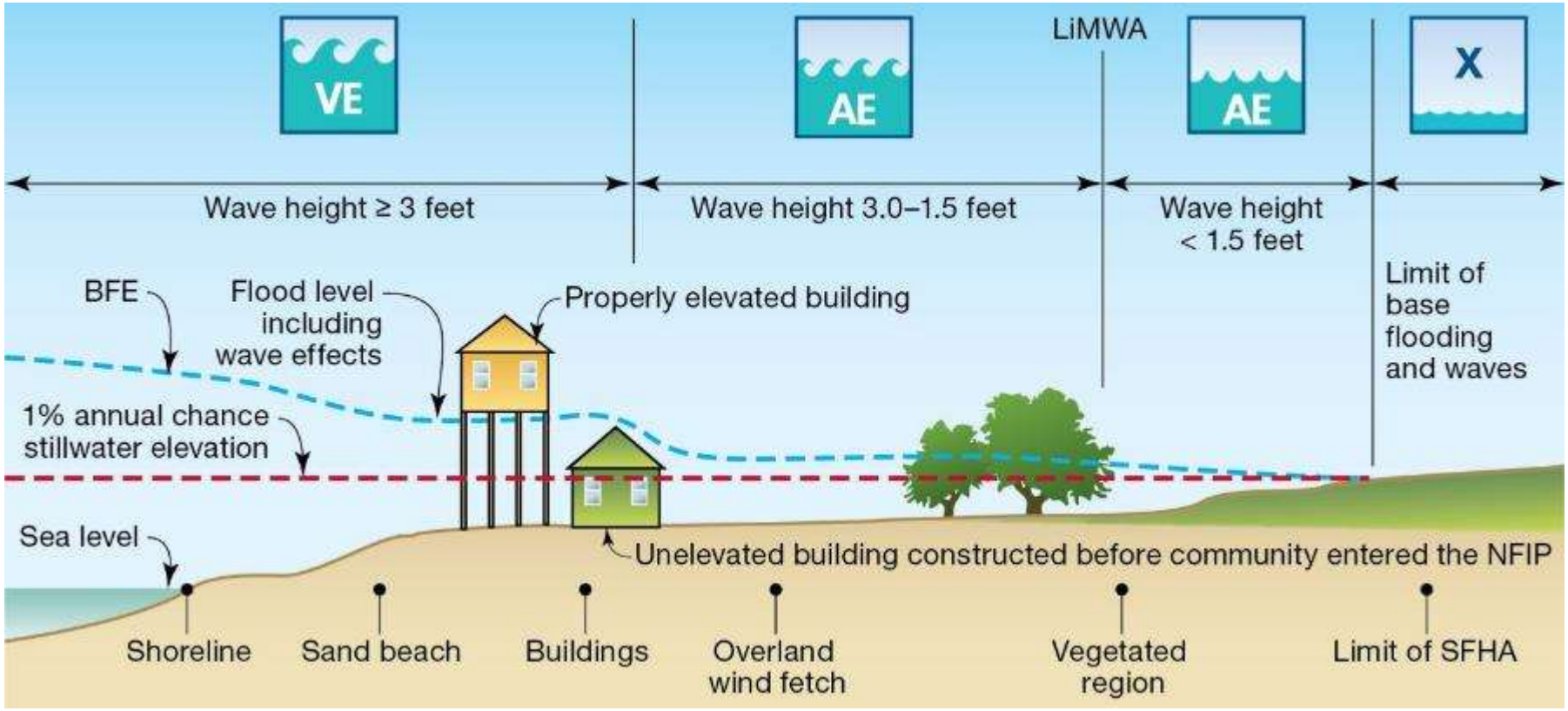
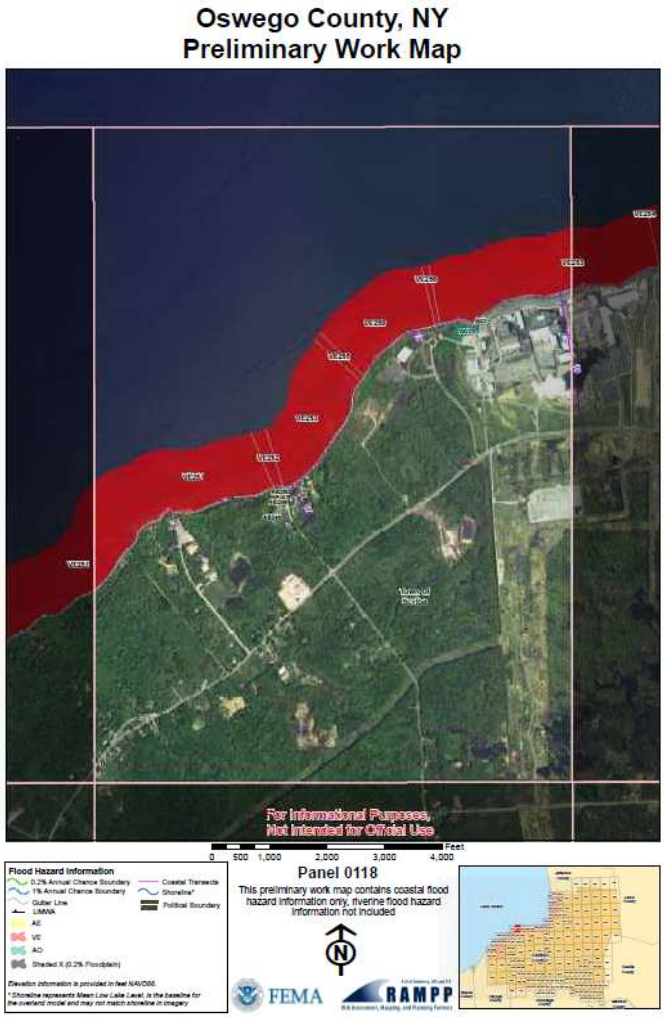
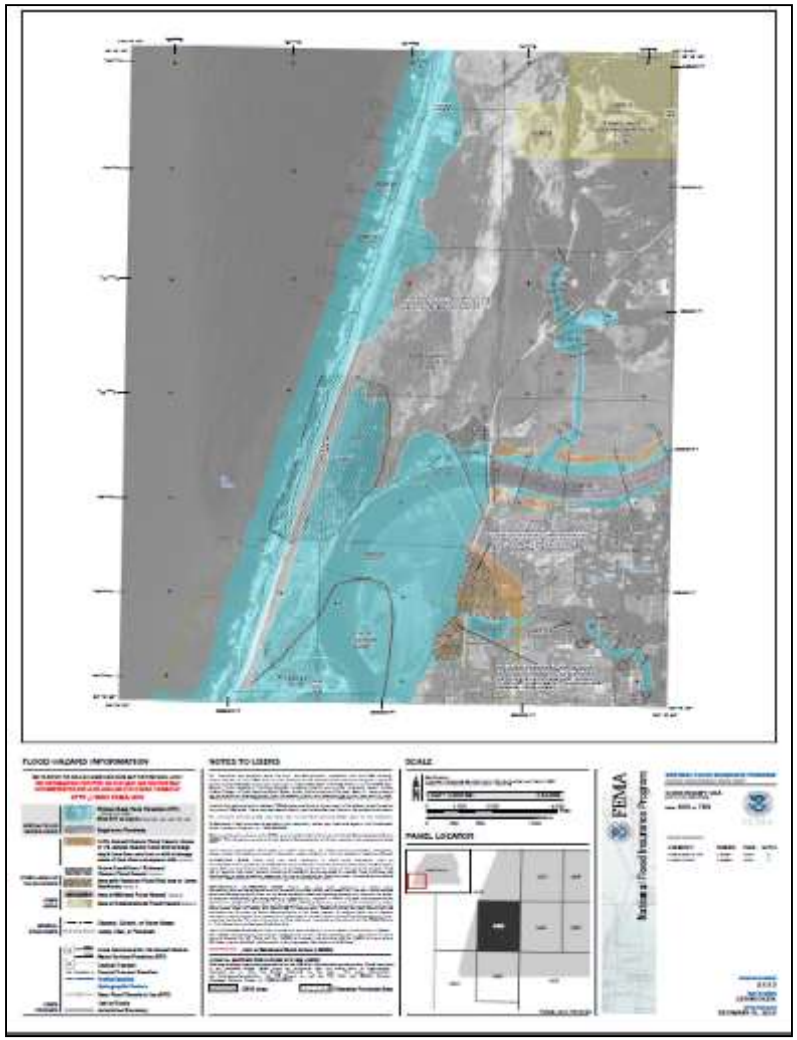
Detailed Coastal Mapping

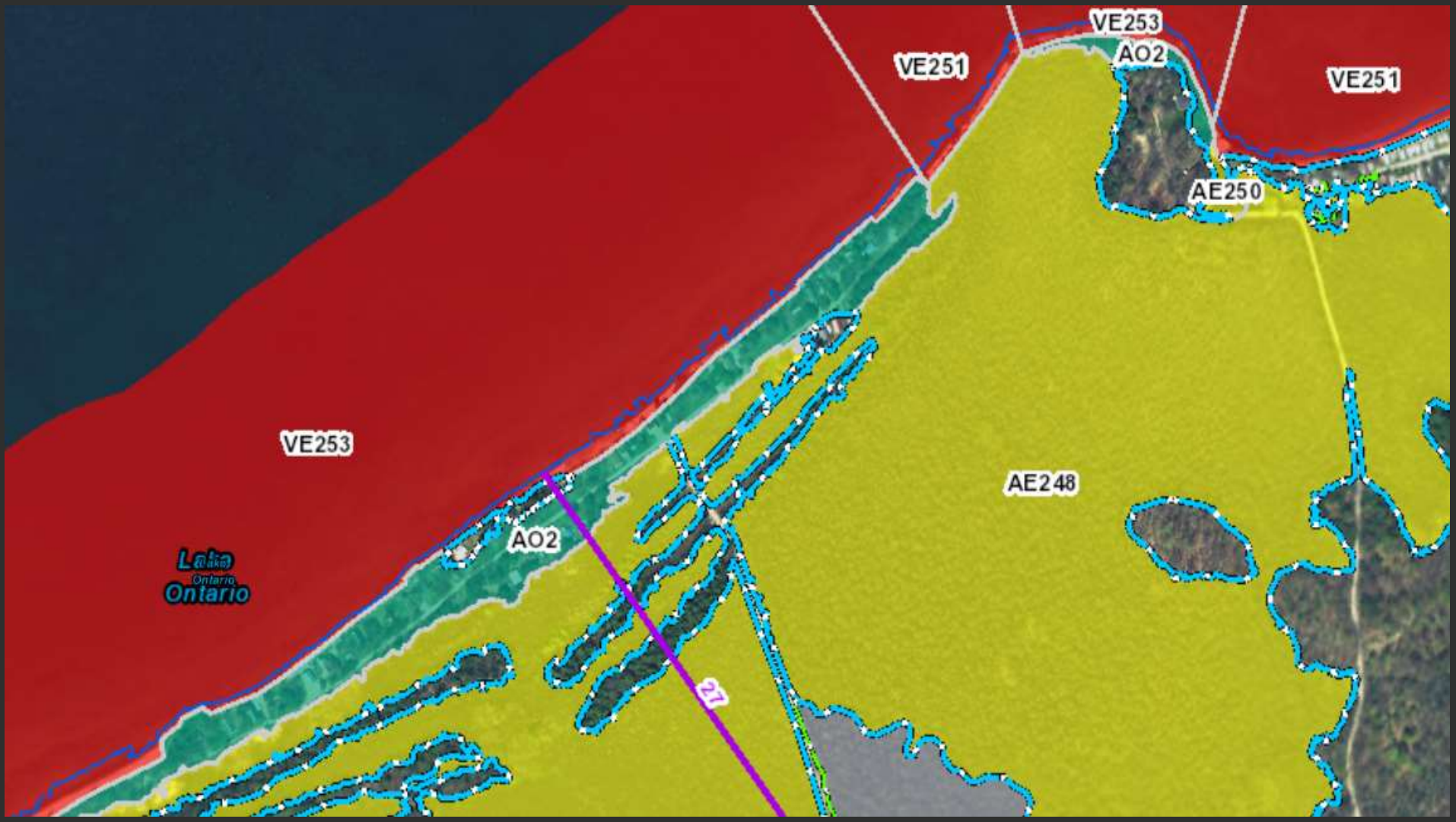


Preliminary Work Map vs. FIS/FIRM





WORK MAPS WILL NOT AFFECT FLOOD INSURANCE REQUIREMENTS OR COSTS



Modeling the Special Flood Hazard Area (SFHA)

VE, AE, and AO Zones are "100-year floodplain" with a **1-percent-annual-chance of flood**

- Insurance is **required** if you have a federally backed mortgage or received federal disaster assistance
- Informs building code standards

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

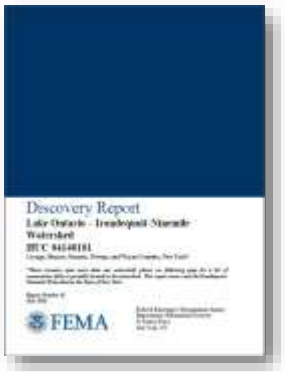
Identify mitigation needs and priorities

Update local plans, codes, and ordinances

Oswego County

The Risk MAP Process and Scope

Discovery Report 2016



- A few studies are outdated. Base Flood Elevations do not reflect dredging, depth or higher ground added around water bodies.
- Flooding and erosion of Lake Ontario are major concerns, affected by changes in precipitation.
- Homes along the lake have been inundated in the past, and have cost millions in property damage.

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

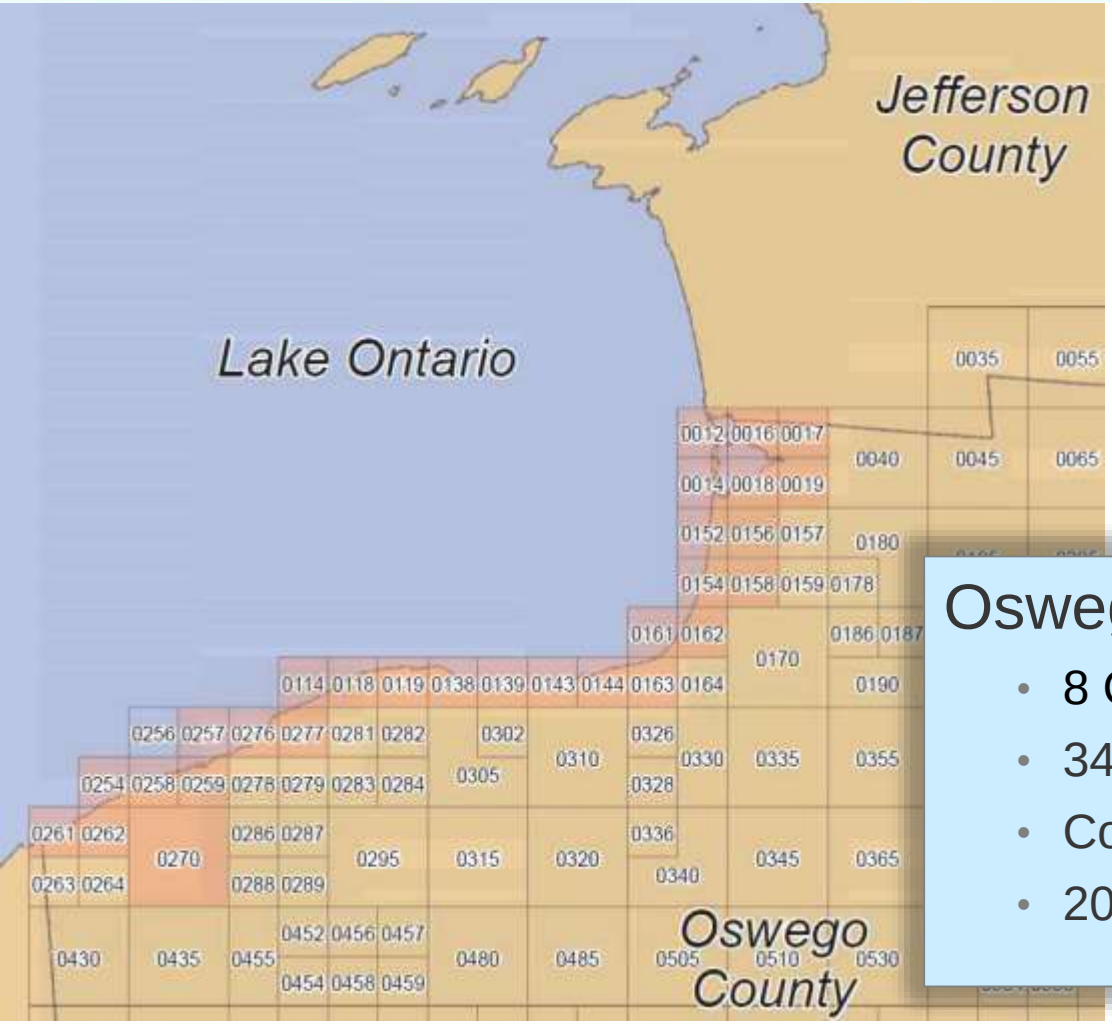
"Letter of Final Determination"

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



Oswego County

- 8 Coastal Communities
- 34 miles of shoreline (Lake Ontario)
- Coastal Storm Flooding update
- 2014 FEMA Lake Ontario 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

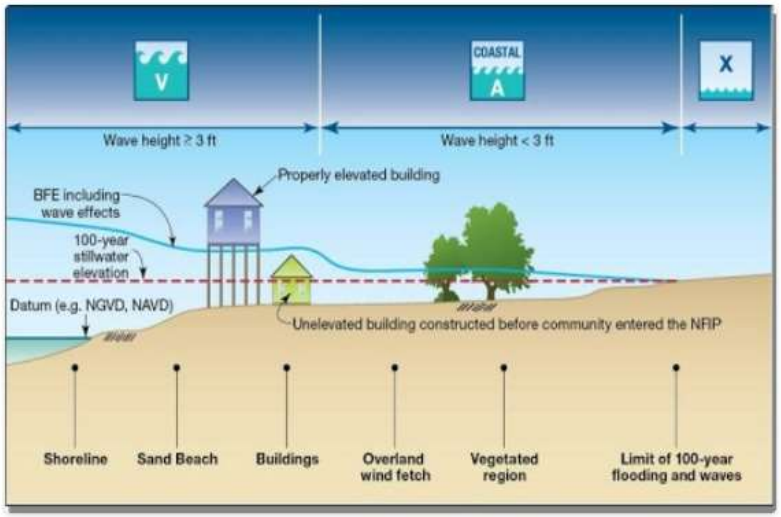
Report can be found at www.greatlakescoast.org

Effective vs New Coastal Study

Coastal Study Component	Effective Study (2013) – Previous Studies (1977 & 1999)	New Study (2017)
Topographic data	2007 Oswego County LiDAR	2014 FEMA Lake Ontario LiDAR
Stillwater Elevation (SWEL)	Gage Frequency Analysis (USACE 1988)	Lake Ontario Storm Surge Model - 2012
Modeled transects	0	56
Wave setup	No	Yes
Wave runup	Yes (Town of Richland)	Yes
Limit of Moderate Wave Action (LiMWA)	No	Yes

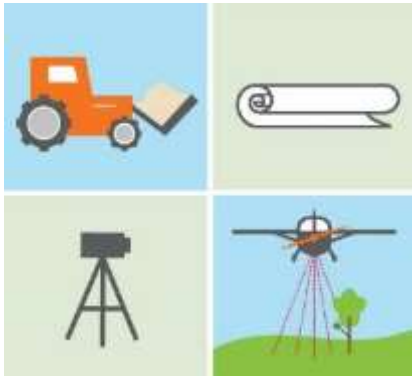
Study Approach

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



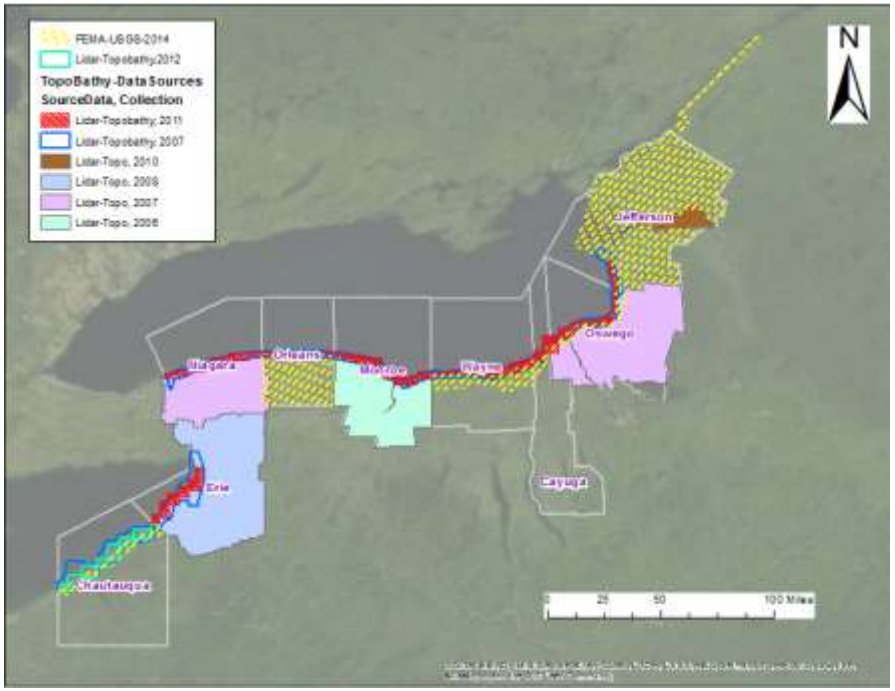
- Local/County Level Activities
  - Mapping level tasks performed at county level
  - Nearshore wave transformations
  - Wave runup
  - Overland wave propagation

Light Detection and Ranging (LiDAR)



Terrain Dataset

Used for modeling & mapping

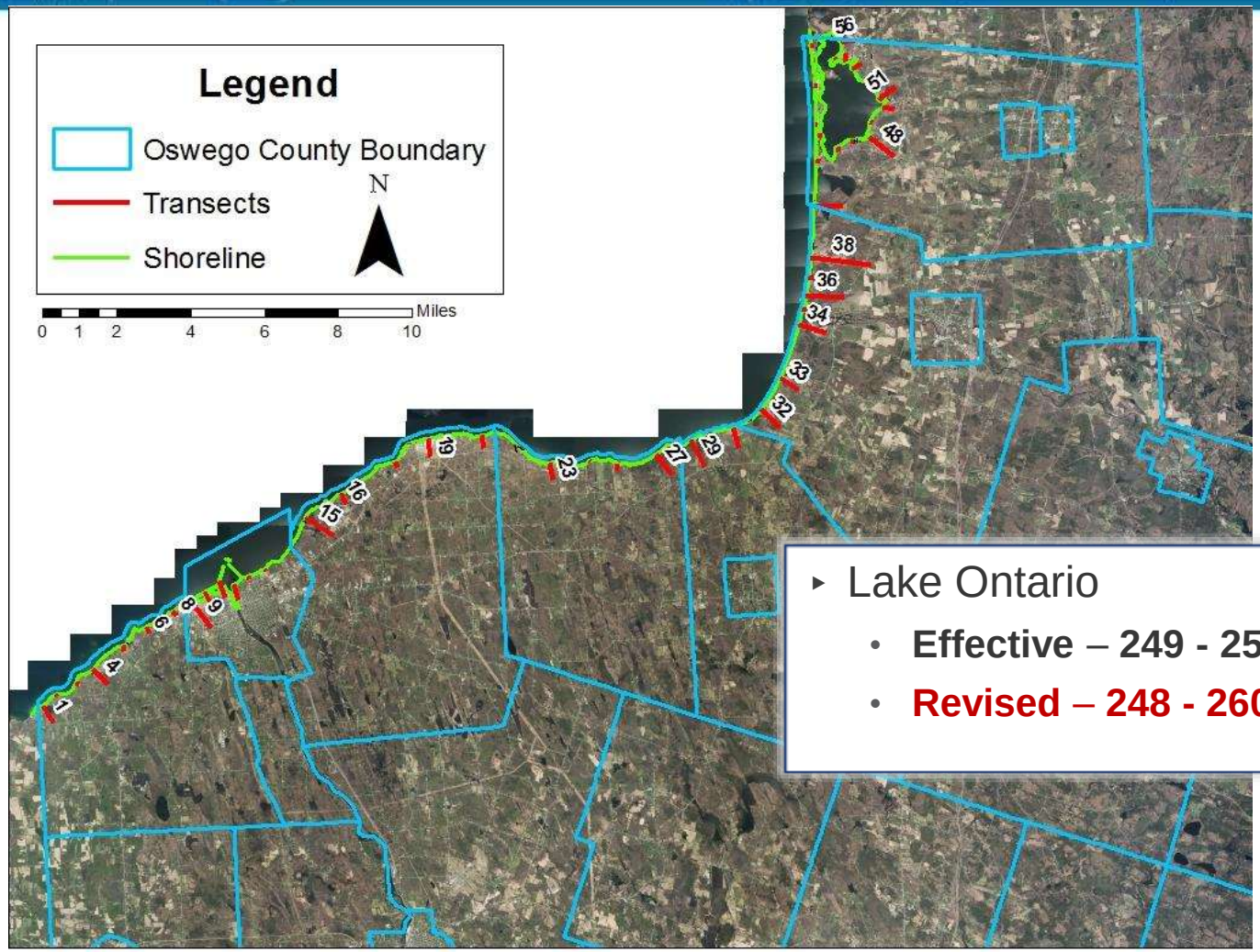


LiDAR Data Sources

2014 FEMA Lake Ontario 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

Storm Surge From 12-8-2009

Oswego County Transects



- Lake Ontario
  - **Effective** – **249 - 252** feet NAVD 88
  - **Revised** – **248 - 260** feet NAVD 88

Field Reconnaissance

Oswego County, NY *Transect:* TR03 *Review Location:* 03_1 *Team:* Joel Plummer & Lisa Turcios *Date:* 6/23/2015 *Time:* 12:35:00 PM	
Location Description	Camp Hollis, Health Camp Rd
Latitude, Longitude	N43°25'38", W76°35'49"
Building Description	N/A
Vegetation Description	trees, bluff top, Diameter 6 in, Height 40 ft, Spacing 5 ft
Marsh Description	N/A
Coast Description	Sand, gravel, cliff: Mix of sandy and gravel beach 30 ft wide; gravel size 1/4 in -3 in. Bluff 15-25 ft high. Erosion concerns marked on oblique photo.
PFD	No
Fetch Description	Open Fetch

Description: shoreline

Lat,Lon: N43°25'38", W76°35'49"

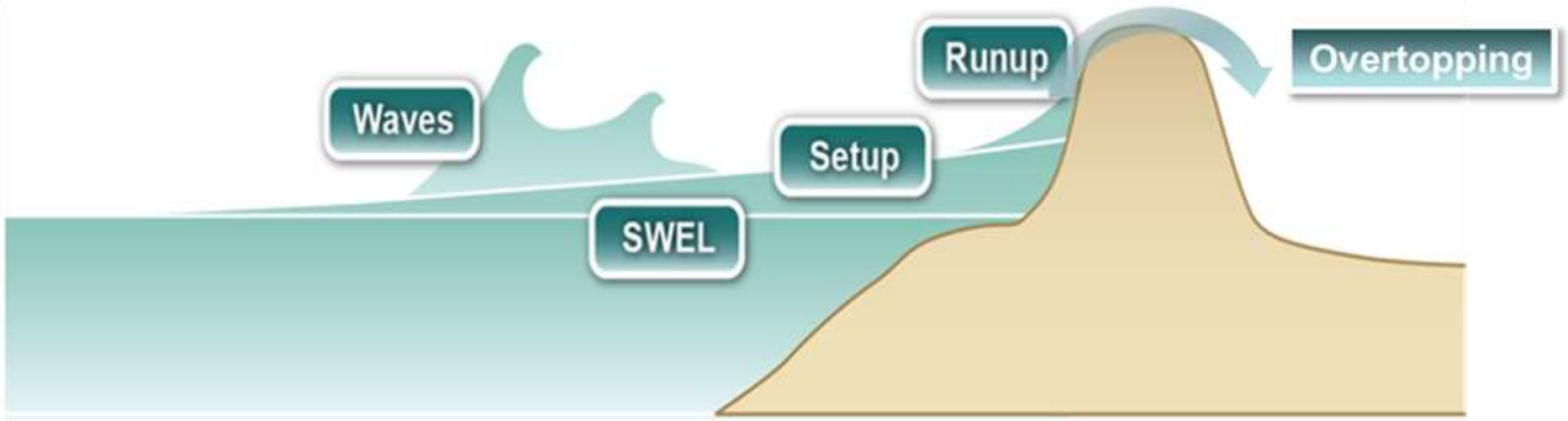
Description: shoreline

Lat,Lon: N43°25'39", W76°35'48"

Description: shoreline_top_of_bluff

Lat,Lon: N43°25'39", W76°35'47"

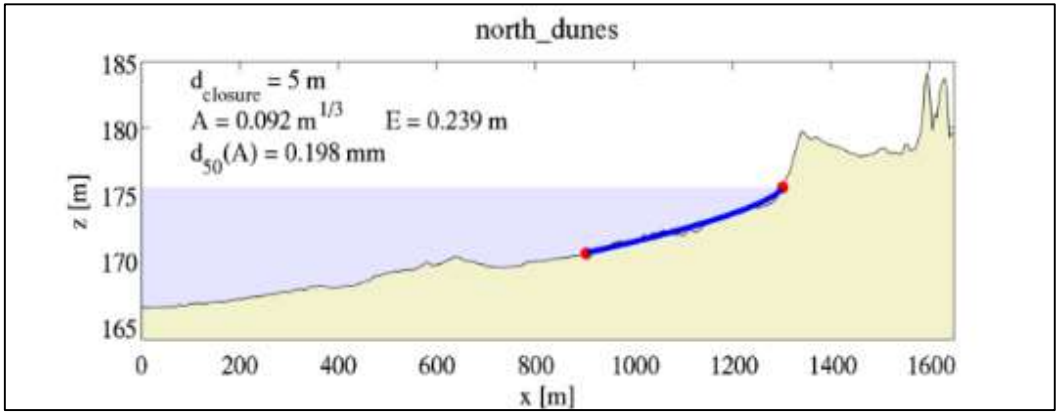
Coastal Base Flood Elevation

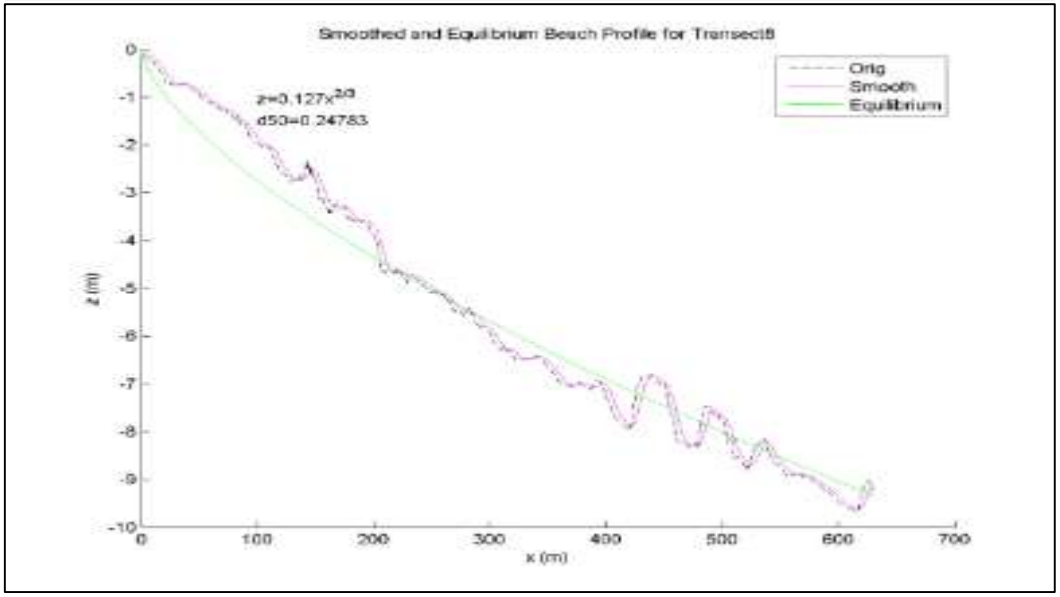


Erosion in the Great Lakes

USACE CSHORE model

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





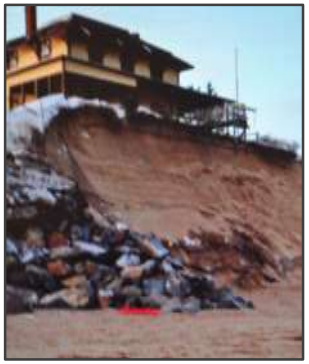
U.S. Geological Survey (USGS) Study

USGS
science for a changing world

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.

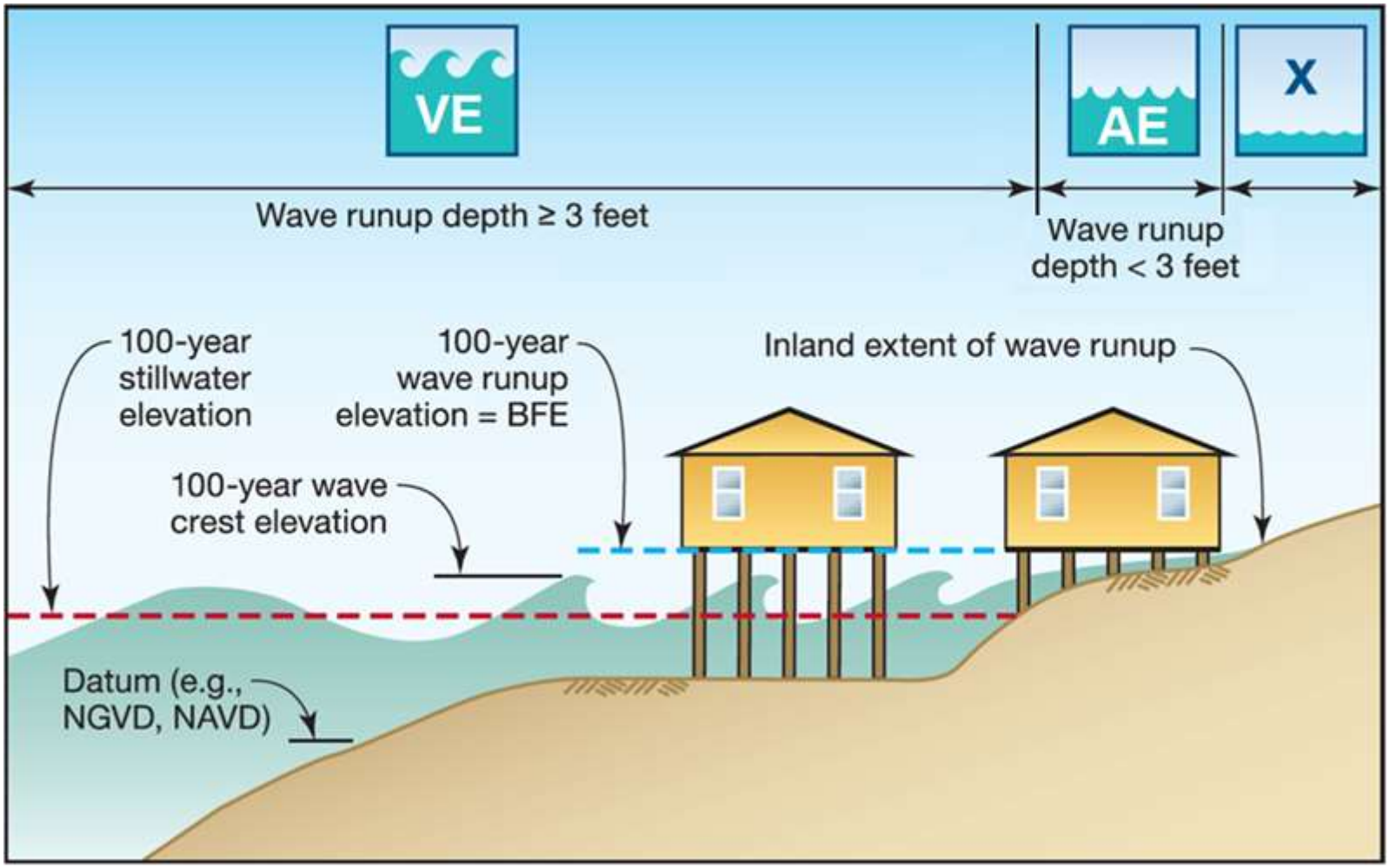
Coastal Erosion and Scour



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

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
  - 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

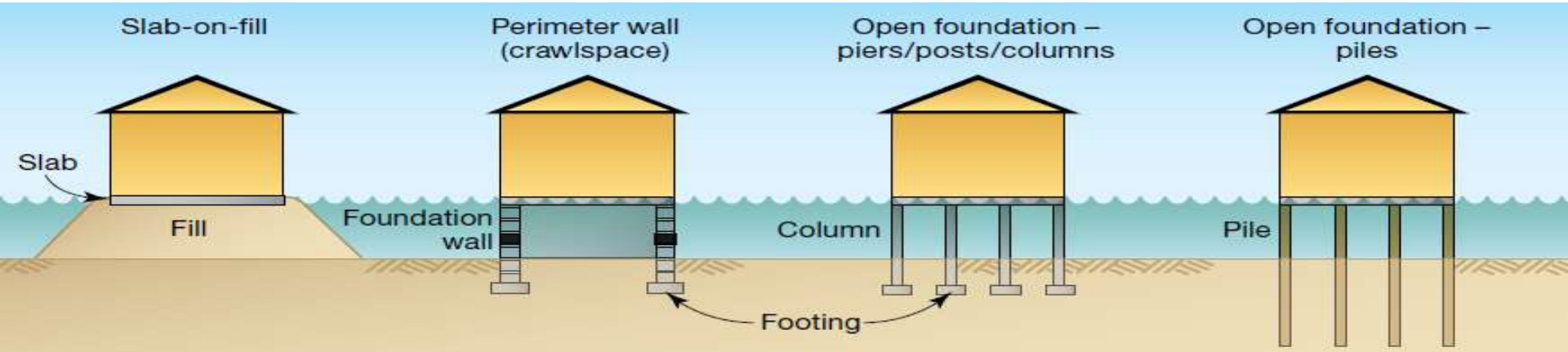
Development Requirements

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

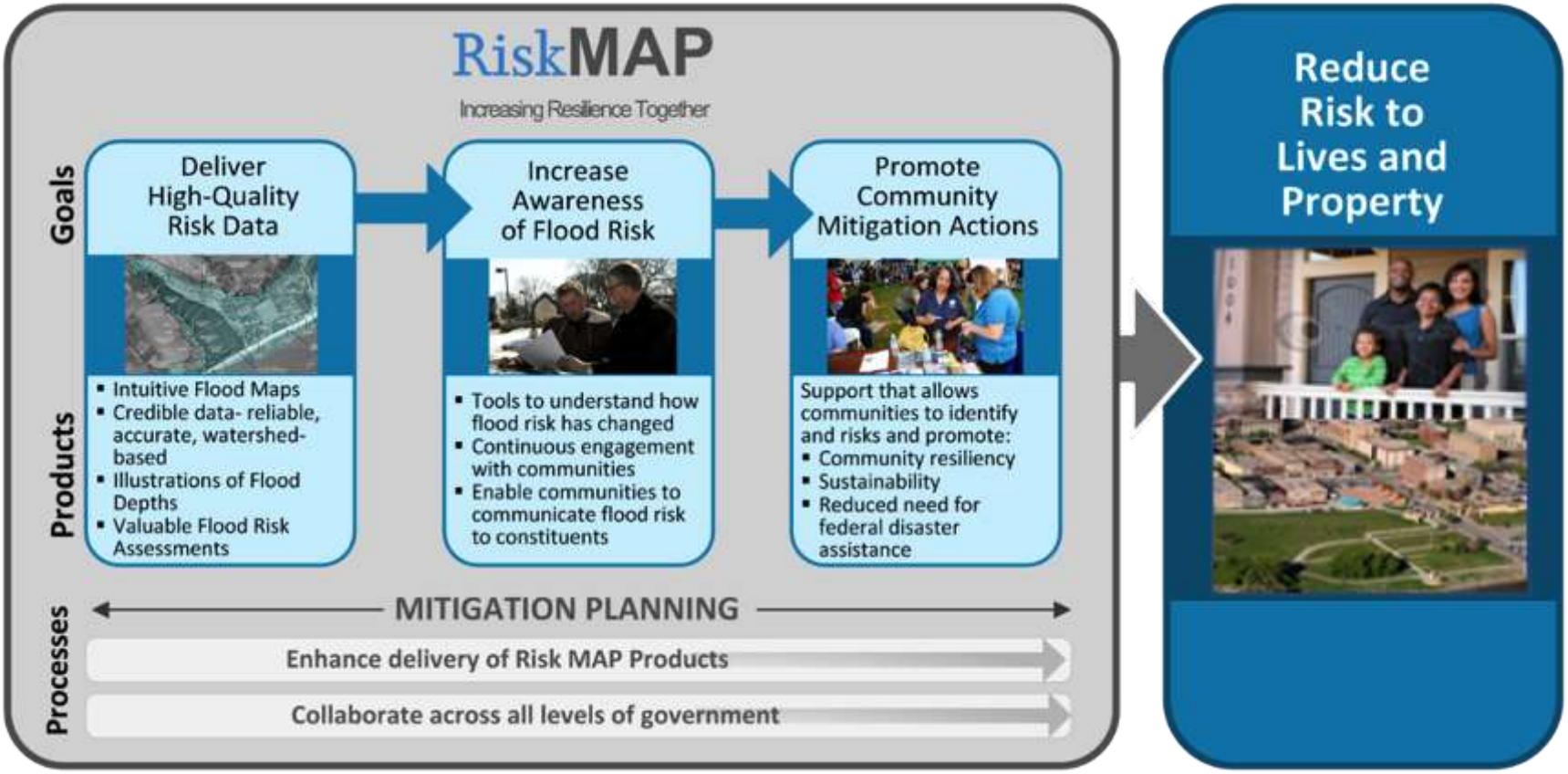
V Zones

- 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

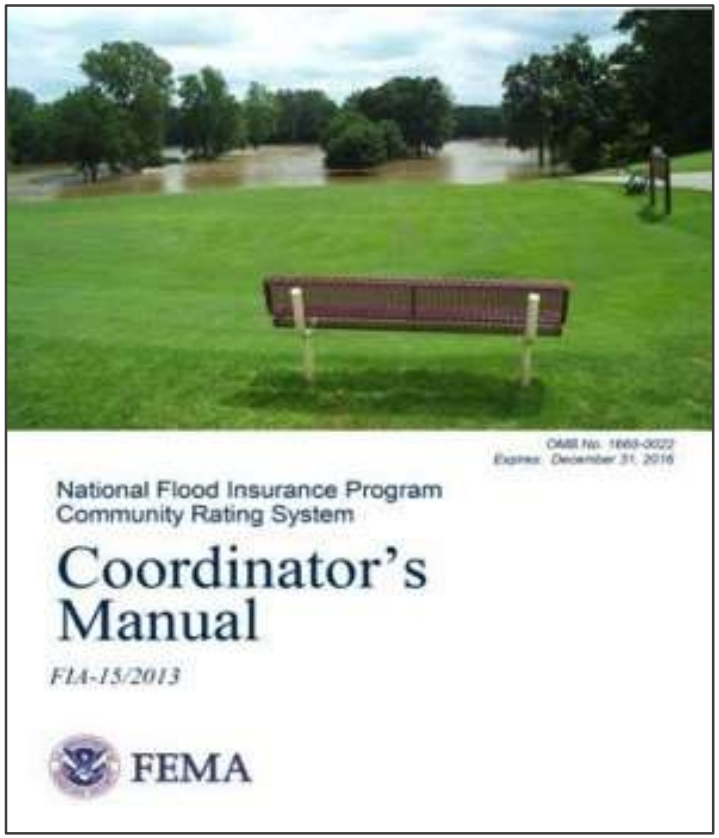
From the 2012 Hazard Mitigation Plan

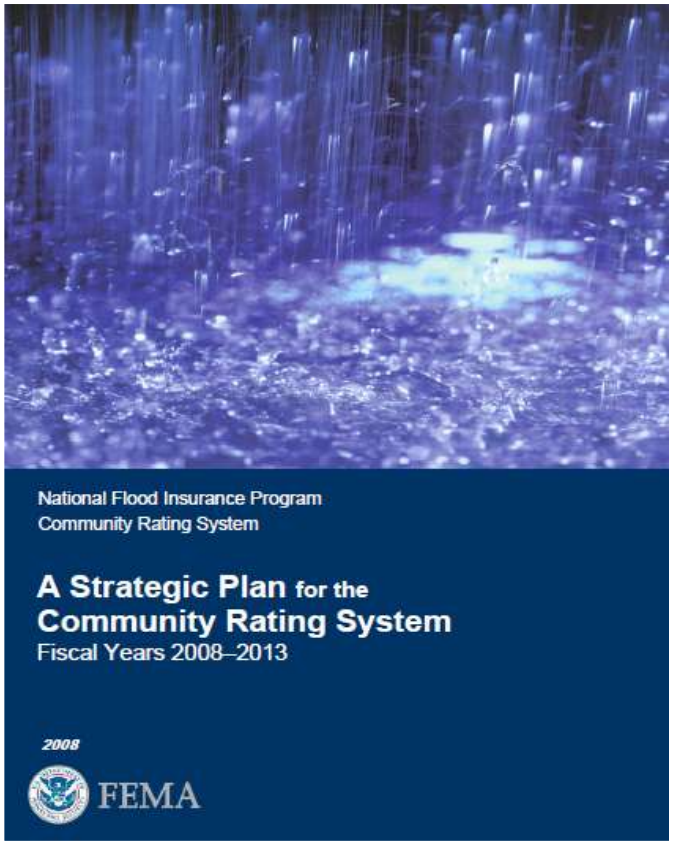
- Building setback will be increased along Lake Ontario to reduce potential erosion and its impacts. Multiple municipalities proposed this effort.
- Better enforcement of zoning regulations.
- Implement response protocols to remove ice/debris jams from waterways.
- Conduct outreach and public education pre-/post-hazard event.

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

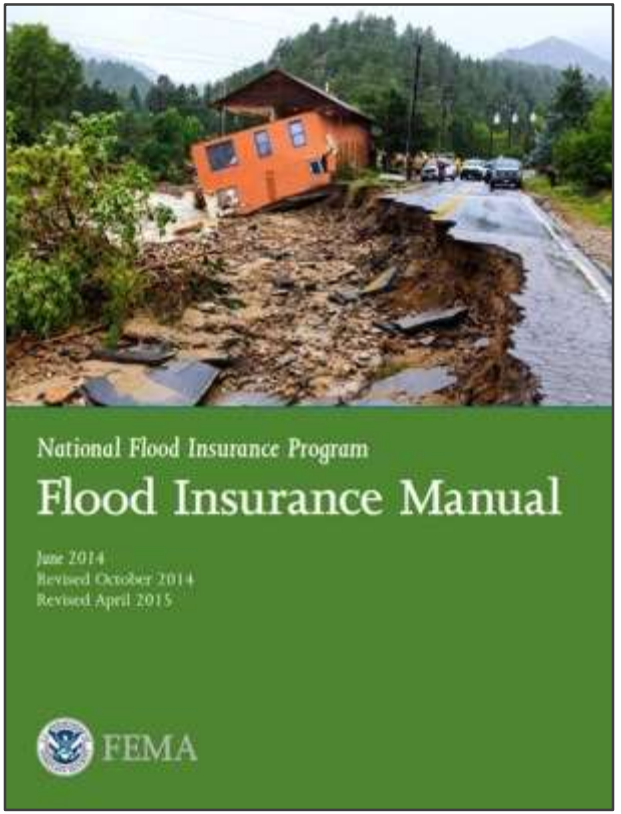




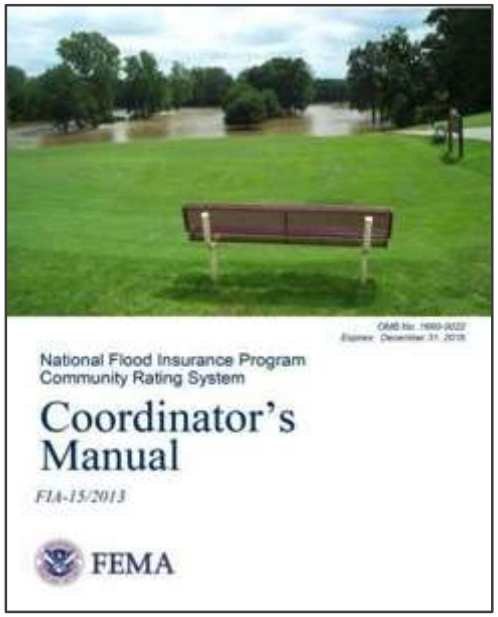
www.CRSResources.org

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

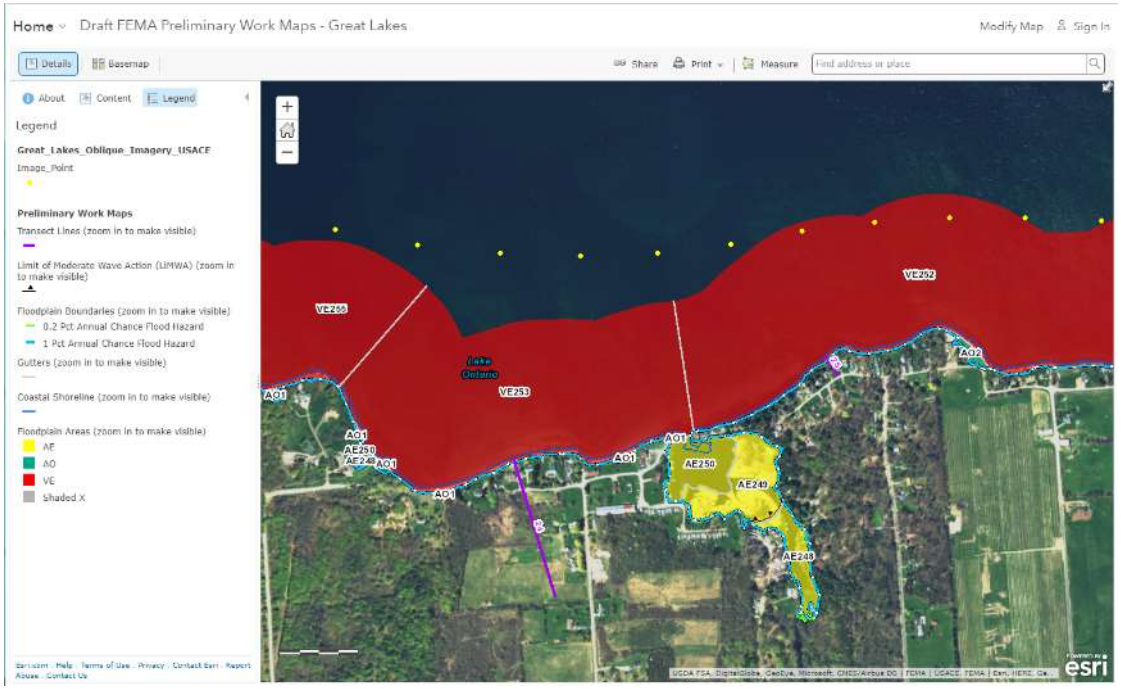
600 – Warning and Response

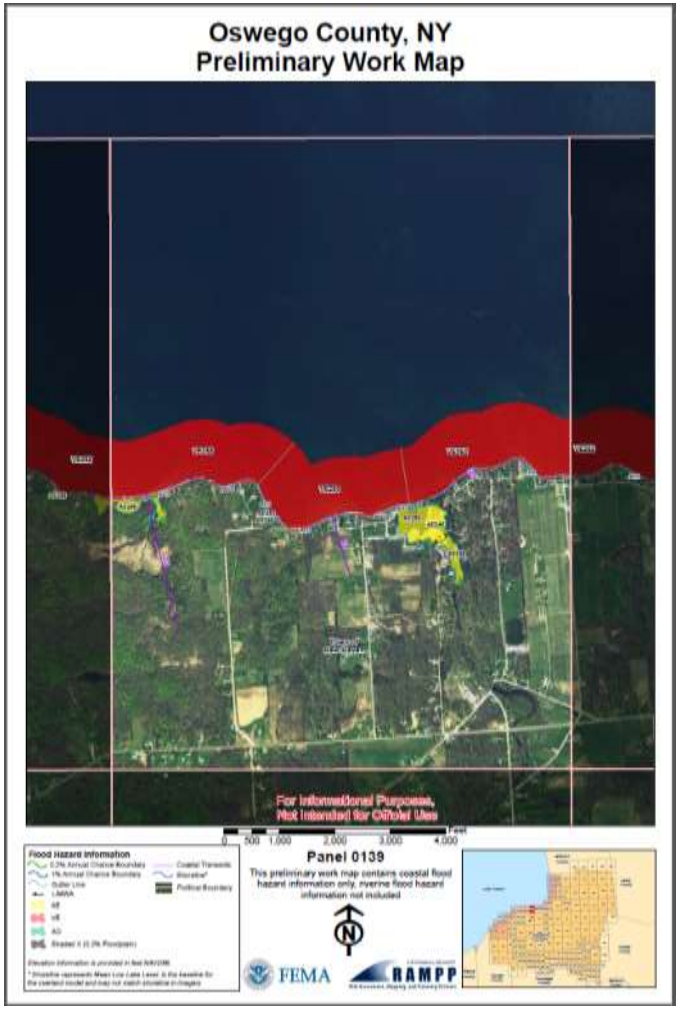
700 – County Growth Adjustment

Elements of a comprehensive community floodplain management program

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

Workmap Data Viewer





Questions about Maps?

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

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