

Discovery Report Appendix M

Discovery Meeting Presentation

Lake Erie – Headwaters to the

Cattaraugus Watershed

HUC 04120102

Allegany, Cattaraugus, Erie and Wyoming Counties, New York

July 2016



FEMA

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



FEMA

Discovery Meeting: Lake Erie

FEMA REGION II

June 10 & 11, 2014

Lake Erie Contributing Watersheds

RiskMAP

Increasing Resilience Together



Introductions and Who's Here

Project Team

- *FEMA Region II*
- *RAMPP*

Local Stakeholders Invited

- *Local Community Officials*
- *Non-Governmental Agencies*
- *Private Sector*
- *People/Organizations discussed during WebExs and on Data Worksheets*

Agenda

- **Introductions and Who's Here**
 - Purpose of this Meeting
- **Risk MAP Program Overview**
 - Discovery Process
 - Lake Erie Coastal Study
- **Mitigation Planning and Grants**
 - Risk Communication
 - NFIP and Community Rating System
- **Next Steps**
- **Group Breakout Discussions**

Purpose of This Meeting

- Explain the Discovery process
 - Share your concerns about flood risk
 - Share any additional flood risk data you may have
- Discuss the Lake Erie Coastal Flood Study
- Discuss how FEMA flood risk products can facilitate mitigation actions within your community

Shifting from MapMod to Risk MAP



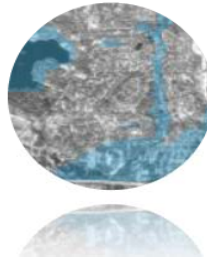
Map
MODERNIZATION
Federal Emergency Management Agency

- Map Modernization used increasingly-available technology to increase the quality, reliability, and availability of flood hazard maps and data
- It focused on digitizing maps to provide timely, accurate information to community planners



RiskMAP
Increasing Resilience Together

Risk MAP further enhances the maps, involves communities during the assessment and planning stages, and guides and encourages them to communicate risk to their constituents



Risk MAP = Risk Mapping, Assessment, and Planning

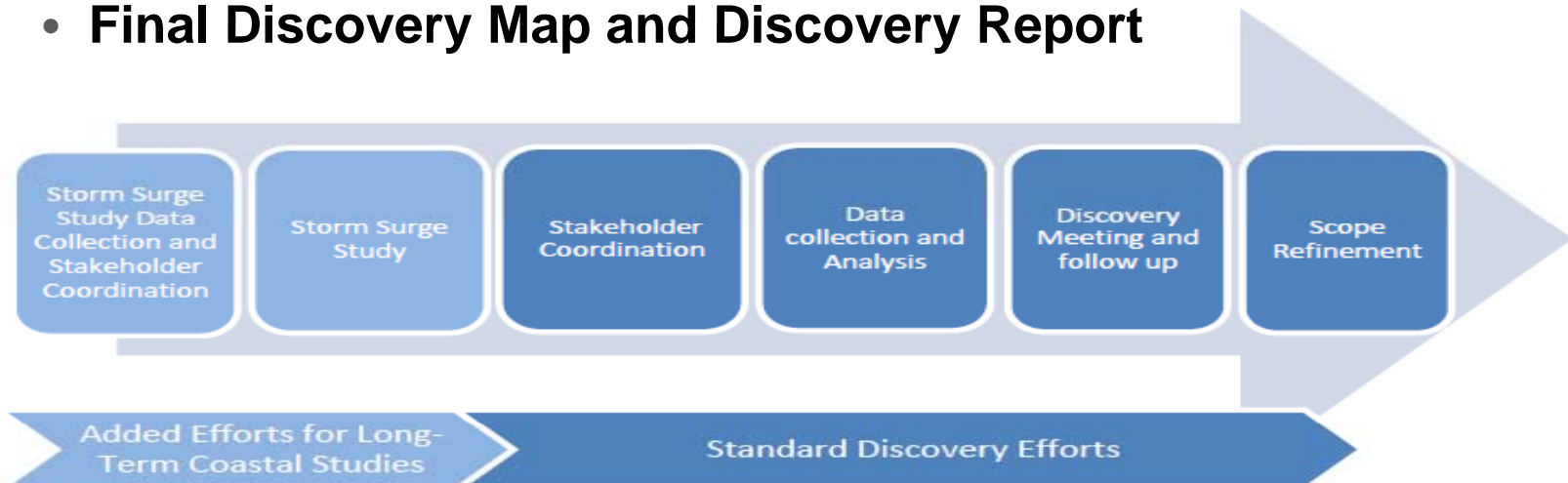
What is Risk MAP (Risk Mapping, Assessment and Planning)?

- Through collaboration with State, Local and Tribal entities, Risk MAP aims to deliver quality data that increases public awareness and leads to action that reduces risk to life and property.
- You can use Risk MAP tools and data to:
 - Improve and implement your Hazard Mitigation Plans
 - Influence decisions about development, ordinances, and flood mitigation projects
 - Communicate with citizens about flood risk



Discovery Process

- FEMA and communities “discover” and assess flood risk data
- Discovery Data Collection Period
 - Stakeholder coordination and data analysis
- Discovery Meeting
 - Initial Discovery Map
- Post-Meeting Review
 - Final Discovery Map and Discovery Report



Discovery Products and Results

- **Discovery Report**

- Including summary of data, analysis, meetings, and action items or decisions

- **Discovery Map**

- Visual representation of meeting outcomes and feedback from stakeholders

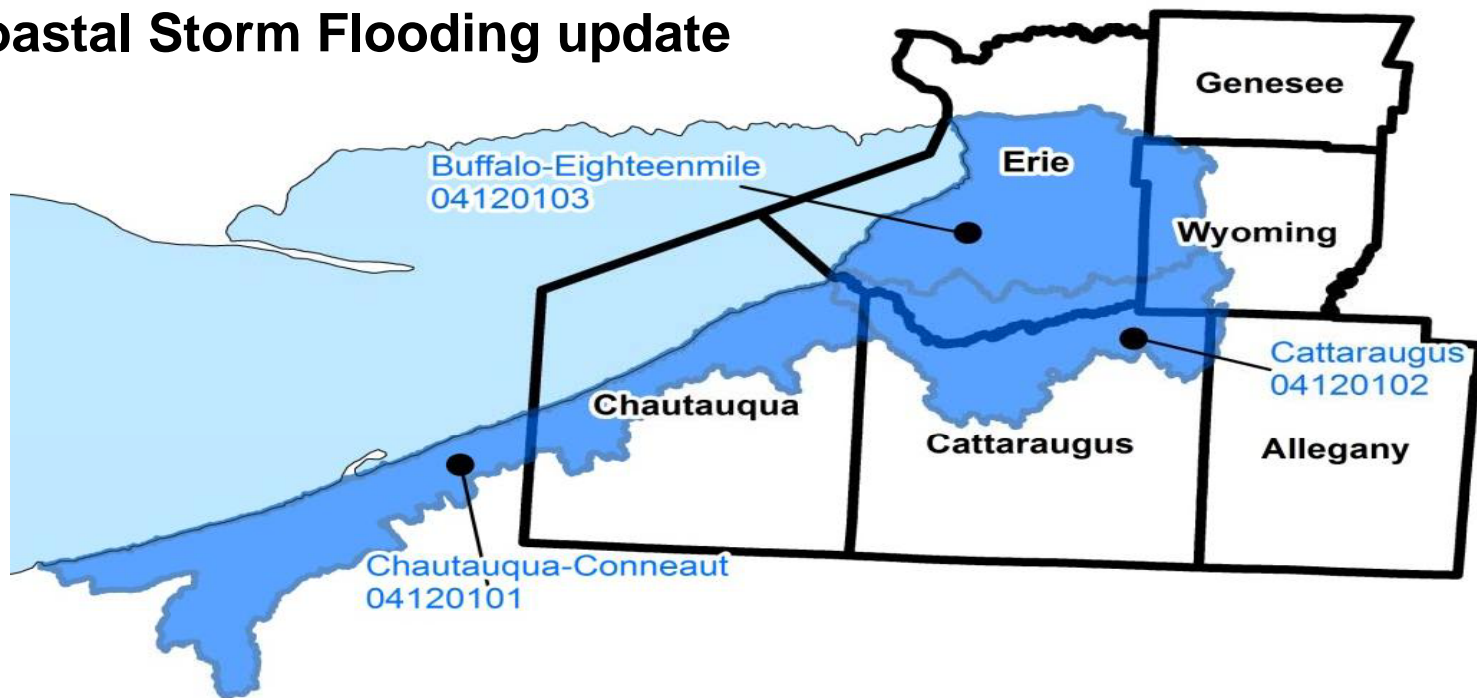
- **Project Study Areas**

- **National Metrics**

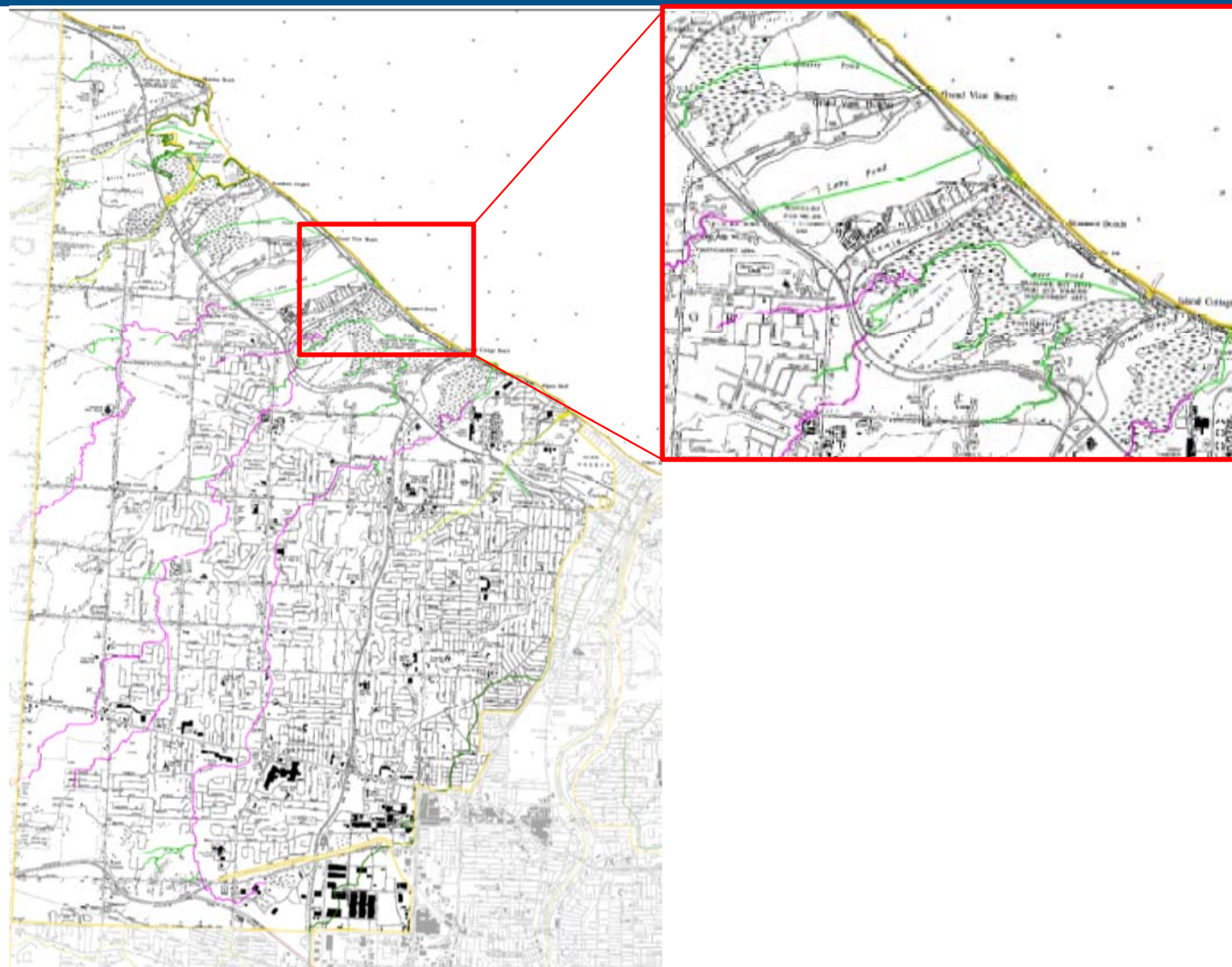
Study Area

■ Lake Erie Watersheds

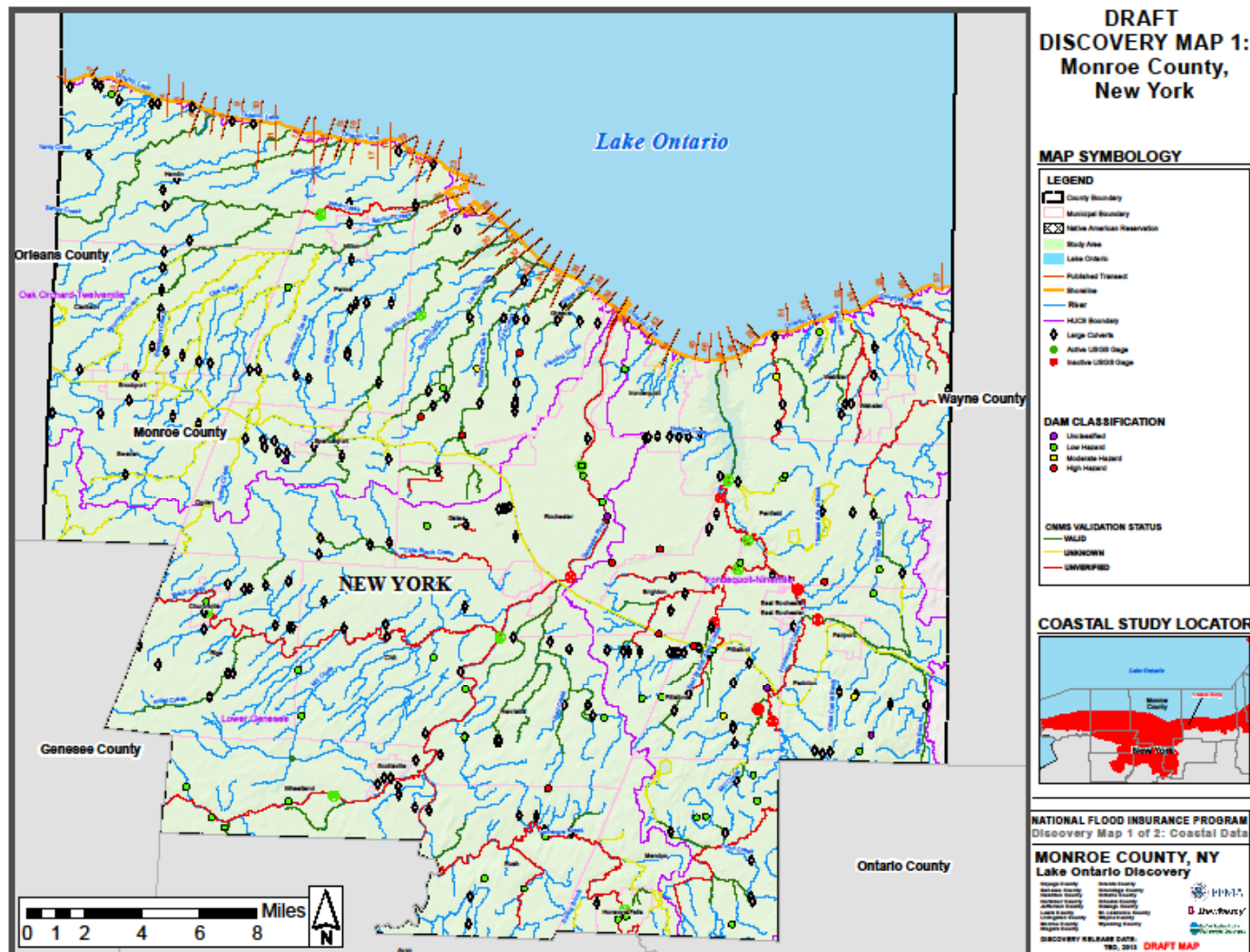
- 3 watersheds
 - 6 counties
 - 81 Communities
- Coastal Storm Flooding update



Discovery Map: Cataloging Mapping Needs



Discovery Map: Cataloging Mapping Needs



Data Collection and Collaboration

- **Discovery is the process of data mining, collection, and analysis with the goal of investigating a flood risk or mitigation project or risk discussions within a watershed.**
- **The following data was researched and reviewed before the meeting:**

- CRS, NFIP status
- MNUSS –flood hazard mapping needs
- High Water Marks
- Dams and/or levees
- Mid-term Levee Inventory (MLI)
- Topo/Elevation Data
- Gages
- NHD streamline
- Various GIS data for the discovery products
- Structure Info (bridges, culverts)

- Average Annualized Loss data
- Repetitive Loss Data
- LOMCs
- Effective Data (FIS, DFIRM, FIRM)
- List of Communities & Contact Info
- Hazard Mitigation Plan (online)
- Hazard Mitigation Assistance Program grants received
- Individual or Public Assistance information
- Disaster history or history of disaster declarations

Sample of Data Collection Progress

Data Types	Deliverable/Product	Source
Average Annualized Loss Data	Discovery Map Geodatabase	Census 2010 and Hazus
Coordinated Needs Management Strategy	Discovery Map Geodatabase	FEMA
Declared Disasters	Community Fact Sheets	FEMA's "Disaster Declarations Summary"
Dams and/or Levees	Discovery Map Geodatabase	USACE NYSDEC
Demographics, Industry	Community Fact Sheet	Census Bureau, Hazard Mitigation Plans
Effective Floodplains: Modernized SFHAs	Discovery Map Geodatabase	FEMA's Mapping Information Platform
Coastal Gage Data	Discovery Map Geodatabase	USGS, NOAA CO-OPS
Insurance Policies	Community Fact Sheet	CIS
Letter of Map Change (LOMCs)	Community Fact Sheet (known clusters on Discovery Map Geodatabase)	FEMA's Mapping Information Platform
Repetitive Loss	Community Fact Sheet	CIS
Stream Gages	Discovery Map Geodatabase	USGS
Insurance Policies	Community Fact Sheet	CIS BureauNet

Sample of Data Collection Progress

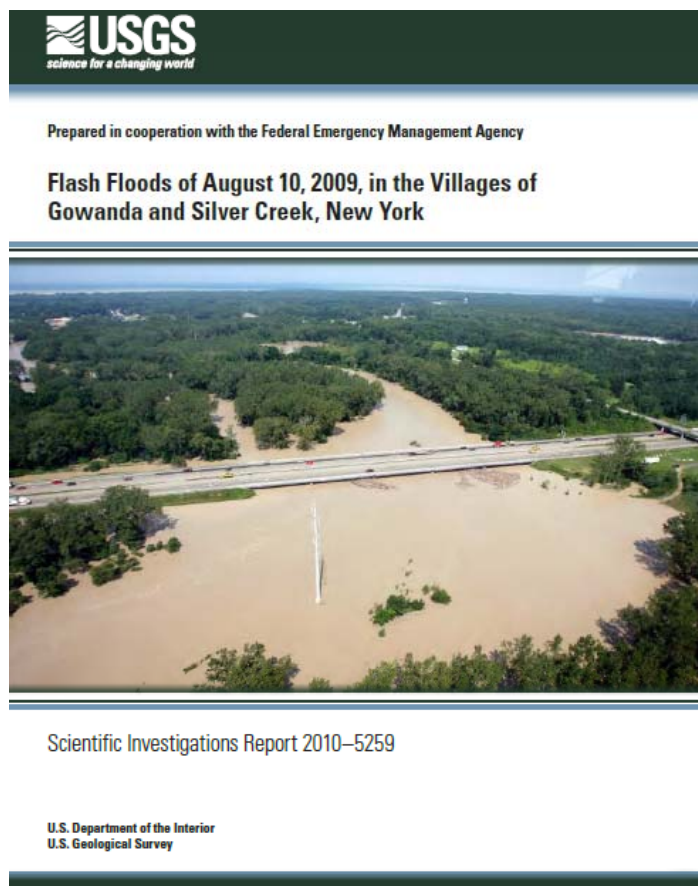
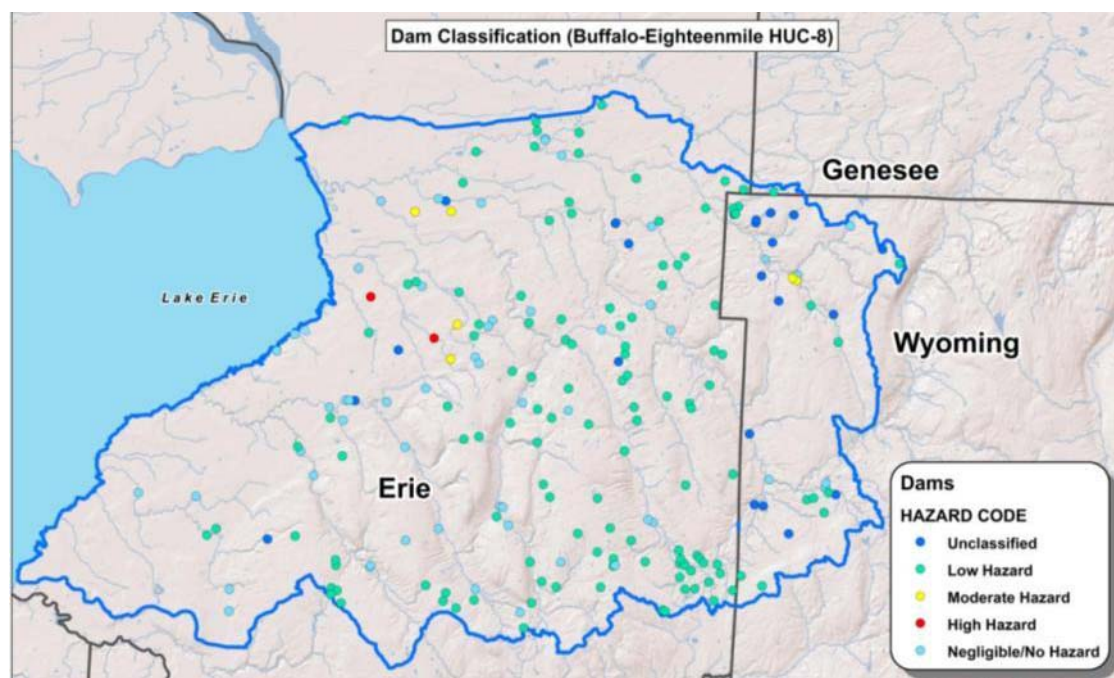


Table 10: Dams in the Buffalo-Eighteenmile Watershed

County	Class A	Class B	Class C	Class D	Total
ERIE	37	32	48	59	176
GENESEE	1	0	0	0	1
WYOMING	10	3	20	3	36
Total	48	35	68	62	213



Sample of Data Collection Progress

CHAUTAUQUA COUNTY COMMUNITY	No Of Variances	No Of Rep Losses	No Of BCX Claims
CHAUTAUQUA, TOWN OF	0	8	2
DUNKIRK, CITY OF	0	13	0
DUNKIRK, TOWN OF	0	2	0
FREDONIA, VILLAGE OF	0	22	4
HANOVER, TOWN OF	8	542	33
PORTLAND, TOWN OF	0	2	0
SHERIDAN, TOWN OF	0	2	0
SILVER CREEK, VILLAGE OF	0	28	4

CATTARAUGUS COUNTY COMMUNITY	FIS Effective Date	Notes
ASHFORD, TOWN OF	5/25/1984	Partial countywide. Effective Community Flood Insurance Studies' dates range from 1982-1991.
CATTARAUGUS, VILLAGE OF	4/20/1984	
DELEVAN, VILLAGE OF	1/20/1984	
EAST OTTO, TOWN OF	4/20/1984	
FARMERSVILLE, TOWN OF	7/23/1982	
FREEDOM, TOWN OF	8/19/1991	
GOWANDA, VILLAGE OF	9/26/2008	
MACHIAS, TOWN OF	8/20/1982	
MANSFIELD, TOWN OF	5/25/1984	
NEW ALBION, TOWN OF	12/3/1982	
OTTO, TOWN OF	4/20/1984	
PERRYSBURG, TOWN OF	4/20/1984	
PERRYSBURG, VILLAGE OF	None*	
PERSIA, TOWN OF	4/20/1984	
YORKSHIRE, TOWN OF	5/25/1984	

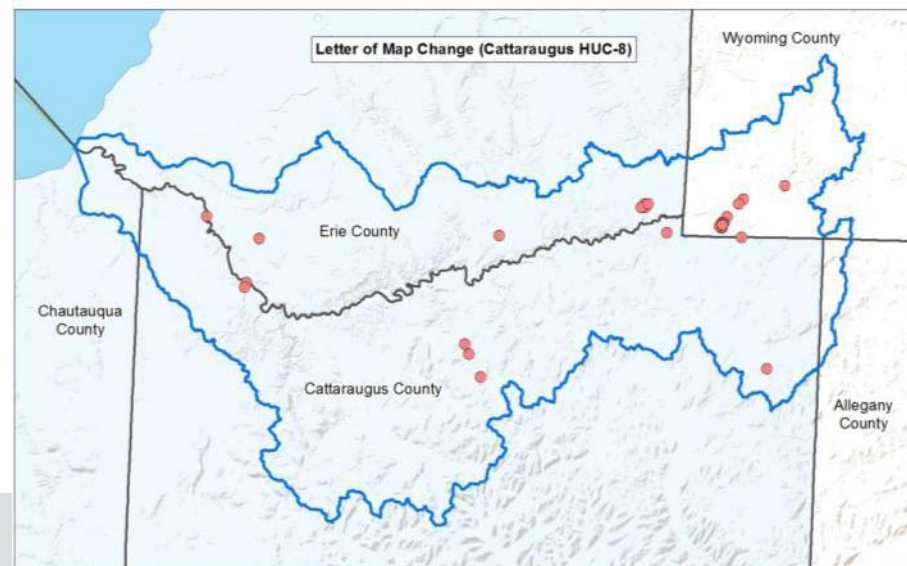
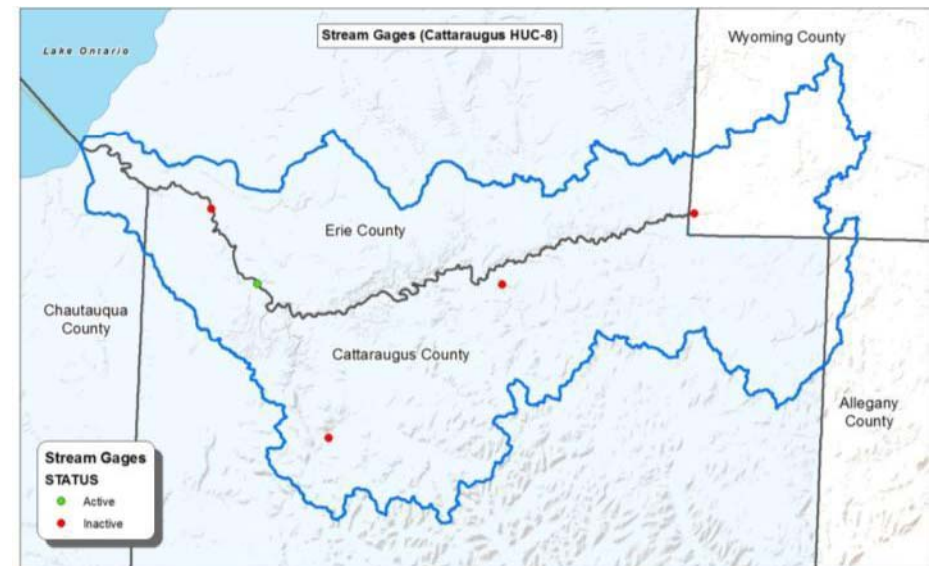
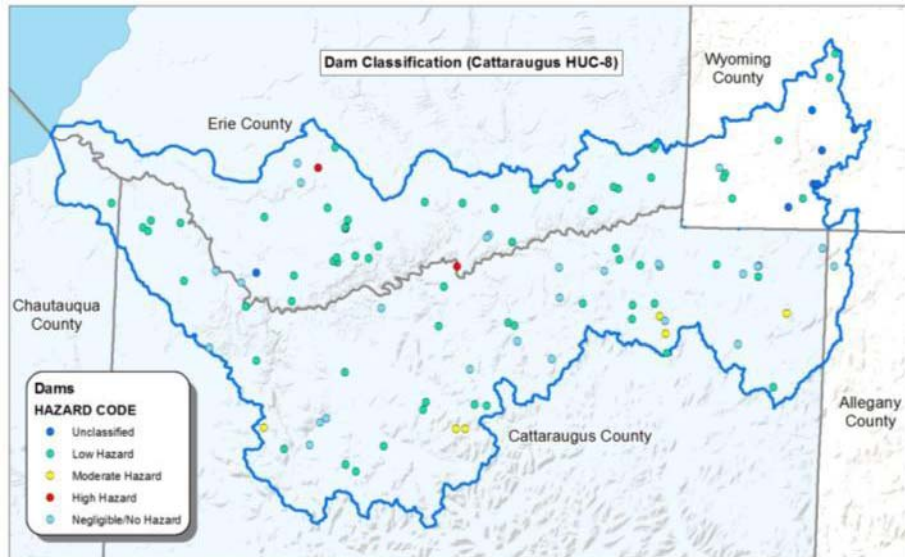
County	Total County Population (2010 data)	Percent of County Population in Chautauqua-Conneaut Watershed	2010 Estimated Population in the Chautauqua-Conneaut Watershed (Based on % in watershed * Total Population)	Square Miles in Chautauqua-Conneaut Watershed
CATTARAUGUS	80,317	0.2%	161	2.79
CHAUTAUQUA	134,905	36.7%	49,555	303.03
TOTAL	215,222	23%	49,716	305.82

Sample of Data Collection Progress

COUNTY	COMMUNITY	Number of Policies by Zone			Total Coverage	NFIP Total Premium	Total Claims Since 1978	Total Paid Since 1978
		V-Zone	A-Zone	Total Policies				
GENESEE	DARIEN, TOWN OF	0	3	3	\$296,900	\$2,683	0	\$0
WYOMING	ARCADE, TOWN OF	0	3	6	\$714,400	\$3,893	5	\$7,377
WYOMING	BENNINGTON, TOWN OF	0	1	3	\$513,600	\$1,936	0	\$0
WYOMING	JAVA, TOWN OF	0	2	3	\$399,000	\$2,051	1	\$8,228
WYOMING	SHELDON, TOWN OF	0	1	4	\$719,000	\$3,455	2	\$16,362

COUNTY	COMMUNITY	CAC Date	CAV Date	Ord	Enf	Eng	Oth	Biennial	Program Problems	Violations	Remedial Actions
ERIE	ALDEN, TOWN OF	05/11/2010	11/15/2012	NONE	NONE	SERIOUS	NONE	A	N	N	N
ERIE	AURORA, TOWN OF	05/04/2005	03/18/2008	NONE	MINOR	NONE	NONE	N	N	Y	Y
ERIE	BLASDELL, VILLAGE OF	02/24/2011	01/22/1992	NONE	NONE	SERIOUS	NONE	N	N	N	N

Sample of Data Collection Progress



Data We Need from You

- **Areas of Concern**
 - Areas of recent or planned development
 - Areas of high growth or other significant land changes
- **Areas of historical flooding**
- **Other flood risks (high erosion areas, drainage issues...)**
- **Mitigation projects**
- **Your ideas about Risk MAP products and mitigation projects that may help your community**
- **Your ideas about other ways to increase your community's resilience from flooding**

To explain some of the actions that your community may take to reduce risk, we'll review mitigation grants and planning and participation in the NFIP program

Data Worksheet Feedback

- **We need online surveys completed by August 29, 2014**
<https://www.surveymonkey.com/s/LakeErieDiscovery>
- **Digital comments can be submitted to:**
lakeeriediscovery@rampp-team.com
- **Written comments can be sent to the following:**
Attention: Rachael Herman
1066 Long Pond Road
Rochester, NY 14626

New Detailed Coastal Analysis in the Great Lakes

- **Current FIRMs may be dated due to the age of data & methodologies**
 - many date to 1970s
- **Changes in NFIP policies and methodologies have since occurred, creating need for an update**
- **Coastal analysis will include:**
 - Historical water level changes
 - Detailed assessment and modeling of wave conditions
 - Erosion analysis
 - Detailed modeling of wave runup
 - Coastal hazard mapping based on detailed modeling



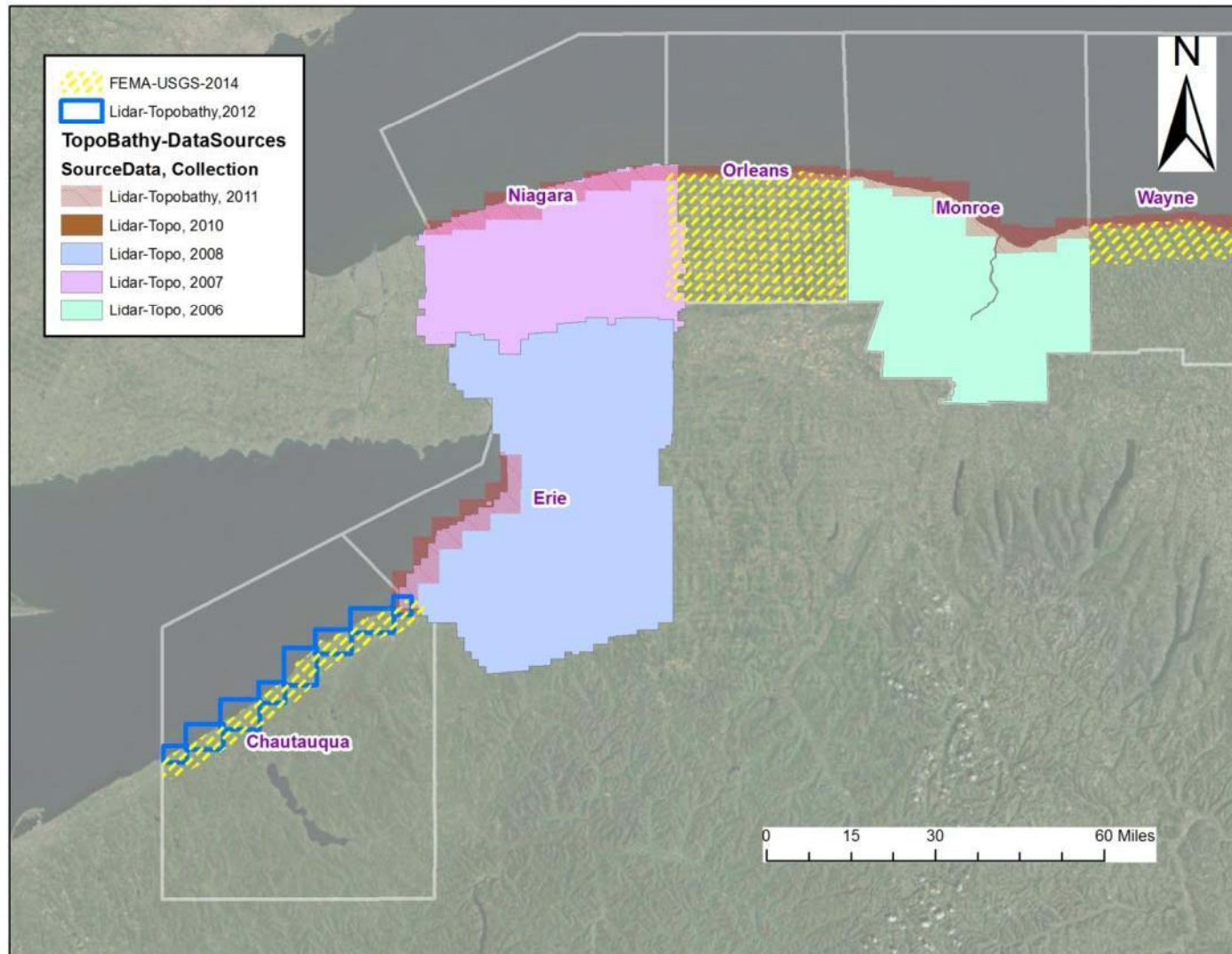
Available Coastal Data

- **For the Coastal Study, the following data is currently available for use:**
 - LiDAR
 - NOAA Bathymetric Data
 - USACE Oblique Aerials
 - USACE Shoreline Classification

- **Data communities can submit for use:**
 - Coastal Structure data
 - More detailed topographic data
 - Detailed bathymetric data
 - Beach sediment size



Topographic Data



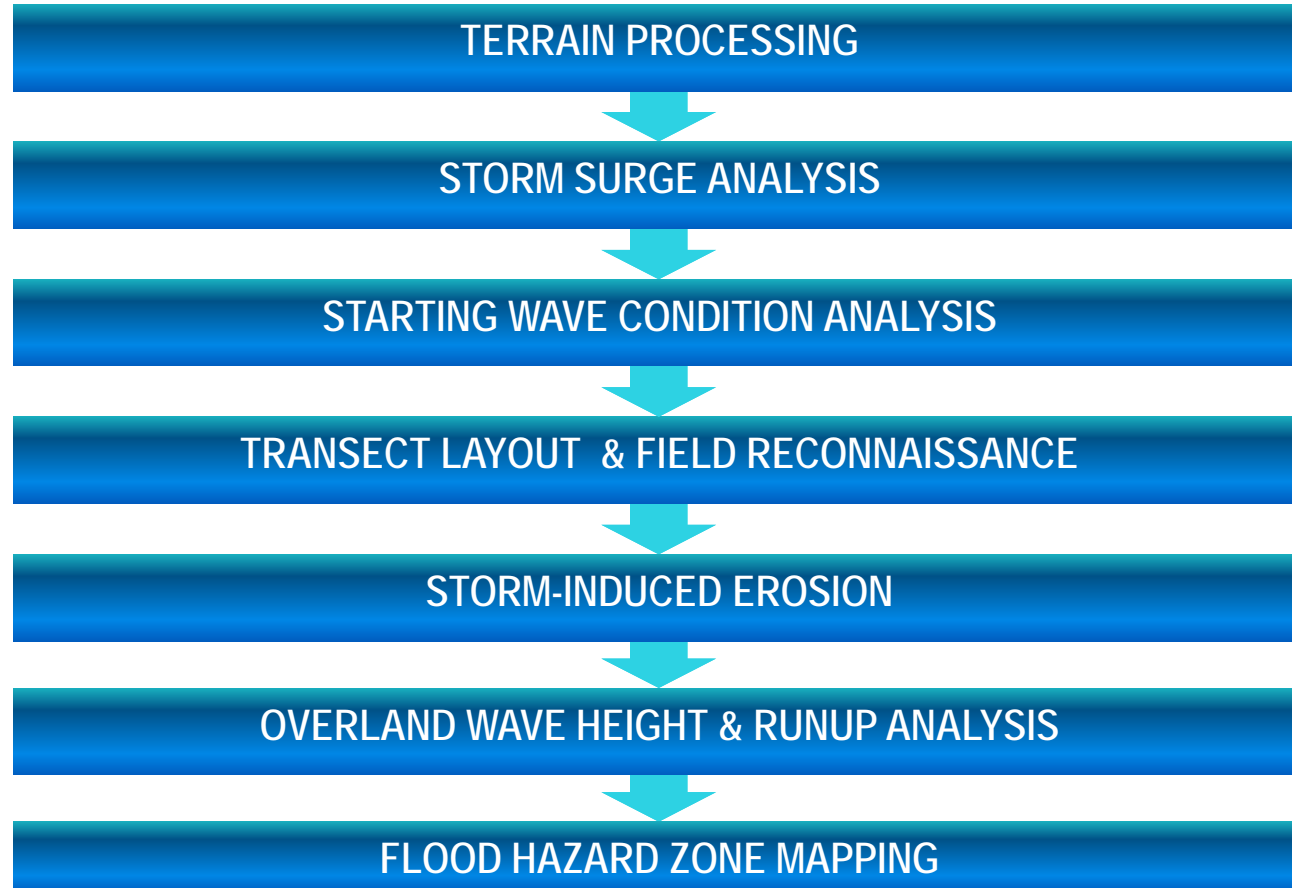
FEMA

Storm Surge Analysis and Stillwater Elevations

- **Stillwater elevations determined from results of surge modeling**
 - Storms run with water level that existed during event
- **Extreme value analysis used to determine the 1% coastal stillwater elevations**
- **Several scenarios of differing water levels and wave conditions tested for most conservative results**

Name	Methodology
Scenario 1	Maximum water level and associated wave height extracted from the iso-probability curve
Scenario 2	Maximum wave height and associated water level extracted from the iso-probability curve
Scenario 3	Combination of intermediate values extracted from the iso-probability curve
Scenario 4	1-percent-annual-chance exceedence value of water level, and expected wave height from the conditional probability distribution
Scenario 5	1-percent-annual-chance exceedence value of wave height and expected water level from the conditional probability distribution

Coastal Analysis Process



Erosion in the Great Lakes

- **USACE CSHORE model**
 - Applies real physics
 - Near-shore wave processes
 - Cross-shore sediment transport
 - Requires sediment grain size
 - Available data or estimated



Runup Modeling in the Great Lakes

■ USACE CSHORE model

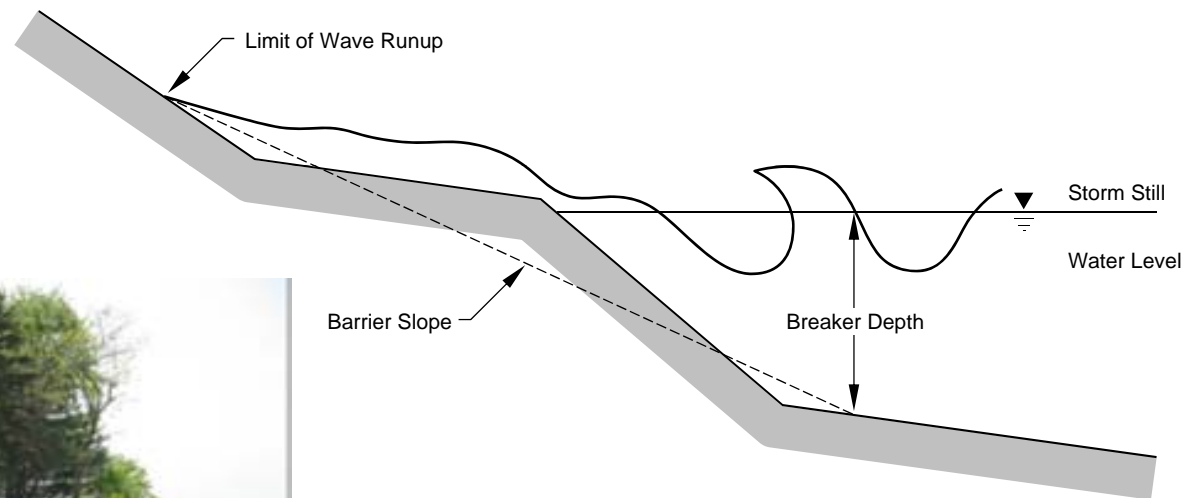
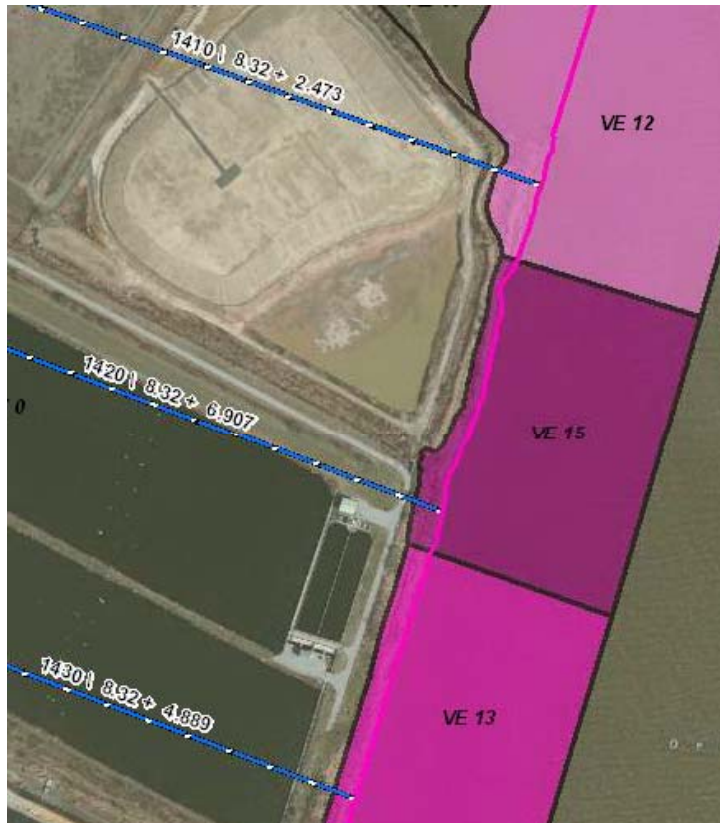


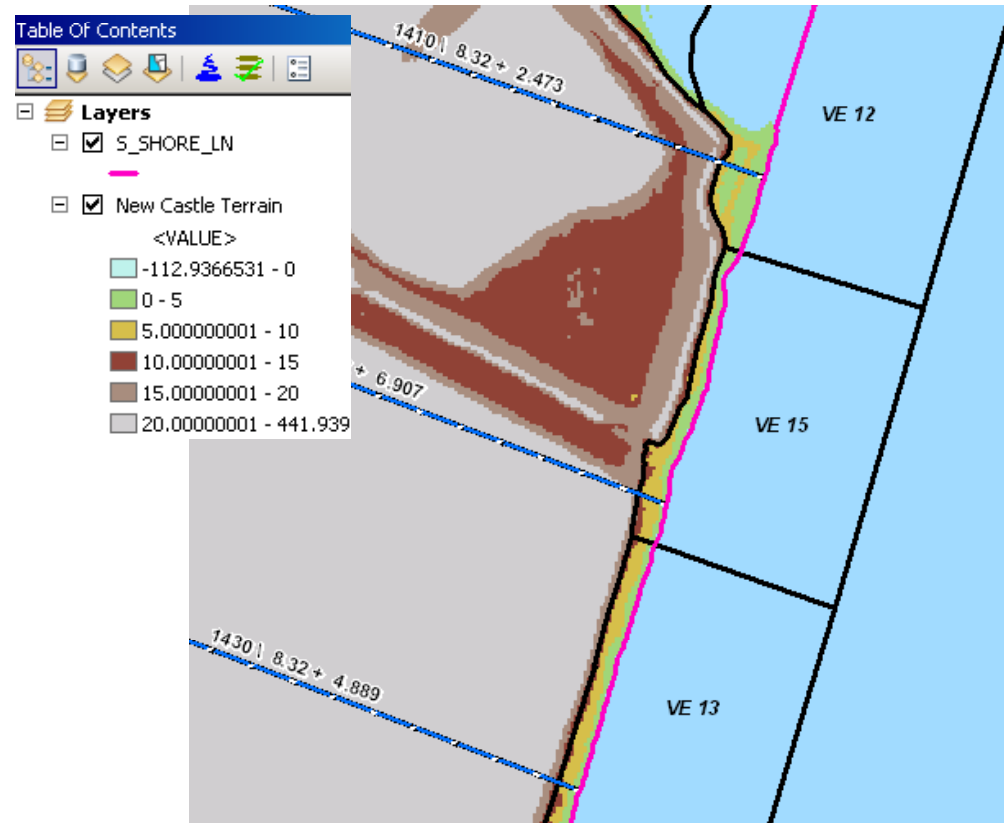
Figure D.3.5-5. Wave Runup Sketch

Wave Runup Mapping

How runup is mapped



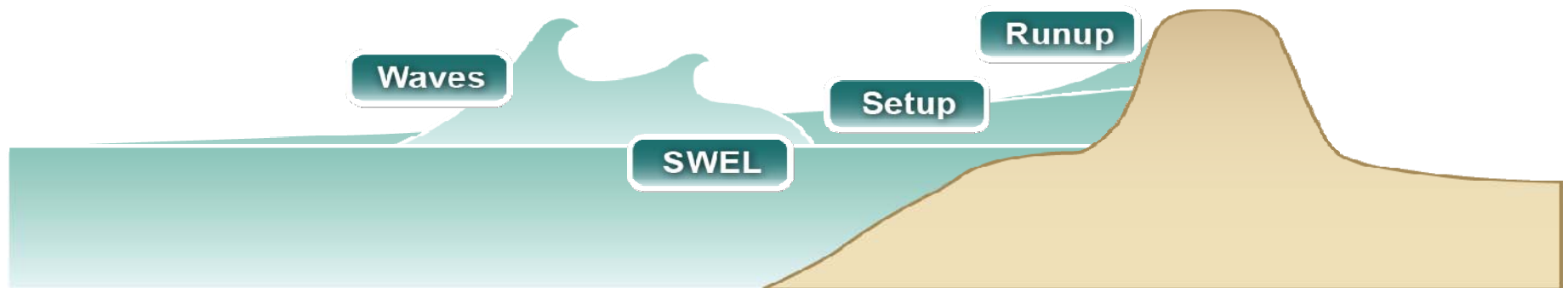
Terrain shows different slope at the shore



Changing BFEs

- **Base Flood Elevation on FIRM now includes 3 components:**

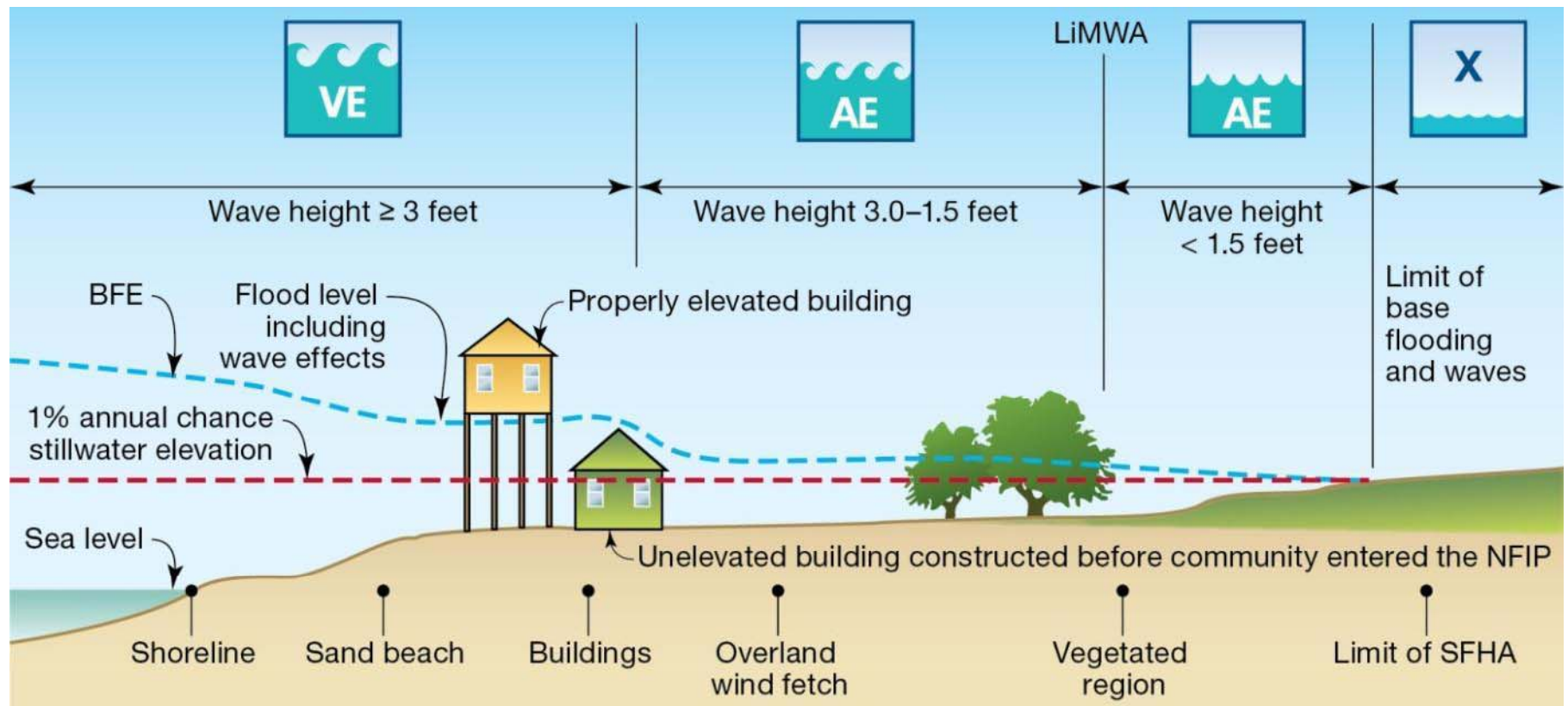
1. Storm surge stillwater elevation (SWEL) includes wave setup
2. Wave height above storm surge (stillwater) elevation
3. Wave runup above storm surge elevation (where present)



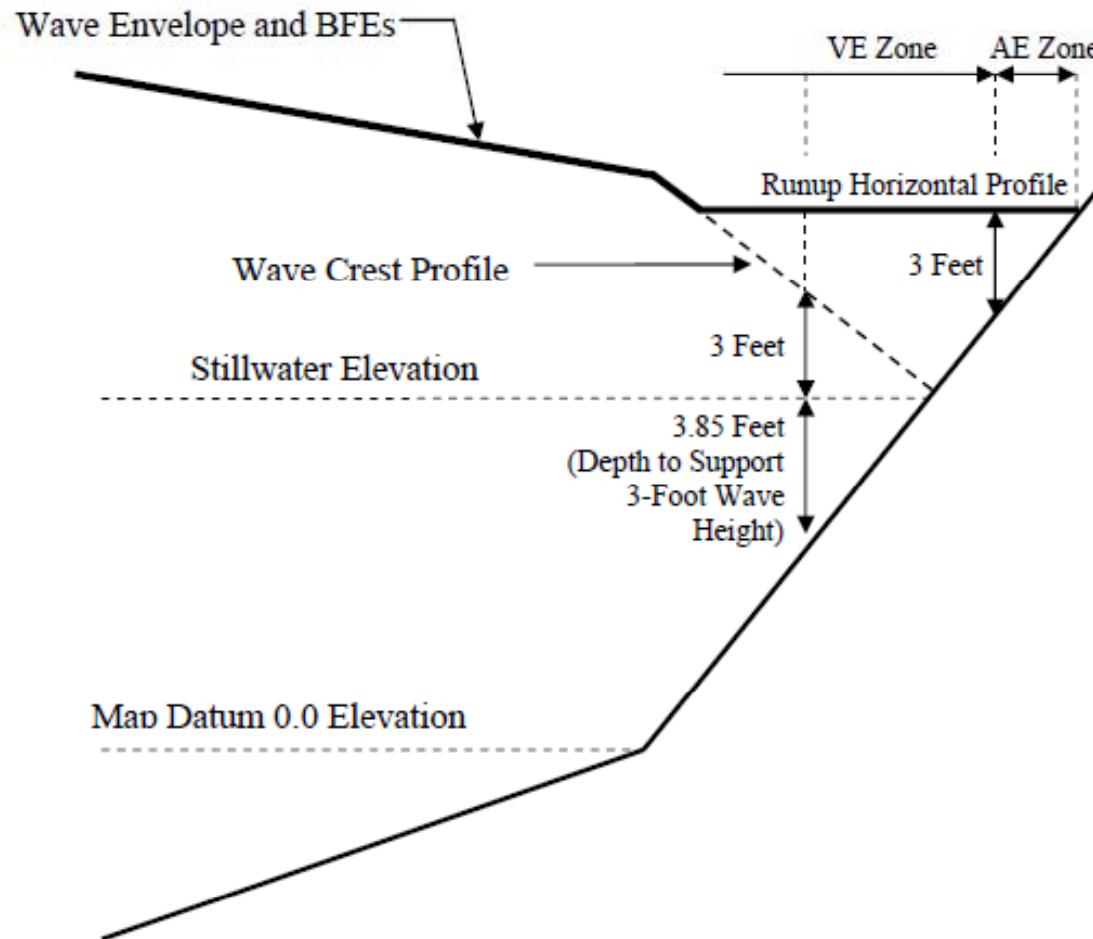
Mapping

- **Base Flood Elevation (BFE)**: The height in feet above a certain datum that flood waters have a 1 percent annual chance of reaching or exceeding in any given year
- **Zone VE**: Defined by wave heights of 3 ft. or greater
 - Study in process headed by FEMA HQ regarding feasibility
- **Zone AE**: Defined by wave heights ranging from 0-3 ft.
- **Limit of Moderate Wave Action (LiMWA)**: Defined by the area subject to wave action with waves greater than 1.5 ft. in height

Mapping (continued)



Wave Runup Mapping



Limit of Moderate Wave Action (LiMWA)

- At present not a FEMA regulatory requirement
 - Residential Building Code in NYS does not require different standards
 - Building Code of NYS does require different standards in “Coastal A zones” for structures other than 1-2 family residential.
- No Federal Insurance requirements tied to LiMWA
- CRS benefit for communities requiring VE Zone construction standards in areas defined by LiMWA or areas subject to waves greater than 1.5 ft.
 - Potential of additional 600+ points

How does this apply to my community?

- **NFIP Compliance**
- **Local impact of the coastal study**



National Flood Insurance Program

- **Allows property owners to purchase federally backed flood insurance**
- **State and local governments agree to adopt and enforce floodplain management ordinances**
- **Over 20,300 communities participate in the NFIP nationwide**
- **1,498 communities in NYS participate in the NFIP**



Standard NFIP Building Requirements

- The lowest enclosed area, including basement must be at or above the Base Flood Elevation *plus two feet (residential)*
- Non-residential buildings may be flood proofed in lieu of elevation (freeboard applies)
- NO development in the regulatory floodway that would raise flood elevations

Standard NFIP Building Requirements

■ A Zone Building Requirements

- Where no Base Flood Elevation: Lowest floor at least 3' above highest adjacent grade
 - If have a BFE then use it
 - Developments over 5 acres or over 50 lots must provide a BFE

■ VE Zone Buildings Requirements

- Lowest horizontal member must be above BFE
- Structure must have open foundation, not built on fill
 - Below BFE must be free of obstructions
 - Breakaway walls are permissible

Recommended Higher Standards

- **Restrictions on hazardous material storage**
- **Regulated high risk land uses (e.g. manufactured homes/critical infrastructure)**
- **Conservation/open space area**
- **Cumulative Substantial Damage/Substantial Improvement**
- **Lower threshold for Substantial Damage**
- **Subdivision design triggering flood study**
- **Prohibitions**
 - SFHA development
 - Manufactured homes
 - Fill
- **Community Identified Flood Areas**

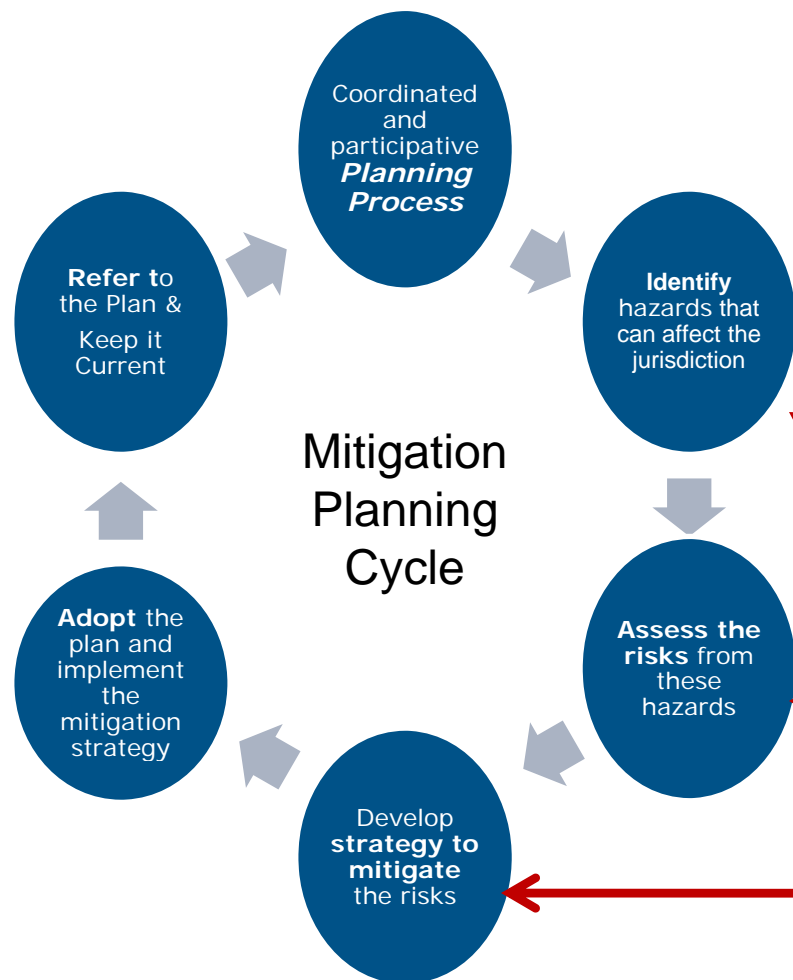
Community Rating System (CRS)

- **Flood insurance premium rates discounted to reward community actions that reduce flood losses, facilitate accurate insurance ratings, and encourage a comprehensive approach to floodplain management**
- **Class rating system from 1 to 10**
- **Each Class improvement (500 point increments) results in additional 5% discount, up to 45% in SFHAs for Class 1 communities**
- **Uniform minimum credits give you points for activities on the state level (state laws) and make achieving a Class 9 relatively easy**
- **18 creditable activities, organized under four categories:**
 - Public Information
 - Mapping and Regulations
 - Flood Damage Reduction
 - Flood Preparation
- **<http://training.fema.gov/EMIWeb/CRS/>**

Coastal Erosion Hazard Area (CEHA)

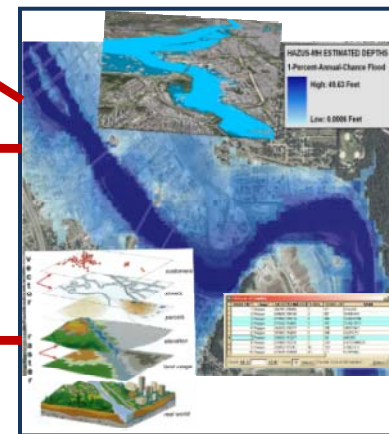
- **Projects to prevent shore erosion**
- **Empowers DEC to identify and map coastal erosion hazard areas and to adopt regulations to control certain activities and development in those areas**
- **Currently being updated**
- **86 communities in New York State**
- **42 certified and have own law**
 - 3 communities in Lake Erie watersheds
- **44 managed by DEC**
 - 9 communities in Lake Erie watersheds
- **Certified communities**
 - Contact local building/zoning department
- **Managed**
 - Apply for a permit
 - Genesee
 - Scott Sheeley (585.226.5400)
 - Erie and Wyoming
 - David Denk (716.851.7165)
 - Alleghany, Cattaraugus and Chautauqua
 - Charles Cranston (716.372.0645)
- **Website**
 - <http://www.dec.ny.gov/lands/86541.html>

Hazard Mitigation Planning



■ Risk MAP and Mitigation Planning

- Local hazard mitigation plans must be updated every five (5) years.
- Use new Risk MAP information to update local HMP.
 - Flood Hazard Profile
 - Risk Assessment
 - Mitigation Strategy



Possible Mitigation Activities

Mitigation should be part of overall hazard mitigation plan

- Cumulative substantial improvement clause.
- List of publicly owned buildings that have flood risk.
- Acquisition of flood prone structures.
- County GIS system.
- Updated weather tracking equipment.
- Stream bank stabilization projects
- Identified sanitary sewer mains vulnerable to erosion from flood
- Stream bank or shoreline stabilization projects

- Adopted a wellhead protection ordinance.
- Vulnerability assessment of water and wastewater infrastructure.
- Elevate, move and acquire flood damaged structures.
- Identify vulnerable critical facilities.
- Implement mitigation measures for repetitive loss properties.
- Require elevation of new structures and substantially improved structures.
- Natural stream restoration

Mitigation Grant Programs and Funding Sources

■ Federal

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation Grant Program (PDM)
- Flood Mitigation Assistance (FMA)
- Repetitive Flood Claims (RFC)
- Severs Repetitive Flood Claims (SRL)
- US Army Corps. of Engineers
- Natural Resource Conservation Service (NRCS)

■ State

- NYSDEC
- NYS Office of Community Renewal
- NYS Office of Emergency Management

■ Local

- Watershed Conservancy Districts
- Local taxes
- Storm water utilities

Risk Communication

- **Federal/State/Local goals:**
 - To reduce risk to life and property, ensure safer, sustainable communities
 - To effectively communicate risk and increase public awareness, leading citizens to make informed decisions regarding their 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
 - Local understanding and implementation of mitigation action and strategies

Next Steps

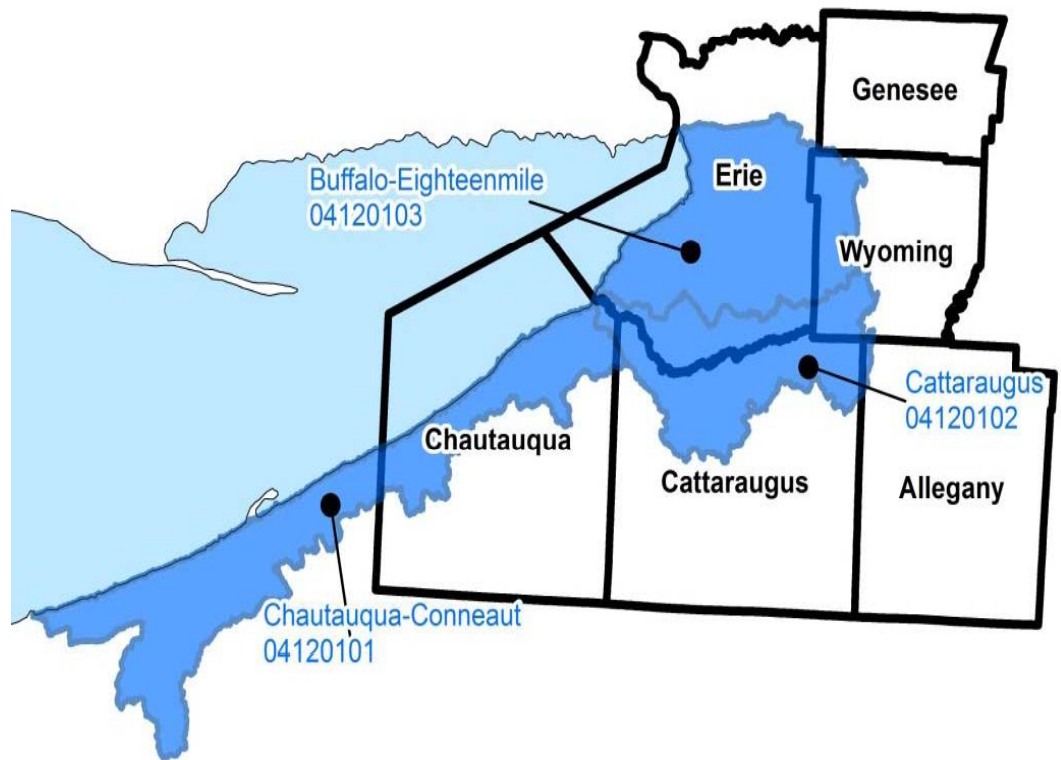
- **Communities will provide additional data**

<https://www.surveymonkey.com/s/LakeErieDiscovery>

- **RAMPP will:**
 - **Finalize Discovery Map and Discovery Report and distribute to communities and other stakeholders**
 - **Update FEMA systems (Coordinated Needs Management Strategy, National Digital Elevation/Orthophotography Programs, etc.)**

Schedule

- **Today**
 - In person Meetings
- **Data Survey Due**
 - August 29, 2014
- **Final Deliverables**
 - December 2014



Breakout Sessions

- **We want to hear from you!**
 - What are areas of recent or planned development or high growth or other significant land changes in your community?
 - What other flood risks are there in your community?
 - What other mitigation plans and projects are there in your community?
- **What are your community's concerns?**
- **How can we (both FEMA and you) communicate risk within your community and increase resilience from floods?**



Resources

- **Risk Assessment, Mapping and Planning Partners:**
www.RAMPP-team.com/ny.htm – Draft Discovery report, PowerPoint presentation, and maps will be posted here
- **FEMA:** www.fema.gov
- **Floodsmart, the official site of the National Flood Insurance Program (NFIP):** www.floodsmart.gov
- **NFIP Reform:** www.fema.gov/bw12
- **National Committee on Levee Safety:**
www.nfrmp.us/ncls

Contact Information

- **FEMA:**

- Alan Springett: alan.springett@fema.dhs.gov
- 212.680.8557

- **RAMPP:**

- Robyn Boyd: rboyd@dewberry.com
- 703.849.0611

- **NYSDEC:**

- Jennifer Horton: jehorton@gw.dec.state.ny.us
- 518.402.8185

- **Please provide data survey, questions or comments to:**

- lakeeriediscovery@rampp-team.com

Questions

?