

Appendix D-3
Cuyahoga County, OH
Discovery Report

Discovery Report

Great Lakes Coastal Flood Study

Lake Erie

Cuyahoga County, Ohio

Individual Discovery Report

Report Number 01

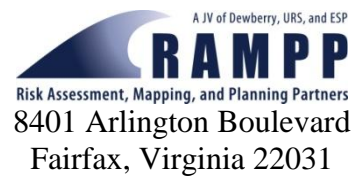
March 2013



FEMA

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Department of Homeland Security
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DATE SUBMITTED: March 2013

Project Area Community List

Cuyahoga County

Cuyahoga County (Unincorporated Areas)

Bay Village, City of

Bratenahl, Village of

Cleveland, City of

Euclid, City of

Lakewood, City of

Rocky River, City of

This list includes the communities within the Project Area covered by this report (Cuyahoga County, OH) for the Great Lakes Coastal Study under consideration for new Federal Emergency Management Agency (FEMA) Risk Mapping, Assessment, and Planning (Risk MAP) products and datasets, which may include Flood Insurance Studies (FISs) and Flood Insurance Rate Maps (FIRMs). Not all communities will receive new/updated FEMA Risk MAP products and datasets or FISs and FIRMs.

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS	iv
SECTION ONE DISCOVERY OVERVIEW.....	1
1.1 Great Lakes Coastal Flood Study	1
1.2 Purpose of Great Lakes Discovery	1
1.3 Coastal Flood Risk Products.....	2
SECTION TWO GREAT LAKES OUTREACH STRATEGY.....	4
2.1 Lake Erie Discovery Stakeholder Coordination	4
SECTION THREE SUMMARY OF DATA ANALYSIS.....	5
3.1 Data That Can Be Used For Future Coastal Flood Risk Products	7
3.1.1 Average Annualized Loss Data	7
3.1.2 Bathymetry.....	8
3.1.3 Erosion Data.....	8
3.1.4 Federal Land	8
3.1.5 Jurisdictional Boundaries.....	9
3.1.6 Publicly Owned Land	9
3.1.7 Shoreline Information	9
3.1.8 Stream Lines/Hydrographs	10
3.1.9 Topography	10
3.1.10 Transportation	10
3.1.11 Watershed Boundaries	11
3.2 Other Data and Information	11
3.2.1 Coastal Barrier Resources System	11
3.2.2 Coastal Zone Protection Structures.....	11
3.2.3 Community Assistance Visits.....	12
3.2.4 Community Rating System.....	15
3.2.5 Comprehensive Plans.....	15
3.2.6 Coordinated Needs Management Strategy and NFIP Mapping Needs	17
3.2.7 Critical Facilities.....	17
3.2.8 Critically Eroded Beaches and Beach Nourishment/Dune Replacement Projects.....	17
3.2.9 Dams	19
3.2.10 Declared Disasters	19
3.2.11 Flood Insurance Policies.....	20
3.2.12 Gage Data	21
3.2.12.1 Meteorological Stations	21
3.2.12.2 Stream Gages	22
3.2.12.3 Water Level Station	22
3.2.12.4 Wave Gage/Buoy Stations	23
3.2.13 High Water Marks.....	24
3.2.14 Historical Flooding	24
3.2.15 Land Use	26
3.2.16 Levees	27
3.2.17 Letters of Map Change.....	29

TABLE OF CONTENTS

3.2.18	Mitigation Plan Status and Mitigation Projects	29
3.2.18.1	Hazard Mitigation Grant Program	30
3.2.18.2	Public Assistance Projects	30
3.2.18.3	Ohio Coastal Management Assistance Grants	30
3.2.18.4	Great Lakes Coastal Restoration Grants	30
3.2.18.5	Grants from Coastal and Estuarine Land Conservation Program.....	31
3.2.18.6	Locality Identified Mitigation Projects	33
3.2.19	Oblique Imagery	33
3.2.20	Ordinances	33
3.2.21	Regulatory Mapping	34
3.2.22	Repetitive Loss/Severe Repetitive Loss Properties	35
3.2.23	Socioeconomic Analysis	35
3.2.24	Transects	36
3.2.25	Other Resources	36
SECTION FOUR	DISCOVERY MEETING.....	37
SECTION FIVE	RISK MAP PROJECTS AND NEEDS	38
5.1	Coastal Studies.....	38
5.2	Mitigation Projects.....	38
5.3	Compliance	38
5.4	Communication.....	39
5.5	Unmet Needs.....	39
SECTION SIX	CLOSE.....	40
SECTION SEVEN	ATTACHMENTS.....	41
SECTION EIGHT	REFERENCES	42

Tables

Table 1:	Data Collected for Cuyahoga County, OH.....	5
Table 2:	Hazus AAL Data for Cuyahoga County, OH	8
Table 3:	Summary of Shoreline Types	9
Table 4:	Summary of Shoreline by Land Uses	9
Table 5:	Summary of Shoreline Coverage.....	10
Table 6:	Summary of Shoreline Vegetation Types.....	10
Table 7:	Summary of CAV Findings in Cuyahoga County, OH	14
Table 8:	Summary of Comprehensive Plans.....	15
Table 9:	CNMS Status for Cuyahoga County, OH.....	17
Table 10:	Lake Erie Erosion Statistics – Cuyahoga County, OH.....	18

TABLE OF CONTENTS

Table 11: Vulnerability Assessment / Potential Dollars Lost as a Result of Coastal Erosion in Cuyahoga County, OH	18
Table 12: Summary of Dams in Cuyahoga County, OH	19
Table 13: Declared Disasters in Cuyahoga County, OH	20
Table 14: Summary of Flood Insurance Policies and Claims in Cuyahoga County, OH.....	21
Table 15: Meteorological Stations in Cuyahoga County, OH	22
Table 16: Stream Gage Stations in Cuyahoga County, OH.....	22
Table 17: Water Level Stations in Cuyahoga County, OH.....	23
Table 18: Water Level Stations in Lake Erie along Canadian Shoreline	23
Table 19: Wave Stations in Lake Erie	24
Table 20: Summary of Estimated Damage from Flooding Events in Cuyahoga County, OH.....	25
Table 21: Estimated Damage from Identified Flooding Events in Cuyahoga County, OH	25
Table 22: Summary of Land Use in Cuyahoga County, OH	26
Table 23: Summary of Levees in Cuyahoga County, OH	28
Table 24: Summary of LOMC Cases in Cuyahoga County, OH.....	29
Table 25: Status of Hazard Mitigation Plans	30
Table 26: Mitigation Projects in Cuyahoga County, OH (through Ohio Coastal Management Program Grants).....	31
Table 27: Floodplain Ordinance Levels.....	34
Table 28: Program Status and Ordinance Level of Cuyahoga County, OH	34
Table 29: Effective FIS Status of Cuyahoga County, OH	35
Table 30: Summary of Repetitive Loss in Cuyahoga County, OH.....	35
Table 31: Summary of Census Population Data in Cuyahoga County, OH	36

Figures

Figure 1: Project Area Map.....	2
Figure 2: Effects of Coastal Erosion.....	18

Attachments

- Attachment A: Communications
- Attachment B: Data Collection
- Attachment C: Discovery Maps
- Attachment D: Discovery Meeting

AAL	Average Annualized Loss
BFE	Base Flood Elevation
CAV	Community Assistance Visit
CBRS	Coastal Barrier Resources System
CELCP	Coastal and Estuarine Land Conservation Program
CID	Community Identification Number
CIS	Community Information System
CMAG	Coastal Management Assistance Grant
C-MAN	Coastal Marine Automated Network
CNMS	Coordinated Needs Management Strategy
CO-OPS	Center for Operational Oceanographic Products and Services
CRS	Community Rating System
DFO	Department of Fisheries and Oceans
FEMA	Federal Emergency Management Agency
FIPS	Federal Information Processing Standards
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
GIS	Geographic Information System
GLCRG	Great Lakes Coastal Restoration Grant
Hazus-MH	Multi-Hazard Risk Assessment and Loss Estimation Software Program
HUC8	Hydrologic Unit Code 8
HWM	High Water Mark
LESEMP	Lake Erie Shore Erosion Management Plan
LOMA	Letter of Map Amendment
LOMC	Letter of Map Change
LOMR	Letter of Map Revision
LOMR-F	Letter of Map Revision based on Fill
MLI	Midterm Levee Inventory
NDBC	National Data Buoy Center
NFIP	National Flood Insurance Program
NGDC	National Geophysical Data Center
NID	National Inventory of Dams

Acronyms and Abbreviations

NOAA	National Oceanic and Atmospheric Administration
OCMP	Ohio Coastal Management Program
ODNR	Ohio Department of Natural Resources
PAL	Provisionally Accredited Levees
Risk MAP	Risk Mapping, Assessment, and Planning
SFHA	Special Flood Hazard Area
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

SECTION ONE DISCOVERY OVERVIEW

The Federal Emergency Management Agency (FEMA) Risk Mapping, Assessment, and Planning, or Risk MAP, program helps communities identify, assess, and reduce their flood risk. Through Risk MAP, FEMA provides information to enhance local mitigation plans, improve community outreach, and increase local resilience to floods.

During the Discovery phase of Risk MAP project development, FEMA:

- Gathers information about local flood risk and flood hazards
- Reviews mitigation plans to understand local mitigation capabilities, hazard risk assessments, and current or future mitigation activities
- Supports communities within the coastal area to develop a vision for the future
- Collects information from communities about their flooding history, development plans, daily operations, and stormwater and floodplain management activities
- Uses all information gathered to determine which areas require mapping, risk assessment, or mitigation planning assistance through a Risk MAP project
- Develops Discovery Map and Report that summarize and display the Discovery findings

1.1 GREAT LAKES COASTAL FLOOD STUDY

FEMA has initiated a coastal analysis and mapping study to produce updated Flood Insurance Rate Maps (FIRMs) for coastal counties along the Great Lakes. The new coastal flood hazard analyses will use updated 1-percent-annual-chance (100-year) flood elevations obtained from a comprehensive storm surge study being developed by the U.S. Army Corps of Engineers (USACE).

An updated coastal flood study is needed to obtain a better estimate of coastal flood hazards on the Great Lakes. The current, effective FIRMs are outdated, primarily because of the age of data and the coastal methodologies used in producing them. Major changes in National Flood Insurance Program (NFIP) policies and methodologies have been implemented since the effective dates of many Flood Insurance Studies (FISs) in the area, creating the need for an update that will reflect a more detailed and complete hazard determination.

The Great Lakes Coastal Flood Study includes a system-wide solution that provides a comprehensive analysis of storm and high water events within the Great Lakes Basin. This program is funded through the FEMA Risk MAP program. FEMA, USACE, the Association of State Floodplain Managers, State partners, and FEMA contractors will collaborate in updating the coastal methodology and flood maps. FEMA manages the NFIP, which is the cornerstone of the national strategy for preparing communities for flood-related disasters.

1.2 PURPOSE OF GREAT LAKES DISCOVERY

The purpose of the Great Lakes Discovery is to update NFIP products to increase public awareness of short- and long-term lake level variations, storm events, and associated storm surge and waves to improve community resiliencies related to flood losses (life, property, and business).

This Discovery Report discusses the communities potentially affected by coastal flooding in Cuyahoga County, OH, as shown in Figure 1.

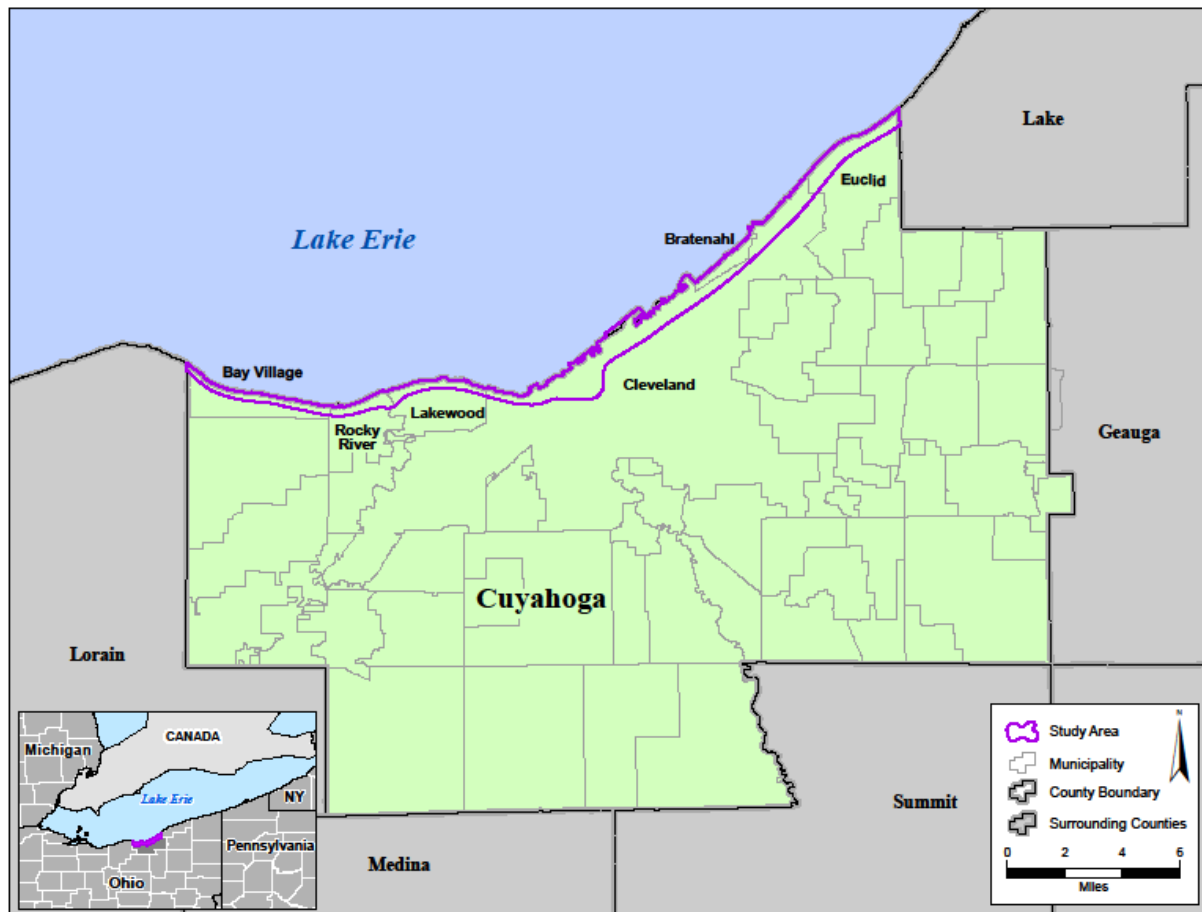


Figure 1: Project Area Map

1.3 COASTAL FLOOD RISK PRODUCTS

The Risk MAP Program will provide State and community officials with three flood risk products to help them gain a better understanding of flood risk and its potential impact on communities and individuals. These products will also enable communities to take proper mitigation actions to reduce this risk. The three products are:

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

These products will summarize information captured through the Flood Risk Datasets during the flood risk study. The associated datasets could include regular and enhanced products:

- Changes Since Last FIRM
- Flood Depth and Analysis Grids

- Flood Risk Assessment Data
- Areas of Mitigation Interest
- Areas Affected by Increased Inundation
- Wave Hazard Severity Areas
- Coastal Wave Height Grid
- Erosion Risk Determination

SECTION TWO GREAT LAKES OUTREACH STRATEGY

2.1 LAKE ERIE DISCOVERY STAKEHOLDER COORDINATION

To communicate effectively throughout the life of a possible Risk MAP project in this Great Lakes Coastal Flood Study, the use of email, telephone, and letters will be essential. A master or central list of stakeholders in the communities within the Project Area covered by this report (Cuyahoga County) is included in the Attachments. A total of 68 invitations were sent to stakeholders within the Cuyahoga County portions of the Lake Erie Coastal Flood Study project.

Representatives from the local governments, including cities, townships, and villages are considered fundamental stakeholders in this process because they have been elected or appointed to represent the interests of the residents of the Project Area. In addition to local governments, the county officials were invited to participate in the Discovery Meetings. See the Attachments for a complete list of the stakeholders invited to the Discovery Meetings.

SECTION THREE SUMMARY OF DATA ANALYSIS

During the Discovery portion of the Lake Erie Coastal Flood Study project, a massive amount of tabular and spatial data was collected for all communities from Federal and State sources, as well as through phone interviews and the Discovery Coastal Data Request forms sent to each community. Section 3 describes the types of data and their sources that the project team collected for the study area before the Discovery Meeting. The Data Analysis that follows Table 1 is divided into two sections: Section 3.1 describes the data that can be used for Risk MAP products and Section 3.2 describes the information that helped the study team form a better understanding of the Project Area.

Table 1: Data Collected for Cuyahoga County, OH

Data Types	Deliverable/Product	Source	Date of Data Collection	Resolution
Average Annualized Loss Data	Discovery Map	Federal Emergency Management Agency (FEMA)	April 2011*	Nationwide
Census Blocks	Discovery Map	U.S. Census Bureau	Dec. 2011	Countywide
Contacts	Discovery Report	Local Community Web sites, State/FEMA updates	Dec. 2011	Countywide
Community Assistance Visits	Discovery Report	FEMA Community Information System (CIS), Ohio Department of Natural Resources (ODNR)	Dec. 2011	Countywide
Community Rating System	Discovery Report	FEMA’s “Community Rating System Communities and Their Classes”	Dec. 2011	Nationwide
Comprehensive Plans	Discovery Report	Local Community Web sites	Dec. 2011	Countywide
Coastal Barrier Resources System	Discovery Map	U.S. Fish and Wildlife Service	Nov. 2011*	Nationwide
Coastal Construction	Discovery Map	U.S. Army Corps of Engineers (USACE)	July 2012	Nationwide
Coordinated Needs Management Strategy	Discovery Map	FEMA	July 2012	Countywide
Critically Eroded Beach Areas	Discovery Report	ODNR	Dec. 2011*	Statewide
Critical Facilities	Discovery Report	Local Mitigation Plans	April 2012	Countywide

Summary of Data Analysis

Data Types	Deliverable/Product	Source	Date of Data Collection	Resolution
Dams	Discovery Report	USACE, National Inventory of Dams, Flood Insurance Rate Map Database, ODNR Dam Safety Program	April 2012	Countywide
Declared Disasters	Discovery Report	FEMA's "Disaster Declarations Summary"	April 2012	Nationwide
Demographics, Industry	Discovery Report	U.S. Census Bureau, Local Mitigation Plans	April 2012	Countywide
Effective Floodplains	Discovery Map	FEMA Map Service Center and Mapping Information Platform	April 2012	Countywide
Flood Insurance Policies	Discovery Report	FEMA CIS	April 2012	Nationwide
Hazards Mitigation Plans and Status	Discovery Report	Local Mitigation Plans, Ohio Emergency Management Agency	April 2012	Countywide
Hazard Mitigation Assistance Program Grants Received	Discovery Report	FEMA's "Hazard Mitigation Program Summary" Community Input	April 2012	Nationwide
Hazard Mitigation Projects	Discovery Report	ODNR, Local Mitigation Plans	May 2012	Countywide
High Water Marks	Discovery Report	U.S. Geological Survey (USGS)	July 2012	Countywide
Historical Flooding	Discovery Report	Effective Flood Insurance Study (FIS), Local Mitigation Plans	April 2012	Countywide
Historical Storm Events	Discovery Report	Effective FIS, Local Mitigation Plans	April 2012	Countywide
Individual/Public Assistance	Discovery Report	FEMA's "Public Assistance Subgrantee Summary"	April 2012	Nationwide
Letters of Map Change	Discovery Report	FEMA's Mapping Information Platform	April 2012	Countywide
Meteorological Gages	Discovery Map	National Oceanic and Atmospheric Administration (NOAA) Great Lakes Environmental Research Laboratory	April 2012	Region-wide

Data Types	Deliverable/Product	Source	Date of Data Collection	Resolution
Mid-term Levee Inventory (MLI)	Discovery Report	MLI database	Nov. 2011*	Nationwide
Ordinances	Discovery Report	Local Community Web sites, ODNR	April 2012	Countywide
Repetitive Loss	Discovery Report	FEMA CIS	April 2012	Countywide
Shoreline Classification	Discovery Map	USACE	July 2012	Region-wide
Stream Gages	Discovery Map	USGS	April 2012	Countywide
Water Level Gages	Discovery Map	NOAA, Canadian Department of Fisheries and Oceans	April 2012	Region-wide
Wave Gages	Discovery Map	NOAA	April 2012	Region-wide

* Date of Data Release

3.1 DATA THAT CAN BE USED FOR FUTURE COASTAL FLOOD RISK PRODUCTS

During the Discovery process, the project team created a database of available flood hazard and flood risk assessment data. This database not only provides an inventory of available data, but helps identify gaps in the flood hazard data. State, county, and government geographic information system (GIS) Web sites can provide some of the pertinent data, but local knowledge of flooding and mitigation projects is critical to help accurately determine flood risks and mapping needs. Therefore, local and regional data were also used where available.

3.1.1 Average Annualized Loss Data

The Average Annualized Loss (AAL) data provide a general understanding of the dollar losses associated with a certain frequency of flood events within a county and are used to get a relative comparison of flood risk. They are determined by FEMA's Multi-Hazard Risk Assessment and Loss Estimation Program, otherwise known as Hazus-MH. The current Hazus-MH analysis is based on approximate flood boundaries and national datasets. The calculation is based on flood elevation estimates using the 10-meter Digital Elevation Model on streams with drainage areas of at least 10 square miles. Additional information about the Hazus-MH process and tool can be found at <http://www.fema.gov/protecting-our-communities/hazus>.

The countywide result for Cuyahoga County was obtained from the report titled FEMA "Hazus AAL Usability Analysis" dated April 13, 2011 (FEMA 2011a) and is shown in Table 2. AAL data summarized at the census block level are shown on the Discovery Maps.

Table 2: Hazus AAL Data for Cuyahoga County, OH

FIPS Code	County	Total (in \$ K)	Building (in \$ K)	Content (in \$ K)
39035	Cuyahoga	29,973	12,476	16,477

Source: FEMA 2011a
 FIPS = Federal Information Processing Standards

3.1.2 Bathymetry

Bathymetric data are available from the National Oceanic and Atmospheric Administration’s (NOAA) National Geophysical Data Center (NGDC) hydrographic surveys from 1942, 1948, 1974, and 1976, as well as NOAA Office of Coast Survey nautical charts. The NGDC (2012) data can be found at

<http://www.csc.noaa.gov/topobathy/#> and <http://maps.ngdc.noaa.gov/viewers/bathymetry/>.

The nautical charts (NOAA 2012) can be found at

<http://www.charts.noaa.gov/OnLineViewer/GreatLakesViewerTable.shtml>.

3.1.3 Erosion Data

The Division of Geological Survey and the Office of Coastal Management of the Ohio Department of Natural Resources (ODNR) mapped the Lake Erie coast to identify coastal erosion areas since 1988. In 2010, the latest Coastal Erosion Area Maps were released. The extent of coastal recession between 1990 and 2004 was determined using mathematical calculations, aerial photographs, site visits, and extensive quality and consistency reviews. Coastal recession rates for the next 30 years were estimated based on the current recession rates, assuming no measures are taken to address the causes. Areas projected to erode beyond a certain threshold amount are designated as coastal erosion areas and are identified on coastal erosion maps.

Coastal erosion maps can be found at the local ODNR offices or viewed online at

<http://www.dnr.state.oh.us/tabid/22499/Default.aspx> (ODNR 2010).

A Coastal Erosion Area Permit is required to build within a coastal erosion area if (1) the property is immediately adjacent to Lake Erie and (2) the owner wishes to build a new structure or add 500 or more square feet (as measured at ground level) to an existing structure that is within a coastal erosion area. This applies to residential, commercial, industrial, institutional, and agricultural buildings, and septic systems. The permit process ensures that construction in areas susceptible to coastal erosion includes provisions to protect coastal bluffs and control erosion rates.

3.1.4 Federal Land

Federal lands data were obtained from the National Atlas Web site

(<http://www.nationalatlas.gov/mld/fedlanp.html>) (National Atlas of the United States 2006). The map layer shows lands owned or administered by the Federal Government, including the Bureau of Land Management, the Bureau of Reclamation, the U.S. Department of Agriculture Forest

Service, the Department of Defense, the U.S. Fish and Wildlife Service, the National Park Service, the Tennessee Valley Authority, and other agencies. Only areas of 640 acres or more are included.

There are no Federal lands along the shoreline in Cuyahoga County.

3.1.5 Jurisdictional Boundaries

Jurisdictional boundaries were obtained from the Cuyahoga County and Incorporated Areas FIRM database dated December 3, 2010 (FEMA 2010).

3.1.6 Publicly Owned Land

The Cleveland Metroparks System in Cuyahoga County includes the Emerald Necklace Trail, Lake Erie, and the public access to beaches at Edgewater State Park in Cleveland and Huntington Park in Bay Village.

Public shoreline access points, beaches, parks, etc., along Lake Erie can be found at Ohio’s Lake Erie Public Access Guidebook Web site (<http://www.ohiodnr.com/tabid/21033/Default.aspx>).

3.1.7 Shoreline Information

The total shoreline along Cuyahoga County is approximately 41.3 miles.

The shoreline classification information was obtained from USACE Detroit District (USACE 2012). Tables 3 through 6 summarize the shoreline types, land uses, coverage, and vegetation types, respectively, from this information.

Table 3: Summary of Shoreline Types

County	Total Shoreline (miles)	Shoreline Type				
		Artificial shoreline (miles)	Boulders, Bedrock (miles)	Cohesive Clays and Silts (miles)	Sand (miles)	Shingles, Pebbles, Cobbles (miles)
Cuyahoga	43.1	36.9	4.3	-	1.2	0.6

Source: USACE 2012, Lake Erie Shoreline Classification

Table 4: Summary of Shoreline by Land Uses

County	Total Shoreline (mile)	Shoreline by Land Use						
		Commercial /Industrial (mile)	Farm (mile)	Forest (mile)	High Density Residential (mile)	Moderate Density Residential (mile)	Low Density Residential (mile)	Park (mile)
Cuyahoga	43.1	18.6	-	-	16.8	5.2	-	2.5

Source: USACE 2012, Lake Erie Shoreline Classification

Table 5: Summary of Shoreline Coverage

County	Total Shoreline (mile)	Shoreline by Coverage						Other (mile)
		Bluff (2–10 feet) (mile)	Coastal Wetland	Dune (2–10 feet)	Flat Coast	High Bluff (>10 feet) (mile)	High Dune (>10 feet) (mile)	
Cuyahoga	43.1	4.4	-	-	28.0	10.8	-	-

Source: USACE 2012, Lake Erie Shoreline Classification

Table 6: Summary of Shoreline Vegetation Types

County	Total Shoreline (mile)	Shoreline by Vegetation Type					Unmaintained Non-Woody Vegetation (mile)
		High Density Shrubs or Trees (mile)	Moderate Density Shrubs or Trees (mile)	Low Density Shrubs or Trees (mile)	Manicured Lawn (mile)	None (mile)	
Cuyahoga	43.1	-	12.5	1.2	20.1	9.3	-

Source: USACE 2012, Lake Erie Shoreline Classification

3.1.8 Stream Lines/Hydrographs

Stream lines were obtained from the from the Cuyahoga County and Incorporated Areas FIRM database dated December 3, 2010 (FEMA 2010).

3.1.9 Topography

As part of the Great Lakes Coastal Flood Study, Light Detection and Ranging data were collected by the USACE to develop topographic and bathymetric data along the Lake Erie shoreline.

The topographic data are expected to become available during the spring of 2013 for the Lake Erie study area. The new topographic data may be used for the transect-based coastal flood hazard analysis as well as the mapping of the coastal flood risks. Existing high-resolution topographic data are currently available from the NOAA Coastal Service Center at <http://csc.noaa.gov>.

3.1.10 Transportation

Transportation data were obtained from the Cuyahoga County and Incorporated Areas FIRM database dated December 3, 2010 (FEMA 2010).

3.1.11 Watershed Boundaries

The Watershed Boundary Dataset Hydrologic Unit Code 8 (HUC8) boundaries were obtained from the U.S. Department of Agriculture Natural Resources Conservation Service GeoSpatial Data Gateway Web site (<http://datagateway.nrcs.usda.gov/>).

Cuyahoga County contains portions of four HUC8 watersheds: Lake Erie (04120200), Black-Rocky (04110001), Cuyahoga (04110002), and Ashtabula-Chagrin (04110003).

3.2 OTHER DATA AND INFORMATION

Cuyahoga County is located in northern Ohio on the shore of Lake Erie. It is bordered on the north by Lake Erie, on the east by Lake and Geauga Counties, on the south by Summit, Lorain, and Medina Counties, and on the west by Lorain County (see Discovery Maps in Attachment C).

The climate for Cuyahoga County is mainly continental in character, but experiences strong modifying influences from Lake Erie. The temperature ranges from an average monthly high of 71.4 degrees Fahrenheit (°F) in July to a low of 26.9 °F in January, with an average yearly temperature of 49.7 °F. The mean annual precipitation is 34.99 inches and the average recorded snowfall is 46 inches per year. The precipitation is fairly uniformly distributed throughout the year (FEMA 2010).

Cuyahoga County lies in the glaciated physiographic region of Ohio, and has a diverse soil composition. The majority of soils within the County fall into the Mahoning-Ellsworth association. This association occupies gently undulating to rolling upland areas. The Mahoning soils are somewhat poorly drained, while Ellsworth soils are moderately well-drained (FEMA 2010).

Forest vegetation is classified as the Oak-Hickory zone. The considerable variation in topography and soils inhibited agricultural development, leaving many areas that were not absorbed by urbanization to natural forest vegetation. The variation in topography and soils gives significant variation in the visual characteristics and flora of the region (FEMA 2010).

3.2.1 Coastal Barrier Resources System

Coastal barriers are unique land forms that protect distinct aquatic habitats and serve as the mainland's first line of defense against damage from coastal storms and erosion. The Coastal Barrier Resources System (CBRS) defines a coastal barrier as a landform composed of unconsolidated shifting sand or other sedimentary material that is generally long and narrow and entirely or almost entirely surrounded by water. They are sufficiently above normal tides so that they usually have dunes and terrestrial vegetation.

The CBRS boundaries were downloaded from U.S. Fish and Wildlife Service Web site (http://www.fws.gov/CBRA/Maps/Data_Disclaimer_Shapefiles.html).

Cuyahoga County has no CBRS.

3.2.2 Coastal Zone Protection Structures

The USACE maintains a large infrastructure of over 900 coastal structures in the United States. The coastal structures protect harbors and shore-based infrastructure, provide beach and

shoreline stability control, provide flood protection, and protect coastal communities, roadways and bridges, etc. Coastal structures include seawalls, bulkheads, revetments, dikes and levees, breakwaters, groins, sills/perched beaches, and jetties and piers.

The USACE coastal structure data were extracted from the Enterprise Coastal Inventory Database from the Engineer Research and Development Center and were provided through the USACE Buffalo District in July 2012.

The USACE coastal structures in Cuyahoga County are listed below and shown in the Discovery Map.

- Cleveland Harbor East Arrowhead Breakwater, OH
- Cleveland Harbor East Breakwater, OH
- Cleveland Harbor East Pier, OH
- Cleveland Harbor West Arrowhead Breakwater, OH
- Cleveland Harbor West Breakwater, OH
- Cleveland Harbor West Pier, OH
- Euclid General Hospital Shore Protection, OH
- Rocky River Harbor East Pier, OH

During a review of the USACE oblique imagery, an additional 750 coastal structures along the Lake Erie U.S. coastline were identified. Man-made coastal structures visible from a map scale of 1:1,500 to 1:3,000 were marked and inventoried. The coastal structures for Cuyahoga County are shown on the Discovery Maps.

3.2.3 Community Assistance Visits

Statewide Community Assistance Visits (CAVs) are part of the evaluation and review process used by FEMA and local officials to ensure that each community adequately enforces local floodplain management regulations to remain in compliance with NFIP requirements. Generally, a CAV consists of a tour of the floodplain, an inspection of community permit files, and meetings with local appointed and elected officials. During a CAV, observations and investigations focus on identifying issues in various areas, such as the community's floodplain management regulations (ordinance), community administration and enforcement procedures, engineering or other issues within the FIRMs, and other problems in the community's floodplain management.

Any administrative problems or potential violations identified during a CAV are documented in the CAV findings report. The community is notified and given the opportunity to correct those administrative procedures and remedy the violations to the maximum extent possible within established deadlines. If a CAV is closed, then the issues brought up in the CAV have been adequately addressed by the community.

The summary reports of CAV findings were extracted from the FEMA Community Information System (CIS) (<https://portal.fema.gov/famsVuWeb/home>) on October 2, 2012.

The history of CAV activity in Cuyahoga County is summarized in Table 7. The information provided in this table includes both open CAVs and those that have already been addressed. The State has conducted seven CAVs in five communities, including the Cities of Bay Village, Cleveland, Lakewood, and Rocky River. There are no open CAVs in Cuyahoga County.

No CAV records were found for the Village of Bratenahl or Cuyahoga County (Unincorporated Areas).

Table 7: Summary of CAV Findings in Cuyahoga County, OH

County	CID	Community	CAV Date	Ordinance	Enforcement	Engineering	Other Problems	Biennial	Program Problems	violations	Remedial Actions	CAV closed*	Agency	
Cuyahoga, OH	390093	Bay Village, City Of	5/17/1994	Serious	Serious	None	None	Y	N	N	-	7/20/1994	State	
			1/6/2009	None	Minor	None	None	N	N	Y	-	9/9/2009	State	
	390104	Cleveland, City Of	6/3/1998	Serious	Serious	Serious	None	N	N	N	N	10/4/2006	State	
	390112	Lakewood, City Of	7/21/1993	Minor	Minor	None	Minor	N	N	N	-	8/17/1993	State	
	395372	Rocky River, City Of	5/17/1994	Serious	Serious	Minor	None	None	N	N	Y	N	7/20/1994	State
			5/17/2001	Serious	Serious	None	None	N	N	Y	N	6/13/2001	State	

CID = Community Identification

* The issues brought up during a CAV have been adequately addressed before it is officially closed.

3.2.4 Community Rating System

The Community Rating System (CRS) is a voluntary incentive program to provide flood insurance premium discounts to NFIP-participating communities that take extra measures to manage floodplains above the minimum requirements. A point system is used to determine a CRS rating. The more measures a community takes to minimize or eliminate exposure to floods, the more CRS points are awarded and the higher the discount on flood insurance premiums.

The list of CRS communities is available on FEMA’s Web site at <http://www.fema.gov/library/viewRecord.do?id=3629> (FEMA 2011b).

No communities in Cuyahoga County participate in the CRS program.

3.2.5 Comprehensive Plans

A comprehensive plan is a document that provides the framework and policy direction for land use decisions. Comprehensive plans usually include chapters detailing policy direction affecting land use, transportation, housing capital facilities, utilities, coastal and rural areas. Comprehensive plans identify where and how growth needs will be met.

Table 8 summarizes the status of the comprehensive plans in Cuyahoga County.

Table 8: Summary of Comprehensive Plans

Participating Jurisdiction	Comprehensive Plan Status	Web site
Bay Village, City of	Original 1969 Updated 1999	http://planning.co.cuyahoga.oh.us/documents/
Bratenahl, Village of	In Process	N/A
Cleveland, City of	2007	http://planning.city.cleveland.oh.us/cwp/contents.html
Lakewood, City of	1993	http://onelakewood.com/Development/Default.aspx
Rocky River, City of	2005	http://www.rrcity.com/rocky_river_master_plan.pdf

There was no comprehensive plan found for the City of Euclid. There was also no countywide comprehensive plan found.

The City of Bay Village Master Plan (Cuyahoga County Planning Commission 1999) is dated June 1999. In the plan, the community sets forth the goals to provide guidance in developing more detailed community planning policies and objectives. The goals for natural resources are to:

- Improve access to Lake Erie for the residents of Bay Village
- Recognize the large open space provided by Cahoon and Huntington Parks as a unique resource for the community that should be preserved

As a stable and built up community, the City expected little land use change for most of the community. Major land use changes include the proposal for a higher density of housing in the Dover Center area, development of the Forestview School site for housing, and development of

office use in the vicinity of Dover Center Road and at Clague Parkway. However, the plan had limited guidance on how to preserve natural resources.

The Connecting Cleveland 2020 Citywide Plan (Cleveland City Planning Commission 2007) is the new comprehensive plan for the future of Cleveland and its neighborhoods. This “general plan,” more commonly known as a “comprehensive plan,” serves as a blueprint or a roadmap for development and revitalization activities in the City.

The citywide plan establishes an overarching vision of the City’s future, typically looking out at least 10 years, and provides guidance on development-related decisions that must be made on a day-to-day basis. The plan presents its vision in the form of a future land use map and a wide-ranging set of goals, policies, and implementation strategies.

The plan promotes lively, mixed-use, pedestrian-friendly urban districts as the foundation for revitalization and redevelopment. Throughout the City, the new plan proposes mixed-use districts that feature retail stores, restaurants, and offices mixed with housing in a pedestrian-oriented, transit-oriented environment. Other proposed mixed-use districts take advantage of opportunities for “live-work” space in areas characterized by older industrial buildings that are no longer in demand by traditional industrial operations. The future land use map will be adopted into the zoning regulations.

The goals and policies are set for housing, retail, economic development, recreation and open space, community service, safety, transportation and infrastructure, arts and culture, sustainability, and preservation.

Lakewood Community Vision (Lakewood Planning Commission 1993), Lakewood’s long range plan, was adopted by the community in April 1993. The community pictured the desired future in terms of four issue areas of image, housing, economic development, and physical environment. The plan summarizes and prioritizes the strategies based on the impact on the community, the urgency to implement the strategy promptly, and the difficulty of implementation. In addition, the plan has recommended priorities for short-term, mid-term, and long-term goals. However, the plan has limited guidance on how to preserve natural resources, including coastal shoreline and wetlands.

As part of the long-range plan, the Lakewood Planning Commission adopted a Master Plan for Lakewood Park (Brandstetter Carroll Zofcin Inc. 2006) in 2001, which was amended in May 2004.

The City of Rocky River (2005) developed a master plan in 2005 to guide future development. It recognized that the single family residential development was the major land use in the city and that the commercial uses were focused on two primary commercial corridors. The plan identifies the goals and values of the community that serve to guide the process and represent a solid foundation upon which to base future decision making efforts. The plan focuses on nine areas. The focus areas tend to follow primary transportation routes and commercial districts through and around the City, including Detroit Road, Wooster Road, Hilliard Boulevard, and Center Ridge Road, as well as distinct neighborhoods such as Linda Street and the Yacht Club Basin. A series of individual goals was created for each focus area that would allow development to occur so as to benefit both the district and the City of Rocky River. Finally, for each individual focus area directives were established to guide future redevelopment opportunities as they arise.

In addition, the master plan also includes citywide recommendations for parks and public space, infrastructure priorities, zoning code analysis, special use districts, and public review boards.

The City identified five short-term initiatives and four long-term initiatives in addition to five City priorities for master plan implementation.

3.2.6 Coordinated Needs Management Strategy and NFIP Mapping Needs

FEMA’s Coordinated Needs Management Strategy (CNMS) was initiated through FEMA’s Risk MAP program in 2009. The CNMS is a FEMA initiative to update the way FEMA organizes, stores, and analyzes flood hazard mapping needs information for communities. The CNMS is only for riverine studies at this time. There are three classifications within the CNMS: “Valid,” “Unverified,” and “Unknown.” New and updated studies (those with new hydrologic and hydraulic models) performed during the Map Modernization program were automatically determined to be “Valid” and the remaining studies went through a 17-element validation process with 7 critical and 10 secondary elements. A stream study has to pass all of the critical elements and at least seven secondary elements to be classified as “Valid.” Studies that have a strong indication of change that may impact the delineation of the flood hazard or flood elevation (but warrant further analysis to validate the change) are classified as “Unverified.” Streams with a status of “Unknown” are those that have a study underway, will be evaluated in the future, or do not have sufficient information to determine whether they are “Valid” or “Unverified” (FEMA 2012a). Currently, all Ohio counties have undergone the CNMS classification process.

Table 9 summarizes the draft results of the validation analysis obtained from the CNMS in July 2012.

Table 9: CNMS Status for Cuyahoga County, OH

County	FIPS Code	Stream Mileage			Total
		Valid	Unknown	Unverified	
Cuyahoga	39035	318.6	14.6	62.7	395.9

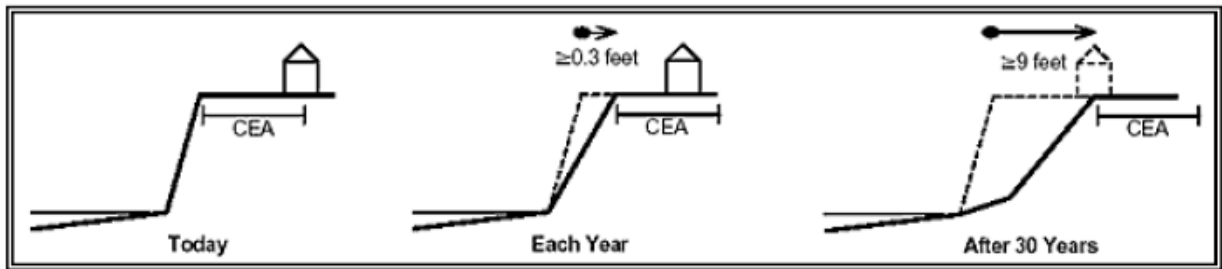
FIPS = Federal Information Processing Standards

3.2.7 Critical Facilities

The Cuyahoga County Hazards Mitigation Plan (2011) identified critical facilities, including hospitals, fire stations, police stations, and storage of critical records and similar facilities. Six critical facilities were identified within 100-year floodplains: one school, one nursing home, three day care facilities, and one police/fire station. The total potential loss is \$28,431,900. Based on the locations shown in Appendix 8 of the Mitigation Plan, the facilities are expected to be outside of the storm surge inundation area.

3.2.8 Critically Eroded Beaches and Beach Nourishment/Dune Replacement Projects

Coastal Erosion Area Maps are discussed in Section 3.1.3 of this report. Figure 2 illustrates the effects of coastal erosion over a 30-year period.



*Source: Erie County Natural Hazards Mitigation Plan (EMH&T, 2005)

Figure 2: Effects of Coastal Erosion

General erosion rates for Cuyahoga County are provided in Table 10. The long-term recession rates cover the years 1877 to 1973 with the short-term rates representing data from 1973 to 1990 (ODNR 2011).

Table 10: Lake Erie Erosion Statistics – Cuyahoga County, OH

County	Long-Term Distance (feet)	Long-Term Rate (feet/year)	Short-Term Distance (feet)	Short-Term Rate (feet/year)
Cuyahoga	60	0.6	8	0.4

More detailed coastal erosion statistics and estimated dollars lost for each community can be found in the Cuyahoga County Mitigation Plan (Cuyahoga County 2011). As indicated in Table 11, it estimates \$13,985 is lost per year for land along the Lake Erie coast, assuming the average recession rate is 0.1 foot per year. These numbers might be changed by the updated Coastal Erosion Area Maps.

Table 11: Vulnerability Assessment / Potential Dollars Lost as a Result of Coastal Erosion in Cuyahoga County, OH

Community	Length of coastline (feet)	Acres of coastline erosion	Land value of ½-acre lot	Total estimate dollars lost per year
Bay Village	28,000	0.064	\$75,000	\$4,800
Rocky River	10,280	0.023	\$82,000	\$1,886
Lakewood	19,800	0.045	\$46,040	\$2,083
Cleveland	52,000	0.119	\$9,400	\$1,118
Bratenahl	14,300	0.032	\$100,000	\$3,200
Euclid	16,700	0.038	\$23,640	\$898
Total	141,080	0.321	\$336,340	\$13,985

Source: Cuyahoga County 2011

To address the coastal erosion issue, ODNR began the preliminary stages of erosion management plan development in the late 1990s. More recently, ODNR began development of the formal Lake Erie Shore Erosion Management Plan (LESEMP) for local communities and individual property owners to aid in the management of coastal erosion. The recommendations contained within the LESEMP will serve as a best practices reference for the management of erosion along Ohio’s coast. The LESEMP is a non-regulatory initiative and will not be used for implementation or enforcement of regulatory measures. The LESEMP is still under development with a few chapters completed. It is available at the LESEMP Web site (http://www.ohiodnr.com/Coastal_Main_Menu/HelpforLandowners/ProgramsforResourceImprovement/LakeErieShoreErosionManagementPlan/LESEMP_Ch1_Introduction/tabid/23308/Default.aspx).

3.2.9 Dams

The National Inventory of Dams (NID) is a congressionally authorized database that documents dams in the United States and its territories. The current NID, published in 2010, includes information on 84,000 dams that are more than 25 feet high, hold more than 50 acre-feet of water, or are considered a significant hazard if they fail. The NID is maintained and published by the USACE, in cooperation with the Association of State Dam Safety Officials, the States and territories, and Federal dam-regulating agencies. The database contains information about the dams’ locations, sizes, purposes, types, last inspections, regulatory facts, and other technical data. The information contained in the NID is updated approximately every 2 years.

The NID is available at the USACE Web site <https://nid.usace.army.mil/>.

As indicated in Table 12, the NID shows 22 dams in Cuyahoga County and 8 of them have Emergency Action Plans. The locations of the dams are shown on the Discovery Map.

Table 12: Summary of Dams in Cuyahoga County, OH

FIPS Code	County	Number of Dams within County	Number of Dams with Emergency Action Plans	Number of Dams within Project Area
39035	Cuyahoga	22	8	0

FIPS = Federal Information Processing Standards

The ODNR Dam Safety Program regulates the construction, operation, and maintenance of Ohio’s dams through the use of periodic inspections, permits, and regulations to protect from damages due to failure. More information is available on the ODNR Dam Safety Web site <http://www.dnr.state.oh.us/water/tabid/3329/Default.aspx>.

3.2.10 Declared Disasters

The FEMA Disaster Declarations Summary is a summarized dataset describing all federally declared disasters. This information begins with the first disaster declaration in 1953 and features all three disaster declaration types: major disaster, emergency, and fire management assistance.

The dataset includes declared recovery programs and geographic areas (County data not available before 1964).

The list of FEMA’s disaster declarations is available on the FEMA Web site at <http://www.fema.gov/data-feeds> (FEMA 2012b). Table 13 lists the major disaster declarations that have been declared in Cuyahoga County.

Table 13: Declared Disasters in Cuyahoga County, OH

Disaster Number	Declaration Date	Disaster Type	Incident Type	Description
191	4/14/1965	DR	Tornado	Tornadoes and Severe Storms
266	7/15/1969	DR	Tornado	Tornadoes, Severe Storms, and Flooding
345	7/19/1972	DR	Flood	Tropical Storm Agnes
377	4/27/1973	DR	Flood	Severe Storms and Flooding
480	9/11/1975	DR	Flood	Winds, Tornadoes, Heavy Rains, and Flooding
3055	1/26/1978	EM	Snow	Blizzards and Snowstorms
831	6/10/1989	DR	Flood	Severe Storms and Flooding
951	8/4/1992	DR	Severe Storm(s)	Severe Storms, Tornadoes, and Flooding
1444	11/18/2002	DR	Severe Storm(s)	Severe Storms and Tornadoes
1484	8/1/2003	DR	Tornado	Tornadoes, Flooding, Severe Storms, and High Winds
3187	9/23/2003	EM	Other	Power Outage
1519	6/3/2004	DR	Severe Storm(s)	Severe Storms and Flooding
1556	9/19/2004	DR	Severe Storm(s)	Severe Storms and Flooding
1651	7/2/2006	DR	Severe Storm(s)	Severe Storms, Tornadoes, Straight Line Winds, and Flooding
3346	6/30/2012	EM	Severe Storm(s)	Severe Storms

DR = Major Disaster
EM = Emergency

3.2.11 Flood Insurance Policies

A community’s agreement to adopt and enforce floodplain management ordinances, particularly with respect to new construction, is an important element in making flood insurance available to home and business owners. For this Discovery project, data on flood insurance policies were also gathered.

Table 14 summarizes the numbers and premiums of insurance policies, the numbers and dollar amounts of paid losses, and the numbers of substantial damage in communities of Cuyahoga County. The data were based on CAV Community Summary Reports that were extracted from FEMA’s CIS Web site (<https://portal.fema.gov/famsVuWeb/home>) on December 21, 2011.

Data from the coastal influenced communities are listed in Table 14.

Table 14: Summary of Flood Insurance Policies and Claims in Cuyahoga County, OH

Community	CID	Total Number of Policies	Total Premiums (\$)	Insurance in Force (\$)	Total Number of Closed Paid Losses	Amount of Closed Paid Losses (\$)	Number of Substantial Damage Closed Paid Losses
Cuyahoga County (Unincorporated Areas)	390766	16	\$13,517	\$2,814,600	7	\$97,151.38	0
Bay Village, City of	390093	44	\$26,633	\$9,847,700	14	\$57,717.60	0
Bratenahl, Village of	390734	4	\$1,620	\$1,400,000	0	0	0
Brooklyn, City of	390100	4	\$1,814	\$937,000	2	\$1,945.77	0
Cleveland, City of	390104	73	\$100,397	\$21,282,500	81	\$1,044,564.76	1
Euclid, City of	390107	17	\$8,230	\$3,155,300	7	\$13,728.85	0
Lakewood, City of	390112	27	\$29,953	\$5,505,800	32	\$535,445.56	3
Rocky River, City of	395372	26	\$20,543	\$8,749,300	33	\$597,518.99	5

CID = Community Identification

3.2.12 Gage Data

3.2.12.1 Meteorological Stations

The National Data Buoy Center (NDBC) is a part of the NOAA National Weather Service. The NDBC designs, develops, operates, and maintains a network of data collecting buoys and coastal stations. NDBC provides hourly observations from a network of about 90 buoys and 60 Coastal Marine Automated Network (C-MAN) stations located nationally to measure wind speed, direction, and gust; atmospheric pressure; and air temperature. Water level is measured at selected stations. The historical and current data are available at the NDBC Web site <http://www.ndbc.noaa.gov/>.

In addition, NOAA’s Great Lakes Environmental Research Laboratory focuses on the Great Lakes. It maintains multiple datasets, including a collection of meteorological data in both the United States and Canada. The datasets can be found online at:

<http://www.glerl.noaa.gov/ifyle/data/Station/Station.php?sta=All&year=All>.

Table 15 shows the meteorological station identification number and location for the gages in the Lake Erie Coastal Flood Study area for Cuyahoga County. The station locations are shown on the Discovery Map.

Table 15: Meteorological Stations in Cuyahoga County, OH

Station ID	Location	Owner	Data	Years of Historical Data
CNDO1	Cleveland, OH	NOAA's National Ocean Service	Water Level Meteorological Observation	2006–Present
CLE	Cleveland, OH	Great Lakes Environmental Research Laboratory	Meteorological Observation	1948–2007

3.2.12.2 Stream Gages

The U.S. Geological Survey (USGS) National Water Information System Web Interface (<http://waterdata.usgs.gov/nwis>) provides real-time data for any given stream gage location. Table 16 shows the gage identification numbers and locations for the gages in Cuyahoga County. USGS stream gage locations are also shown on the Discovery Map.

Table 16: Stream Gage Stations in Cuyahoga County, OH

County	Gage ID	Begin Date	End Date	Gage Location
Cuyahoga	4201500*	10/01/23	Current	Rocky River near Berea, OH
	4206500*	03/01/23	09/30/24	Cuyahoga River at Brecksville, OH
	4207200*	12/01/62	Current	Tinkers Creek at Bedford, OH
	4207500*	10/01/21	06/08/81	Ohio Canal at Independence, OH
	4208000*	10/01/21	Current	Cuyahoga River at Independence, OH
	4208502*	10/01/72	09/30/86	Big Creek at Cleveland, OH
	4208504*	10/01/91	Current	Cuyahoga River Newburgh Heights, OH
	4208690*	05/01/77	10/16/85	Euclid Creek near Euclid, OH

*Gage expected to be outside of the storm surge inundation area

3.2.12.3 Water Level Station

NOAA’s Center for Operational Oceanographic Products and Services (CO-OPS) maintains several water level stations in the Lake Erie area. CO-OPS’ primary mission is the collection and dissemination of high quality and accurate measurements of lake level for scientific studies.

Table 17 shows the water level gage station ID and location for the gage in Cuyahoga County. The station location is shown on the Discovery Map.

The station information and water level data are available at NOAA CO-OPS Web site: http://tidesandcurrents.noaa.gov/station_retrieve.shtml?type=Great Lakes Water Level Data&state=Lake+Erie&id1=841.

Table 17: Water Level Stations in Cuyahoga County, OH

Station ID	Location	Data	Year of Establishment
9063063 (CNDO1)	Cleveland, OH	Primary Water Level Meteorological Observation	1970

In addition, six gages are located along the Canadian shoreline of Lake Erie. They are maintained by the Canadian Department of Fisheries and Oceans (DFO), Marine Environmental Data Service and are listed in Table 18. The data are available at DFO Web site:

<http://www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/twl-mne/index-eng.htm>.

Table 18: Water Level Stations in Lake Erie along Canadian Shoreline

Station ID	Location	Data	Year of Establishment
12005	Bar Point, ON	Primary Water Level	1966
12065	Kingsville, ON	Primary Water Level	1962
12250	Erieau, ON	Primary Water Level	1962
12400	Port Stanley, ON	Primary Water Level	1927
12710	Port Dover, ON	Primary Water Level	1962
12865	Port Colborne, ON	Primary Water Level	1962

Multiple gages have monthly water level data dating back to the 1860s, and the USACE Detroit District has monthly Great Lakes water levels and connecting channel outflows records since 1918. The connecting channel outflows include Chicago Diversion, Detroit River, Long Lac Diversion, New York State Barge Canal, Niagara River, Ogoki Diversion, St. Clair River, St. Lawrence River, St. Marys River, and Welland Canal.

The monthly high and low water level data from the year 1918 to 2011 at Lake Erie are available at the USACE Web site: <http://www.lre.usace.army.mil/greatlakes/hh/greatlakeswaterlevels/>.

The Great Lakes Water Levels Report provides daily mean water levels of Lake Erie for the past 3 months. The data are available at the USACE Web site:

<http://www.lre.usace.army.mil/greatlakes/hh/greatlakeswaterlevels/currentconditions/greatlakeswaterlevels/>.

3.2.12.4 Wave Gage/Buoy Stations

In addition to standard meteorological observation, all buoy stations and some C-MAN stations measure sea surface temperature and wave height and period. Conductivity and water current are measured at selected stations. The historical and current wave gage data are available at the NDBC Web site <http://www.ndbc.noaa.gov/>.

Table 19 shows the wave station identification number and location for the gages in the Lake Erie area. The station locations are shown on the Discovery Map.

Table 19: Wave Stations in Lake Erie

Station ID	Location	Owner	Data	Years of Historical Data
45005	W ERIE 28NM Northwest of Cleveland, OH	National Data Buoy Center	Wave Height Meteorological Observation	1980–Present
45132	Port Stanley	Environment Canada	Wave Height Meteorological Observation	1989–Present
45142	Port Colborne	Environment Canada	Wave Height Meteorological Observation	1994–Present

3.2.13 High Water Marks

USGS (2007) collected flood data, including High Water Marks (HWMs) for the severe flooding event of June 22–24, 2006. Six counties (Cuyahoga, Erie, Huron, Lucas, Sandusky, and Stark) were declared Federal disaster areas. HWMs were collected along the Cuyahoga River near Independence and Valley View, which are outside of the coastal area. No other coastal HWM data were collected prior to the Discovery Meeting by the USGS or USACE. Communities were asked about coastal HWMs during the Discovery Meeting; however, they did not have any data to provide.

3.2.14 Historical Flooding

In Cuyahoga County, the principal flooding problem in communities bounded by Lake Erie is the high water levels of Lake Erie created by a combination of abnormal stillwater levels compounded by wind setup and wave action from north and northeast storms.

The maximum mean monthly Lake Erie level recorded at Cleveland occurred during 1973 at Elevation 575.1 National Geodetic Vertical Datum of 1929, formerly referred to as the Sea Level Datum of 1929 level. The estimated recurrence for a level of this magnitude is less than 10 years based upon the open-coast flood level data as developed by the USACE as presented in the report on the Great Lakes Open-Coast Flood Levels (FEMA 2010).

In the City of Cleveland, the port construction has all but eliminated the Lake Erie flooding issue from the industrialized lakeshore with flooding now confined primarily to the Gordon Park and Edgewater Park areas (FEMA 2010).

Cuyahoga County performed the initial hazard assessment using information from various sources, including FEMA, the NCDC Web site, USGS, Northeast Ohio Regional Sewer District, and the ODNR, Division of Geological Survey (Cuyahoga County 2011).

Table 20 summarizes the estimated damage from flooding events in Cuyahoga County. The cost estimates are for individual events and not for individual counties, so damages incurred by other counties are included.

Table 20: Summary of Estimated Damage from Flooding Events in Cuyahoga County, OH

Initial Hazard Assessment	No. of Events	*Cost in Millions
Severe Storms (1950–2010)	562	67.08
Thunderstorms	324	14.29
High Wind / Lightning	72	47.34
Hail	166	5.45
Winter Storms (1993–2010)	76	252.11
Floods (1993–2010)	70	98.93
Flash Floods	42	55.78
100-Year/Non-Flood Zone Floods	28	43.16

*Cost includes damages incurred by other counties as well
Source: Cuyahoga County 2011

Details of eight significant flooding events that occurred in the County are summarized in Table 21 and can be found in the Cuyahoga Mitigation Plan (Cuyahoga County 2011).

Table 21: Estimated Damage from Identified Flooding Events in Cuyahoga County, OH

Date	Type	Damage	Affected Area
August 13, 1994	Flood	\$5 Million	Areas along the Cuyahoga River
July 15, 1995	Flash Flood	\$800,000	Numerous areas including The Cain Park Amphitheater, Cleveland, North Olmsted, and South Euclid
September 7, 1996	Flash Flood	\$100,000	Numerous areas including Cleveland, Parma, Strongsville, and Olmsted Falls
June 1, 1997	Flood	\$400,000	Areas along the Cuyahoga River
August 10, 1998	Flood	\$275,000	Areas in Cleveland and surrounding suburbs
July 21, 2003	Flood	\$15 Million	Areas along the Cuyahoga River
June 22, 2006	Flash Flood	\$35 Million	Numerous areas including Brecksville, Broadview Heights, Parma, North Royalton, and Solon
February 28, 2011	Flood	\$700,000	Numerous areas in Cuyahoga County

Source: Cuyahoga County 2011

Besides Lake Erie, other river flooding sources included Rocky River, Rocky River Tributary, Tinker Creek, Chagrin River, Big Creek, Euclid Creek, and Cuyahoga River. In addition, the County (Cuyahoga County 2011) identified locations such as intersections, culverts, and bridges in more than 30 communities where flooding was observed.

Historically, seiches and storm surges have had minimal impact on Cuyahoga County. Seiching is less likely to occur along the Cuyahoga County shoreline than in the shallow western basin of Lake Erie. The NCDC Web site lists only one seiche event that occurred in Lake Erie in 1998. This event did not impact Cuyahoga County. The Cleveland Plain Dealer reported a 1942 storm surge that killed seven people from Bay Village to Ashtabula when a wall of water slammed onto the shore.

The estimated potential property losses to seiche/coastal flooding were \$10,410,000 and \$110,000 for business interruption per a State of Ohio analysis (Cuyahoga County 2011).

3.2.15 Land Use

Table 22 lists the latest land use data for Cuyahoga County, OH.

Table 22: Summary of Land Use in Cuyahoga County, OH

	Area (square miles)	Urban	Cropland	Pasture	Forest	Open Water	Wetlands	Bare/Mines
Cuyahoga	458.0	66.85%	0.99%	0.03%	30.95%	0.65%	0.37%	0.17%

Source: Ohio Department of Development 2011

According to the Cuyahoga County Planning Commission (2012), Cuyahoga County will soon become the first “built-out” county within the State of Ohio. In 1948, nearly 26 percent of the County’s land was developed. By 2002, nearly 90 percent had been developed.

Cuyahoga County is developing a Greenspace Plan to promote a broad comprehensive vision for greenspace protection and restoration within the County. Along with conservation, the plan will promote complimentary development. Through planning, creating, and managing greenspaces, Cuyahoga County will be a place where:

- Natural places are an integral part of daily life
- Natural processes are visible and instructional
- Waterfronts are cared for and accessible

The Greenspace Plan includes elements such as:

- A system of natural corridors
- A countywide trail system
- Preservation of scenic views
- Protection and restoration of critical natural areas
- Greening of neighborhoods and property stewardship

- Public awareness and education

In October 2002, the Cuyahoga County Planning Commission passed Resolution No. 021010-A, approving the Cuyahoga County Greenprint as a guide for planning, creating, and managing greenspaces in Cuyahoga County. The resolution also urged the communities of the County; regional authorities; public, private and non-profit organizations; and residents of the County to use the Greenprint as a guide to decision making and action.

3.2.16 Levees

The Midterm Levee Inventory (MLI) project compiled a database of structures that were designed to provide at least the minimum level of protection from the base flood level (1-percent-annual-chance flood). The latest MLI Status Report was published in November 2011 by FEMA. The report indicates that 23 of 88 levees in Ohio counties have been inventoried.

The MLI Levee database shows one levee segment in Cuyahoga County that is within the project area (as listed in Table 23). The levee location is shown on the Discovery Map.

Table 23: Summary of Levees in Cuyahoga County, OH

Segment ID	Length (mile)	Name	Owner	Flood Source	FIRM Protection	Segment Certification	Midterm Levee Inventory Potential Hazard Classification	Design Frequency	FEMA Accreditation Date	Was a PAL?
1504001122	0.23	Euclid Creek Levee	USACE	Euclid Creek	No	Not Certified	-	1% Annual Chance	-	Yes

PAL = Provisionally Accredited Levee

3.2.17 Letters of Map Change

A Letter of Map Change (LOMC) is a letter that reflects an official revision to an effective NFIP map. LOMCs are issued in place of the physical revision and republication of the effective FIRM. LOMCs include completed cases of Letters of Map Amendment (LOMAs) and Letters of Map Revision (LOMRs), including LOMRs based on fill (LOMR-Fs), and conditional LOMRs. The lists of LOMC cases were obtained from the FEMA Mapping Information Platform Web site (<https://hazards.fema.gov/femaportal/wps/portal>) in April 2012.

Table 24 lists the number of LOMCs in the County. No Conditional LOMAs or Conditional LOMR-Fs were included. The LOMCs are shown on the Discovery Maps. Clusters of LOMCs indicate a need for updated maps.

Table 24: Summary of LOMC Cases in Cuyahoga County, OH

County	Number of Letters of Map Amendment	Number of Letters of Map Revision	Number of Letters of Map Amendment within Project Area
Cuyahoga County	350	44	8

3.2.18 Mitigation Plan Status and Mitigation Projects

A local hazard mitigation plan is a long-term strategic/guidance document used by an entity to reduce future risk to life, property, and the economy in a community. A hazard mitigation plan has the following elements:

- A public participation process for bringing together diverse stakeholders in the jurisdiction(s) to provide an array of input into the plan
- A risk assessment to identify the hazards, determine the people and property subject to those hazards, and estimate vulnerability
- A mitigation strategy that contains goals, objectives, and an action plan to implement priority mitigation actions that reduce risk
- A maintenance process to ensure the plan is reviewed and updated
- An adoption requirement to ensure the support from participating jurisdictions

Local mitigation plans are required to be updated every 5 years to maintain eligibility for FEMA Hazard Mitigation Assistance grant programs.

The status of current hazard mitigation plans is shown in the Table 25. The data were obtained from FEMA’s Plan Approval Status Report based on Regional reports for the end of May 2012 (FEMA 2012c) as well as the Ohio Emergency Management Agency Mitigation Planning Web site (<http://ja.cuyahogacounty.us/en-US/publications.aspx>).

Table 25: Status of Hazard Mitigation Plans

Participating Jurisdiction	Approval Date	Expiration Date	Second Expiration Date	Link
Cuyahoga	9/4/2012	12/22/2016	05/22/2017	http://ja.cuyahogacounty.us/en-US/publications.aspx

3.2.18.1 Hazard Mitigation Grant Program

Hazard mitigation initiatives are intended to actively reduce a community’s vulnerability to hazards and are developed to accurately reflect a community’s need. A variety of hazard mitigation projects has been submitted to FEMA’s Hazard Mitigation Grant Program. A list of completed projects was provided by FEMA in August 2012. There are no completed projects in Cuyahoga County, OH.

3.2.18.2 Public Assistance Projects

A list of Public Assistance-funded projects is available at FEMA data feeds Web site (<http://www.fema.gov/data-feeds>).

In Cuyahoga County, 83 Public Assistance projects with a total of \$2,904,952 of Federal share obligations were related to the severe storm on June 2004. There were 69 projects with a total of \$1,283,039 Federal share obligations for a power outage emergency declaration in September 2003 and 2 projects with a total of \$167,415 Federal share obligations for a hurricane in September 2005.

3.2.18.3 Ohio Coastal Management Assistance Grants

To preserve, protect, and enhance Ohio’s Lake Erie coastal resources, the Ohio Coastal Management Program (OCMP) has provided grants help since 1998. More than \$3.5 million has been awarded to local communities through OCMP from NOAA. The grants are awarded on a competitive basis, with applicants providing a minimum of 50 percent of the project costs. This is a reimbursement grant program whereby the project sponsor is expected to make the initial outlays for the project and then request reimbursement.

The past grant projects are available at the ODNR Office of Coastal Management Web site (http://ohiodnr.com/coastal/LakeErie/Grants_CMAG/tabid/9337/Default.aspx) and are shown in Table 26.

3.2.18.4 Great Lakes Coastal Restoration Grants

Great Lakes Coastal Restoration Grants were part of a one-time \$30 million Congressional appropriation to the Great Lakes States. Ohio’s portion of the funds was awarded 2001 and a portion re-appropriated in 2003.

Seventeen projects were funded with Ohio’s portion of the Federal grants. Ohio’s funding priorities were protection of critical coastal areas; water quality protection and coastal restoration; and sustainable development initiatives. Selected projects were consistent with

OCMP priorities and helped implement the goals of the Lake Erie Protection and Restoration Plan. The recipient's share of total project costs was 20 percent.

The funds were provided by the U.S. Department of Commerce, NOAA and were administered by the ODNR Office of Coastal Management. Proposals funded under this program were consistent with the OCMP.

The grant projects are available at ODNR Office of Coastal Management Web site (http://ohiodnr.com/LakeErie/Grants_GLCRGs/tabid/9344/Default.aspx) and are summarized in Table 26.

3.2.18.5 Grants from Coastal and Estuarine Land Conservation Program

Additional funding has been provided through Ohio’s Coastal and Estuarine Land Conservation Program (CELCP), which is also administered by the Office of Coastal Management. CELCP submits up to three land acquisition projects annually to NOAA for funding consideration. NOAA reviews all applications, ranks the projects for funding priority and submits this list to Congress. Congress makes the final determination as to what projects are funded.

Since the CELCP began, Ohio has secured more than \$16.8 million for 18 projects that leveraged more than \$34 million local dollars to acquire and conserve over 3,130 acres.

The past grants are available at ODNR Office of Coastal Management Web site (http://ohiodnr.com/LakeErie/CELCP_Selections/tabid/20009/Default.aspx) and are summarized in Table 26.

Cuyahoga County has received \$1,134,326 in OCMP Grants. This has allowed for projects totaling \$2,272,840.

Table 26: Mitigation Projects in Cuyahoga County, OH (through Ohio Coastal Management Program Grants)

Award Year	Grantee	Project Title (Type)	Grant Type	Grant Amount	Total Project Cost
2011	Cuyahoga Soil and Water Conservation District	Cleveland Lakefront State Parks	Lake Erie Clean Up Grant	\$5,000	\$10,000
2011	City of Lakewood	Lakewood Park	Lake Erie Clean Up Grant	\$1,380	\$2,885
2011	City of Euclid	City of Euclid Fishing Pier	CMAG	\$59,927	\$119,854
2011	Tinkers Creek Watershed Partners	Tinkers Creek Watershed Community Engagement Project	CMAG	\$21,000	\$42,500
2011	Cuyahoga Soil and Water Conservation District	Plum Creek and Upper East Branch Protection and Restoration Plans	CMAG	\$13,545	\$29,594
2010	West Creek Preservation Committee	West Creek Action Plan Implementation – Confluence Project	CMAG	\$32,000	\$70,000

Summary of Data Analysis

Award Year	Grantee	Project Title (Type)	Grant Type	Grant Amount	Total Project Cost
2009	Cleveland Metroparks (Bay Village)	Shoreline Management Plan – Huntington Reservation (planning)	CMAG	\$68,250	\$136,500
2009	Northeast Ohio Regional Sewer District	Walworth Run Green Infrastructure Feasibility Study (planning)	CMAG	\$50,000	\$106,000
2007	Cuyahoga River Community Planning	Big Creek Watershed Management Plan (watershed plans)	CMAG	\$19,950	\$43,800
2007	Northeast Shores Development Corporation	Euclid Beach Fishing Pier Feasibility Study (planning)	CMAG	\$11,000	\$22,875
2006	Cleveland Metroparks	Huntington Beach Americans with Disabilities Act Beach Access (construction)	Other*	\$50,000	\$100,000
2006	Cuyahoga County Board of Health	Mill Creek Watershed Action Plan (watershed plans)	CMAG	\$38,238	\$78,336
2006	Cuyahoga River Community Planning Organization	Supporting Balanced Growth in the Chippewa Creek Watershed (watershed plans)	CMAG	\$35,947	\$55,984
2005	Cuyahoga County Board of Health	Community Plan for the Mill Creek Watershed (planning)	CMAG	\$39,322	\$87,918
2005	Cuyahoga Soil and Water Conservation District	Euclid Creek Restoration – Subwatershed Planning (planning)	CMAG	\$43,292	\$86,741
2004	City of Cleveland	Feasibility Study for Public Access: Dike 14, Cleveland, OH (planning)	CMAG	\$50,000	\$109,394
2004	Cleveland Metroparks	Mill Creek Greenway Connector Trail (planning)	CMAG	\$90,000	\$219,539
2004	Cleveland Metroparks	Cuyahoga River West Bank Preservation (acquisition)	GLCRG	\$89,500	\$138,300
2004	City of Cleveland	Rehabilitation Study for the Former U.S. Coast Guard Cleveland Harbor Station (planning)	CMAG	\$50,000	\$100,010
2003	City of Lakewood	Lakewood Park Lakefront Revitalization Project (construction)	CMAG	\$65,250	\$130,500
2003	Cuyahoga County Planning Commission	Euclid Creek Watershed Planning Guide (planning)	CMAG	\$40,000	\$87,755
2003	Northeast Ohio Areawide Coordinating Agency	Community Revitalization Plan for Lower Big Creek, Cleveland, OH Phase 2 (planning)	CMAG	\$43,256	\$129,726

Award Year	Grantee	Project Title (Type)	Grant Type	Grant Amount	Total Project Cost
2001	Northeast Ohio Areawide Coordinating Agency	Community Revitalization Plan for the Lower Big Creek Watershed (planning)	CMAG	\$60,000	\$123,447
2000	Cuyahoga County Planning Commission	West Creek Valley Management Plan (planning)	CMAG	\$30,000	\$65,527
1998	Cuyahoga County Planning Commission	Cuyahoga Corridor Towpath Study (planning)	CMAG	\$22,321	\$31,888
Total Coastal Grants To Cuyahoga County				\$1,029,178	\$2,129,073

CMAG = Coastal Management Assistance Grant

GLCRG = Great Lakes Coastal Restoration Grant

*Other: Grant funds from one or more sources that may have been left over from under-budget projects or those that never came to fruition.

3.2.18.6 Locality Identified Mitigation Projects

In addition, Cuyahoga County analyzed approximately 30 action items for the prioritization in the Countywide All Natural Hazards Mitigation Plan (Cuyahoga County 2011). The potential action items for flash flooding, flooding, coastal flooding, and erosion are listed in the Appendices 7 and 10 of the Mitigation Plan. Additional information such as time frame, resources, responsible parties, and status are also provided.

Although several action items have been carried out or identified for riverine flooding related hazards, no action items were identified for coastal flooding and coastal erosion.

3.2.19 Oblique Imagery

The USACE collected oblique imagery for the entire Great Lakes coastline in 2012. Oblique imagery is captured at an angle, as compared to the overhead view provided by orthophotos, and allows users a 3-dimensional view of landscape, buildings, and other features. The oblique imagery for the entire Great Lakes Area can be viewed at <http://greatlakes.usace.army.mil/> and was also available for viewing during the Discovery Meetings. This dataset may be useful to communities during emergency response and planning as well as for the management of assets, critical facilities, and public properties along the Lake Erie shoreline.

3.2.20 Ordinances

County regulations regarding development within known flood hazard areas can range from ordinances with minimum NFIP requirements to strong, pro-active ordinances that not only regulate and protect new and improved development in existing Special Flood Hazard Areas (SFHAs) but also seek to mitigate the growth of SFHAs caused by increased runoff from developed areas and the degradation of natural flood control areas, such as wetlands and forests.

Title 44 of the Code of Federal Regulations Sections 60.3(a)–(e) describe the NFIP floodplain ordinance levels and provide the minimum requirements for community participation in the

NFIP. The proper ordinance level for each community is determined by the type of flooding that is present within the community, as shown in Table 27.

Table 27: Floodplain Ordinance Levels

Ordinance Level	Description
A	Floodplains have not been identified
B	Floodplains with no base flood elevations (BFEs)
C	Floodplains with BFEs or coastal flooding with no high-hazard areas (Zone V)
D	Floodplains with BFEs and floodways
E	Coastal high-hazard areas identified, but no floodways
D & E	Both floodways and coastal high-hazard areas

Ordinance level information is shown in Table 28.

Table 28: Program Status and Ordinance Level of Cuyahoga County, OH

Community	CID	Program Status	Ordinance Level
Cuyahoga County (Unincorporated Areas)	390766	Participating	D
Bay Village, City of	390093	Participating	D
Bratenahl, Village of	390734	Participating	D
Cleveland, City of	390104	Participating	D
Euclid, City of	390107	Participating	D
Lakewood, City of	390112	Participating	D
Rocky River, City of	395372	Participating	D

CID = Community Identification

3.2.21 Regulatory Mapping

The effective FIS for Cuyahoga County and Incorporated Areas (FEMA 2010) is dated December 3, 2010. Each jurisdiction included in this countywide FIS was compiled from its previously printed FIS reports. The status of coastal influenced jurisdictions is listed in Table 29.

For this countywide FIS, the flood elevation estimates for Lake Erie for its entire shoreline within the County were prepared by the USACE, Detroit District. The report was completed in April 1988 (USACE 1988).

Table 29: Effective FIS Status of Cuyahoga County, OH

Community	CID	Product Types	Initial Flood Insurance Rate Map (FIRM)	Previous Flood Insurance Study (FIS)	Effective FIS
Cuyahoga County (Unincorporated Area)	390766	FIS and FIRM	04/02/1986	April 1986	12/03/2010
Bay Village, City of	390093	FIS and FIRM	12/01/1977	June 1977	12/03/2010
Bratenahl, Village of	390734	FIS and FIRM	06/15/1981	December 1980	12/03/2010
Cleveland, City of	390104	FIS and FIRM	08/01/1978	February 1978	12/03/2010
Euclid, City of	390107	FIS and FIRM	08/17/1981	February 1981	12/03/2010
Lakewood, City of	390112	FIS and FIRM	02/01/1978	August 1977	12/03/2010
Rocky River, City of	395372	FIS and FIRM	09/18/1971	May 1980	12/03/2010

*No Special Flood Hazard Areas (SFHAs) identified.

**No previously printed FISs were found.

CID = Community Identification

Source: FEMA, Community ID Search Report, Ohio, dated April 10, 2012

Source: FEMA 2010

3.2.22 Repetitive Loss/Severe Repetitive Loss Properties

FEMA’s data suggest that claims for repetitive losses were filed in several communities in Cuyahoga County, as shown in Table 30.

Table 30: Summary of Repetitive Loss in Cuyahoga County, OH

County	CID	Community Name	No. of Rep Losses
Cuyahoga	390093	Bay Village, City of	1
	390104	Cleveland, City of	8
	390766	Cuyahoga County (Unincorporated Areas)	4
	390112	Lakewood, City of	3
	395372	Rocky River, City of	1

The Cuyahoga County Hazard Mitigation Plan (Cuyahoga County 2011) provided similar information.

3.2.23 Socioeconomic Analysis

Table 31 provides the census population data from 1990, 2000, and 2010 for Cuyahoga County.

Table 31: Summary of Census Population Data in Cuyahoga County, OH

County	1990 Population	2000 Population	2010 Population
Cuyahoga	1,412,140	1,393,978	1,280,122

Source: US Census Bureau, 2010

Over the last 10 years, the County experienced a decline in population from 1,393,978 in 2000 to 1,280,122 in 2010. The County is expected to experience a decrease in population over the next 20 years, with an expected decrease in population to 1,274,020 by 2030 (Ohio Department of Development 2011). The median age of the population is 39.7 and 37.8 percent of the population is minority.

With 59 political subdivisions, Cuyahoga County is the most populated county in the State. Based on the 2010 census, the most populated city within the County is the City of Cleveland with a population of 396,815 (Cuyahoga County 2011).

The majority of land in Cuyahoga County is covered by urban areas, including residential, commercial, industrial, transportation, and urban grasses area.

Employment statistics show that the service industry represents the largest segment of jobs at over 30 percent, followed by the trades, manufacturing, government, real estate financing, insurance, and banking industries.

The Cleveland Metroparks System in Cuyahoga County includes the Emerald Necklace Trail, Lake Erie, and the public access to beaches at Edgewater State Park in Cleveland and Huntington Park in Bay Village. The system features 16 woodland park reservations and the Cleveland Metroparks Zoo. This Park District comprises over 21,000 acres of various landscapes and attractions for park visitors to enjoy (Cuyahoga County 2011).

3.2.24 Transects

Cross-shore transects are used during coastal hazards analysis and mapping to define representative profiles for a shoreline reach to model coastal flood risks inland of the shoreline. The transect layout for coastal hazards analysis and subsequent floodplain delineation is determined by physical factors such as changes in topography, bathymetry, shoreline orientation, and land cover data, in addition to societal factors such as variations in development and density. These physical and societal factors along with aerial photographs were reviewed to determine the appropriate placement for hazard modeling transects.

Transects were spaced at closer intervals (approximately two transects per shoreline mile) for more populated and varying coastal areas. In areas of low population and uniform coastline, transects were placed approximately 1 to 2 miles apart.

The draft transect layout is shown on the Discovery Map. There are 35 proposed transects in Cuyahoga County.

3.2.25 Other Resources

The Great Lakes Coastal Resilience Planning Guide Web site (<http://greatlakesresilience.org/>) provides helpful information on coastal topics and digital coastal GIS data inventory.

SECTION FOUR DISCOVERY MEETING

The Discovery Meeting for Cuyahoga County was held on August 2, 2012, in Bay Village, OH. Communities affected by coastal flooding in Cuyahoga County were invited to the Discovery Meeting and a total of 15 people, including representatives from FEMA, state agencies and communities, attended the meeting. The purpose of this meeting was to facilitate discussion about study needs, mitigation project needs, desired compliance support, and local flood risk awareness efforts. During the Discovery Meeting, fact sheets on the Great Lakes Coastal Flood Study were distributed. These fact sheets can be obtained from the project Web site at <http://www.greatlakescoast.org/tag/fact-sheets/>.

Discovery Maps were displayed at the meeting to stimulate the discussion. Attendees, including all affected communities and selected other stakeholders, were asked to cooperatively identify Areas of Concern within the Great Lakes Coastal Study area.

Discovery Meeting Minutes and all other meeting materials are included in Attachments C and D.

SECTION FIVE RISK MAP PROJECTS AND NEEDS

5.1 COASTAL STUDIES

Information and data collected as part of the Lake Erie Discovery effort and provided in this report will be used in the upcoming Great Lakes Coastal Flood Study for Lake Erie. A summary of the Great Lakes Coastal Flood Study project can be found at <http://www.greatlakescoast.org/> under the “Great Lakes Coastal Analysis & Mapping” section.

The upcoming study is expected to include the following tasks: creation of bathymetric and topographic data, base map acquisition, coastal flood hazard analysis, and Risk MAP product development.

5.2 MITIGATION PROJECTS

Flood mitigation is any action taken to reduce risk to people or property from flooding and its effects. Mitigation actions reduce flood risk to existing and future structures and their occupants, and are the foundation of most communities’ flood mitigation efforts.

Examples of mitigation actions include:

- Creating or updating Hazard Mitigation Plans
- Adopting standards beyond NFIP minimums for flood loss reduction
- Acquiring or relocating insured structures to reduce claims on the NFIP
- Elevating floodprone structures above the 1-percent-annual-chance flood
- Elevating or dry floodproofing insured non-residential structures
- Drainage projects that protect NFIP-insured properties
- Retrofitting existing buildings and facilities
- Vegetative management / soil stabilization

The Hazard Mitigation Plan Status and Mitigation Projects for Cuyahoga County are described in Section 3.2.18.

As this Lake Erie coastal project moves forward, continued discussion regarding FEMA partnerships with local communities will be essential to assist in developing new mitigation actions and moving those actions forward.

5.3 COMPLIANCE

During the Discovery process, compliance issues were identified and discussed. Cuyahoga County has no open CAVs. Open CAVs can be an indicator of unresolved floodplain management issues. The type of floodplain management ordinances that each community has adopted may need to be changed once the Lake Erie Study is complete. As discussed in the Ordinance section of this report, all communities currently have ordinances at level D, so they should require minimal updates at the conclusion of the study. Once the Lake Erie coastal study

is complete, all communities should re-evaluate their ordinances and update them as required to maintain compliance with local and NFIP regulations.

5.4 COMMUNICATION

Throughout the Discovery process, community representatives and local stakeholders indicated a desire to be kept informed about the results of Discovery, the upcoming coastal flood study, and opportunities for public input throughout the study process. As a result of communication to date, new stakeholders have been identified and added to the master contact database for this study.

Ongoing communication and coordination will continue to be an essential part of the Lake Erie Coastal Flood Study. Throughout Discovery, Federal, State, and local stakeholders were kept informed via email, letters, newsletters, and meetings. The Great Lakes Coastal Flood Study Web site (<http://www.greatlakescoast.org>) is an excellent resource where stakeholders can obtain the most update-to-date information about the status of the Great Lakes Coastal Flood Study, data collection, upcoming meetings, new technical reports, the latest methodologies, fact sheets, and additional information. Social media sites, such as Twitter and Facebook, are also being utilized for the Great Lakes Coastal Flood Study.

5.5 UNMET NEEDS

During the Discovery Meetings, Lake Erie stakeholders had some concerns about adoption of new coastal floodplain maps and having to update zoning ordinances. There are currently no Zone V areas mapped along the Lake Erie shoreline and it is likely that the new flood study would result in the establishment of V Zones. As a result, communities would need to adopt more restrictive floodplain management ordinances.

At the conclusion of the Lake Erie Coastal Study, communities can examine the results of the study and determine if their existing mitigation projects and floodplain management programs are adequate or if they have needs that have not been met by the new study.

SECTION SIX CLOSE

State and local stakeholders were interested in the Discovery process and in providing local data that may assist in the upcoming Lake Erie Flood Study. Many stakeholders are interested in learning more about the new methodologies being used as part of the Great Lakes Coastal Flood studies, and how their community will be affected by the flood study. The information gathered in this Discovery process will provide invaluable information as the Lake Erie Coastal Flood Study proceeds.

SECTION SEVEN ATTACHMENTS

Attachment A: Communications

Attachment B: Data Collection

Attachment C: Discovery Maps

Attachment D: Discovery Meeting

SECTION EIGHT REFERENCES

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Attachment A: Communications

Attachment A-1: Local Stakeholder Contact Information

Attachment A-2: Discovery Meeting Invitations

Attachment A-3: Information Exchange Session Presentation

Attachment A-1

Local Stakeholder Contact Information

Organization Name	Organization Website	Point of Contact	Title	Address	City, ST Zip	Phone	Email	Group	Category	County/State/Watershed	Community
Alliance for the Great Lakes	http://www.greatlakes.org/contact	Angela Larsen	Coastal Program Manager	17 N. State St., Suite 1390	Chicago, IL 60602	312-939-0838, ext. 233	alarsen@greatlakes.org	Organization	Environmental	Region	All Lake Erie
Alliance for the Great Lakes	http://www.greatlakes.org/contact	Ohio Office Representative		PO Box 552	Chagrin Falls, OH 44022	216-630-8140	ohio@greatlakes.org	Organization	Environmental	Ohio	Ohio
Coastal States Organization	http://www.coastalstates.org	Representative for Lake Erie		Hall of the States, 444 North Capitol Street NW, Suite 322	Washington, D.C. 20001	202-508-3860	cso@coastalstates.org	Organization	Environmental	Region	All Lake Erie
Council of Great Lake Industries	http://www.cgli.org/	Representative for Lake Erie		3600 Green Ct., Suite 710	Ann Arbor, MI 48105	734-663-1944	StraderCo@aol.com	Organization	Development	Region	All Lake Erie
Council of Great Lakes Governors	http://www.cglg.org/contact/index.asp	Zoë Munro	Program Manager	20 North Wacker Drive, Suite 2700	Chicago, IL 60606	312-407-0177	zmunro@cglg.org	Organization	Government	Region	All Lake Erie
Council of Great Lakes Governors	http://www.cglg.org/contact/index.asp	David Naftzger	Executive Director	20 North Wacker Drive, Suite 2700	Chicago, IL 60606	312-407-0177	dnaftzger@cglg.org	Organization	Government	Region	All Lake Erie
Great Lakes Commission	http://www.glc.org	Tim A. Eder	Executive Director	2805 S. Industrial Hwy, Suite 100	Ann Arbor, MI 48104-6791	734-971-9135	teder@glc.org	Organization	Development	Region	All Lake Erie
Great Lakes United	http://www.glc.org	Brent Gibson	Director of Communications	4380 Main Street	Amherst, NY 14226	716-886-0142	bgibson@glu.org	Organization		Region	All Lake Erie
Ohio Lakefront Group	http://www.ohiolakefrontgroup.com/about/ohio-lakefront-group-board-of-directors/	Greg Baepler	Chairman	P.O. Box 2084	Sheffield Lake, OH 44054	440-925-0148	gbaepler@att.net	Organization	Community	Ohio	Ohio
City of Bay Village	http://www.cityofbayvillage.com/	Deborah L. Sutherland	Mayor	350 Dover Center Road	Bay Village, OH 44140	440-899-3415	dsutherland@cityofbayvillage.com	Community	Government	Cuyahoga	Bay Village, City of
City of Bay Village	http://www.cityofbayvillage.com/	Daniel Galli	Building Director	350 Dover Center Road	Bay Village, OH 44140	440-899-3400	DGalli@cityofbayvillage.com	Community	Building	Cuyahoga	Bay Village, City of
City of Bay Village	http://www.cityofbayvillage.com/	David Volle	Building Inspector	350 Dover Center Road	Bay Village, OH 44140	440-899-3402	DVolle@cityofbayvillage.com	Community	Building	Cuyahoga	Bay Village, City of
City of Bay Village	http://www.cityofbayvillage.com/city-government/city-council/city-council-members.aspx	Paul Koomar	City Council President	350 Dover Center Road	Bay Village, OH 44140	440871-6089	paulkoomar@gmail.com	Community	Government	Cuyahoga	Bay Village, City of
City of Bay Village - Local Emergency Planning Committee	http://lepc.cuyahogacounty.us/emergency.asp	David Wright	Chief - Bay Village PD	27214 Wolf Rd.	Bay Village, OH 44140	440-899-3461	dwright@cityofbayvillage.com	Community	Emergency Planning	Cuyahoga	Bay Village, City of

Organization Name	Organization Website	Point of Contact	Title	Address	City, ST Zip	Phone	Email	Group	Category	County/State/Watershed	Community
City of Bratenahl - Local Emergency Planning Committee	http://lepc.cuyahogacounty.us/emergency.asp	Paul Falzone	Chief - Bratenahl PD	411 Bratenahl Road	Bratenahl, OH 44108	216-681-1234	pfalzone@bratenahl.org	Community	Emergency Planning	Cuyahoga	Bratenahl, Village of
Village of Bratenahl	http://www.bratenahl.org/	John M. Licastro	Mayor	411 Bratenahl Road	Bratenahl, OH 44108	216-681-4266	Jlicastro@Bratenahl.Org	Community	Government	Cuyahoga	Bratenahl, Village of
Village of Bratenahl	http://www.bratenahl.org/	Donald P. Bierut, P.E..	Village Engineer	22999 Forbes Rd., Suite B	Cleveland, OH 44146-5667	440-439-1999	Bierut@Cvelimited.Com	Community	Engineering	Cuyahoga	Bratenahl, Village of
Village of Bratenahl	http://www.bratenahl.org/	David B. Hartt	Village Planner	1382 West 9th Street	Cleveland, Oh 44113	216-696-0400	n/a	Community	Planning	Cuyahoga	Bratenahl, Village of
Village of Bratenahl	http://www.bratenahl.org/	Mary Beckenbach	Village Council President	411 Bratenahl Road	Bratenahl, OH 44108	216-761-1108	marybeck@roadrunner.com	Community	Government	Cuyahoga	Bratenahl, Village of
Village of Bratenahl	http://www.bratenahl.org/	Tom Jamieson	Building Commissioner	411 Bratenahl Road	Bratenahl, OH 44108	216-681-3706	Building@Bratenahl.Org	Community	Building	Cuyahoga	Bratenahl, Village of
City of Cleveland - City Planning Commission	http://www.city.cleveland.oh.us/CityofCleveland/Home/Government/CityAgencies/CityPlanningCommission	Robert N. Brown	Director	601 Lakeside Ave., Rm 501	Cleveland, OH 44114	216-664-2210	http://www.city.cleveland.oh.us/CityofCleveland/Home/contact/department?code=90	Community	Planning	Cuyahoga	Cleveland, City of
City of Cleveland - Department of Building and Housing	http://www.city.cleveland.oh.us/CityofCleveland/Home/Government/CityAgencies/BuildingHousing	Edward W. Rybka	Director	601 Lakeside Ave. Room 510	Cleveland, OH 44114	216-664-2282	http://www.city.cleveland.oh.us/CityofCleveland/Home/contact/department?code=90	Community	Building	Cuyahoga	Cleveland, City of
City of Cleveland - Local Emergency Planning Committee	http://lepc.cuyahogacounty.us/emergency.asp	Norberto Colon	Assistant Director	205 W. St. Clair Ave., 5th Floor	Cleveland, OH 44113	216-664-4131	ncolon@city.cleveland.oh.us	Community	Emergency Planning	Cuyahoga	Cleveland, City of
City of Cleveland - Mayor's Office	http://www.city.cleveland.oh.us/CityofCleveland/Home/Government/MayorsOffice	Frank G. Jackson	Mayor	601 Lakeside Ave.	Cleveland, OH 44114	216-664-3990	mayorsactioncenter@city.cleveland.oh.us	Community	Government	Cuyahoga	Cleveland, City of
City of Cleveland - Public Works	http://www.city.cleveland.oh.us/CityofCleveland/Home/Government/CityAgencies/ParksRecreationandProperties	Michael E. Cox	Director	500 Lakeside Ave.	Cleveland, OH 44114	216-664-2485	http://www.city.cleveland.oh.us/CityofCleveland/Home/contact/department?code=90	Community	Public Works	Cuyahoga	Cleveland, City of

Organization Name	Organization Website	Point of Contact	Title	Address	City, ST Zip	Phone	Email	Group	Category	County/State/Watershed	Community
Cuyahoga County Department of Public Works	http://publicworks.cuyahogacounty.us/	Bonita G. Teeuwen, P.E.	Director of Public Works	2100 Superior Viaduct	Cleveland, OH 44113	216-348-3800	bteeuwen@cuyahogacounty.us	County	Public Works	Cuyahoga	Cuyahoga County
Cuyahoga County Department of Public Works	http://publicworks.cuyahogacounty.us/en-US/contact.aspx	Douglas L. Dillon, P.E., P.S.	County Engineer	2100 Superior Viaduct	Cleveland, OH 44113	216-348-3800	ddillon@cuyahogacounty.us	County	Engineering	Cuyahoga	Cuyahoga County
Cuyahoga County Emergency Management	http://ja.cuyahogacounty.us/en-US/em.aspx	Brandy Carney	Manager	310 West Lakeside Ave., Suite 795-B	Cleveland, OH 44113	216-443-5691	bcarney@cuyahogacounty.us	County	Emergency Management	Cuyahoga	Cuyahoga County
Cuyahoga County Planning Commission	http://planning.co.cuyahoga.oh.us/data/	Paul A. Alsenas	Director	323 Lakeside Avenue West, Suite 400	Cleveland, OH 44113	216-443-3700	cpc@planning.co.cuyahoga.oh.us	County	Planning	Cuyahoga	Cuyahoga County
Cuyahoga River Community Planning Organization	http://www.crcpo.org/	Jane Goodman	Executive Director	1299 Superior Ave	Cleveland, OH 44114	216-241-2414 x610	goodmanj@cuyahogariverrap.org	Organization	Planning	Cuyahoga River	Cuyahoga County
Cuyahoga Soil and Water Conservation District	http://www.cuyahogawcd.org/	Janine Rybka	District Administrator	6100 West Canal Road	Valley View, OH 44125	216-524-6580	n/a	County	Soil & Water Conservation District	Cuyahoga	Cuyahoga County
Friends of Euclid Creek	http://friendsofeuclidcreek.nhlink.net/index.htm	Frank Skala		PO Box 21384-0387	South Euclid, OH 44121	n/a	friendsofeuclidcreek@gmail.com	Organization	Watershed	Cuyahaoga	Cuyahoga County
City of East Cleveland - Local Emergency Planning Committee	http://lepc.cuyahogacounty.us/emergency.asp	Samuel Lockhart	Deputy Director	14340 Euclid Ave.	East Cleveland, OH 44112	216-681-2191	slockhart@eastcleveland.org	Community	Emergency Planning	Cuyahoga	East Cleveland, City of
City of East Cleveland City Council	http://eastcleveland.info/inamix/content/city-council	Dr. Joy Jordan, DDS	President	14340 Euclid Ave	East Cleveland, OH 44112	216-681-2310	n/a	Community	Government	Cuyahoga	East Cleveland, City of
City of East Cleveland Department of Building & Housing Department	http://eastcleveland.info/inamix/content/building-housing	Thomas J. Wheeler	Executive Assistant	14340 Euclid Avenue, Dept. of Building & Housing Room #222	East Cleveland, OH 44112	216-681-2415	n/a	Community	Building	Cuyahoga	East Cleveland, City of
City of East Cleveland Mayor's Cabinet	http://eastcleveland.info/inamix/content/mayors-cabinet	Collette Clinkscale	Chief of Staff	14340 Euclid Ave	East Cleveland, OH 44112	216-451-5553	cclinkscale@eastcleveland.org	Community	Government	Cuyahoga	East Cleveland, City of

Organization Name	Organization Website	Point of Contact	Title	Address	City, ST Zip	Phone	Email	Group	Category	County/State/Watershed	Community
City of East Cleveland Mayor's Cabinet	http://eastcleveland.info/inamix/content/mayors-cabinet	Ross Brankatelli	Service Director & City Engineer	14340 Euclid Ave	East Cleveland, OH 44112	216-681-2421	vmoore@eastcleveland.org	Community	Engineering	Cuyahoga	East Cleveland, City of
City of East Cleveland Mayor's Office	http://eastcleveland.info/inamix/content/office-mayor	Gary Norton, Jr.	Mayor	14340 Euclid Ave	East Cleveland, OH 44112	216-681-2208	n/a	Community	Government	Cuyahoga	East Cleveland, City of
Ohio Coastal Resources Advisory Council	http://www.ohiodnr.com/LakeErie/CRA/C/tabid/9307/Default.aspx	Carrie E. Sowden	Archaeological Director at the Peachman Lake Erie Shipwreck Research Center (PLESRC)	480 Main Street, PO Box 435	Vermilion, OH 44089	440.967.3467 x 6	shipwreck@inlandseas.org	Organization	Advisory	Erie, OH and Cuyahoga	Erie, OH and Cuyahoga
Euclid Creek Watershed Program	http://www.cuyahogawcd.org/EuclidCreekFiles/EuclidCreekthehomepage.htm	Claire Posius	Coordinator	6100 West Canal Road	Valley View, OH 44125	216-524-6580	cposius@cuyahogawcd.org	Watershed	Watershed	Cuyahoga/Euclid Creek	Euclid Creek Watershed Program
City of Euclid - Local Emergency Planning Committee	http://lepc.cuyahogacounty.us/emergency.asp	Tom Cosgriff	Chief - Euclid FD	775 East 222nd Street	Euclid, OH 44123	216-289-8401	tcosgriff@ci.euclid.oh.us	Community	Emergency Planning	Cuyahoga	Euclid, City of
City of Euclid Building Department	http://www.cityofeuclid.com/community/building	Vicki Makcen	Director	585 East 222nd St.	Euclid, OH 44123	216-289-8100	vmakcen@cityofeuclid.com	Community	Building	Cuyahoga	Euclid, City of
City of Euclid City Council	http://www.cityofeuclid.com/community/CityCouncil	Kirsten Holzheimer Gail	Council President	55 East 202 St.	Euclid, OH 44123	216-289-8123	kholzheimergail@cityofeuclid.com	Community	Government	Cuyahoga	Euclid, City of
City of Euclid Mayor's Office	http://www.cityofeuclid.com/community/MayorsOffice	Bill Cervenik	Mayor	585 East 222nd St.	Euclid, OH 44123	216-289-2751	mayor@cityofeuclid.com	Community	Government	Cuyahoga	Euclid, City of
City of Euclid Planning and Zoning Commission	http://www.cityofeuclid.com/community/PlanningandZoning/PlanningandZoningCommission	John Monroe	Chairperson	585 East 222nd St.	Euclid, OH 44123	216-289-2700	n/a	Community	Planning & Zoning	Cuyahoga	Euclid, City of
City of Euclid Planning and Zoning Commission	http://www.cityofeuclid.com/community/PlanningandZoning/PlanningandZoningCommission	Paul Beno	Zoning Official	585 East 222nd St.	Euclid, OH 44123	216-289-2700	n/a	Community	Zoning	Cuyahoga	Euclid, City of
City of Fairview Park - Environment, Public Works, Planning, Zoning & Development Committee	http://www.fairviewpark.org/government/city-council.php	William Minek	Chair	20777 Lorain Road	Fairview Park, OH 44126	440-331-2017	councilward2@fairviewpark.org	Community	Planning & Zoning	Cuyahoga	Fairview Park, City of

Organization Name	Organization Website	Point of Contact	Title	Address	City, ST Zip	Phone	Email	Group	Category	County/State/Watershed	Community
City of Fairview Park Building Department	http://www.fairviewpark.org/departments/building.php	Sel Kulcsar	Building Commissioner	20777 Lorain Road	Fairview Park, OH 44126	440-356-4403	bldgcom@fairviewpark.org	Community	Building	Cuyahoga	Fairview Park, City of
City of Fairview Park City Council	http://www.fairviewpark.org/government/city-council.php	Michael Kilbane	President	20777 Lorain Road	Fairview Park, OH 44126	440-356-4414	councilpresident@fairviewpark.org	Community	Government	Cuyahoga	Fairview Park, City of
City of Fairview Park Mayor's Office	http://www.fairviewpark.org/index/	Eileen Ann Patton	Mayor	20777 Lorain Road	Fairview Park, OH 44126	440-356-4411	adminassistant@fairviewpark.org	Community	Government	Cuyahoga	Fairview Park, City of
City of Lakewood - Local Emergency Planning Committee	http://lepc.cuyahogacounty.us/emergency.asp	Lawrence E. Mroz	Chief – Lakewood FD	14601 Madison Ave, Sta #1	Lakewood, OH 44107	216-529-6658	lawrence.mroz@lakewoodoh.net	Community	Emergency Planning	Cuyahoga	Lakewood, City of
City of Lakewood Department of Planning and Development	http://www.onelakewood.com/Development/	Dru Siley	Director	12650 Detroit Avenue	Lakewood, OH 44107	216-529-6630	planning@lakewoodoh.net	Community	Planning	Cuyahoga	Lakewood, City of
City of Lakewood Department of Public Works	http://www.onelakewood.com/PublicWorks/Default.aspx	Joseph J. Beno P.E.	Director	12650 Detroit Avenue	Lakewood, OH 44107	216-529-6804	pubworks@lakewoodoh.net	Community	Public Works	Cuyahoga	Lakewood, City of
City of Lakewood Mayor's Office	http://onelakewood.com/Mayor/	Michael P. Summers	Mayor	12650 Detroit Avenue	Lakewood, OH 44107	216-529-6600	mayor@lakewoodoh.net	Community	Government	Cuyahoga	Lakewood, City of
Rocky River Watershed Council	http://myrockyriver.ning.com/	Jared Bartley	Coordinator	6100 West Canal Road	Valley View, OH 44125	216-524-6580	jbartley@cuyahogawcd.org	Watershed	Watershed	Cuyahoga/Rocky River	Rocky River Watershed Council
City of Rocky River – Board of Zoning and Building Appeals	http://www.rrcity.com/government.html	Eric Pempus	Chairman	21012 Hilliard Boulevard	Rocky River, OH 44116	n/a	n/a	Community	Zoning	Cuyahoga	Rocky River, City of
City of Rocky River – Planning Commission	http://www.rrcity.com/government.html	Michael Harvey	Chairman	21012 Hilliard Boulevard	Rocky River, OH 44116	n/a	n/a	Community	Planning	Cuyahoga	Rocky River, City of
City of Rocky River City Council	http://www.rrcity.com/councilwebpage.html	James W. Moran	President	21012 Hilliard Boulevard	Rocky River, OH 44116	356-6233; 216 or 440 area code	jwmoran111@aol.com	Community	Government	Cuyahoga	Rocky River, City of

Organization Name	Organization Website	Point of Contact	Title	Address	City, ST Zip	Phone	Email	Group	Category	County/State/Watershed	Community
City of Rocky River – Design and Construction Board of Review	http://www.rrcity.com/government.html	John Milloy	Chairman	21012 Hilliard Boulevard	Rocky River, OH 44116	n/a	n/a	Community	Construction	Cuyahoga	Rocky River, City of
City of Rocky River-Local Emergency Planning Committee	http://lepc.cuyahogacounty.us/emergency.asp	Christopher Flynn	Chief – Rocky River FD	21012 Hilliard Blvd	Rocky River, OH 44116	440-356-5642	firechief@rrcity.com	Community	Emergency Planning	Cuyahoga	Rocky River, City of
City of Rocky River Mayor’s Office	http://www.rrcity.com/	Pamela E. Bobst	Mayor	21012 Hilliard Boulevard	Rocky River, OH 44116	440-331-0600	rockyriver@rrcity.com	Community	Government	Cuyahoga	Rocky River, City of
City of Westlake - Local Emergency Planning Committee	http://lepc.cuyahogacounty.us/emergency.asp	Donald Glauner		Westlake City Hall, 27700 Hilliard Blvd	Westlake, OH 44145	440-871-3300	dglaurer@cityofwestlake.org	Community	Emergency Planning	Cuyahoga	Westlake, City of
City of Westlake Building Department	http://www.cityofwestlake.org/departments/building.aspx#staff	Donald P. Grayem	Director of Inspections, Chief Building Official	27700 Hilliard Boulevard	Westlake, OH 44145	440-617-4115	dgrayem@cityofwestlake.org	Community	Building	Cuyahoga	Westlake, City of
City of Westlake Building Department	http://www.cityofwestlake.org/departments/building.aspx#staff	Thomas Blue	Property Maintenance & Zoning Code Officer	27700 Hilliard Boulevard	Westlake, OH 44145	440-617-4108	tblue@cityofwestlake.org	Community	Zoning	Cuyahoga	Westlake, City of
City of Westlake Engineering Department	http://www.cityofwestlake.org/departments/engineering.aspx	Robert P. Kelly, P.E.	Director	27700 Hilliard Boulevard	Westlake, OH 44145	440-617-4145	engdept@cityofwestlake.org	Community	Engineering	Cuyahoga	Westlake, City of
City of Westlake Mayor’s Office	http://www.cityofwestlake.org/citygovernment/mayorsoffice.aspx	Dennis M. Clough	Mayor	27700 Hilliard Boulevard	Westlake, OH 44145	440-871-3300	n/a	Community	Government	Cuyahoga	Westlake, City of
City of Westlake Planning and Economic Development Department	http://www.cityofwestlake.org/departments/planning.aspx	Robert M. Parry, AICP	Director	27700 Hilliard Boulevard	Westlake, OH 44145	440-617-4307	bparry@cityofwestlake.org	Community	Planning	Cuyahoga	Westlake, City of
Westlake City Council	http://www.cityofwestlake.org/citygovernment/counciloffice.aspx	Michael F. Killeen	President	27700 Hilliard Boulevard	Westlake, OH 44145	440-617-4050	mkillen@cityofwestlake.org	Community	Government	Cuyahoga	Westlake, City of

Attachment A-2
Discovery Meeting Invitations



FEMA

July 12, 2012

Ms. Deborah L. Sutherland
Mayor, City of Bay Village
350 Dover Center Road
Bay Village, OH 44140

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Sutherland:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

The goal of Risk MAP is to support actions that make communities safer from flooding. The Risk MAP program wants to achieve continued improvement of flood hazard information for the National Flood Insurance Program (NFIP); to promote increased awareness and understanding of flood risk; to increase community engagement; and to identify and support of actions that local stakeholders can take to reduce natural hazard risks. For additional information on the Risk MAP Program, please visit http://www.fema.gov/plan/prevent/fhm/rm_main.shtm.

The first phase of the Risk MAP process is Discovery. Through Discovery, input provided by communities will help FEMA to better understand local coastal flood risk data and needs, and characterize local conditions that contribute to coastal flood risk.

Your Discovery Meeting is scheduled to occur:

Date: Thursday, August 2, 2012
Time: 9:30 am – 11:30 am
Location: Bay Village Branch of the Cuyahoga County Public Library
Address: 502 Cahoon Road, Bay Village, OH 44140

Please save this date on your calendar. At the meeting, we will review the coastal flood risk data we have gathered to date and discuss your community's coastal floodplains, mitigation plan and projects, coastal flood risk concerns, and coastal floodplain management activities. This discussion will allow us to better identify your community's coastal flood hazard needs and subsequent Risk MAP regulatory and non-regulatory products and datasets that can be delivered during the Risk MAP project. We will also discuss how the coastal flood risks and needs are related to mapping, risk assessment, Hazard Mitigation planning, and grant programs available to eligible communities. To best facilitate this discussion, we would like to request your help in inviting community leaders, emergency managers, GIS specialists, engineers, outreach specialists, and local planners to the meeting. Please RSVP to FEMA's study

Ms. Deborah Sutherland
July 12, 2012
Page 2

contractor (RAMPP) Amelia Vincent at (301) 820-3186 or email to LakeErieCoastalFloodStudy@rampp-team.com no later than July 27, 2012.

So that we can better prepare for the upcoming Discovery Meeting, we are asking local communities to participate in an Information Exchange conference call and WebEx. This call will provide an overview of FEMA's Risk MAP program and the Discovery process, and will allow us to review with you our request for the exchange of coastal flood risk and hazard mitigation data, and to learn more about your community's coastal flood hazard risks and needs, in advance of the Discovery Meeting. The partnership and exchange of data between FEMA, the State of Ohio, and your community is vital to the success of identifying flood risks and needs that may impact your citizens.

The Information Exchange conference call is scheduled to occur:

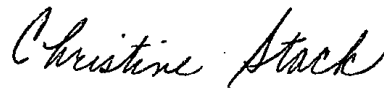
Date:	Wednesday, July 25, 2012
Time:	10:30 am – 11:30 am
Link to WebEx:	https://connect15.uc.att.com/urs/meet/?ExEventID=87175315
Call in number:	1-888-369-1427
Access Code:	7175315

If you or another community representative is unable to attend the Information Exchange conference call, we ask that you fill out and return the enclosed data request form by July 27, 2012. This is the same data request form that will be discussed during the conference call. The completed form can be sent to:

Via e-mail:	LakeErieCoastalFloodStudy@rampp-team.com
Or by mail:	Amelia Vincent, c/o RAMPP 12420 Milestone Center Drive, Suite 150 Germantown, MD 20876

We look forward to working with you to reduce the risks associated with coastal flooding and increase your community's resiliency for the long term. To learn more about Discovery, please visit <http://www.fema.gov/library> and search keywords "Discovery brochure" or contact Mike Hanke at (312) 408-5364 or michael.hanke@fema.dhs.gov. We look forward to discussing this with you during the Information Exchange call and/or seeing you at the upcoming Discovery Meeting.

Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Daniel Galli
Building Director, City of Bay Village
350 Dover Center Road
Bay Village, OH 44140

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

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July 12, 2012
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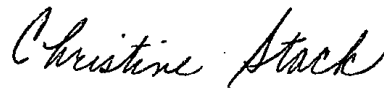
Date:	Wednesday, July 25, 2012
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Call in number:	1-888-369-1427
Access Code:	7175315

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Or by mail:	Amelia Vincent, c/o RAMPP 12420 Milestone Center Drive, Suite 150 Germantown, MD 20876

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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. David Volle
Building Inspector, City of Bay Village
350 Dover Center Road
Bay Village, OH 44140

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

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The first phase of the Risk MAP process is Discovery. Through Discovery, input provided by communities will help FEMA to better understand local coastal flood risk data and needs, and characterize local conditions that contribute to coastal flood risk.

Your Discovery Meeting is scheduled to occur:

Date:	Thursday, August 2, 2012
Time:	9:30 am – 11:30 am
Location:	Bay Village Branch of the Cuyahoga County Public Library
Address:	502 Cahoon Road, Bay Village, OH 44140

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Mr. David Volle
July 12, 2012
Page 2

contractor (RAMPP) Amelia Vincent at (301) 820-3186 or email to LakeErieCoastalFloodStudy@rampp-team.com no later than July 27, 2012.

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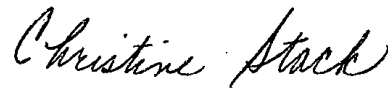
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Call in number:	1-888-369-1427
Access Code:	7175315

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Via e-mail:	LakeErieCoastalFloodStudy@rampp-team.com
Or by mail:	Amelia Vincent, c/o RAMPP 12420 Milestone Center Drive, Suite 150 Germantown, MD 20876

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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Paul Koomar
City Council President, City of Bay Village
350 Dover Center Road
Bay Village, OH 44140

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Koomar:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

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Mr. Paul Koomar
July 12, 2012
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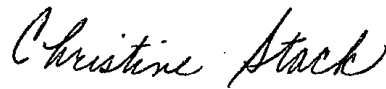
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. David Wright
Chief - Bay Village PD, City of Bay Village - Local Emergency Planning Committee
27214 Wolf Rd.
Bay Village, OH 44140

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Wright:

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Mr. David Wright
July 12, 2012
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Paul Falzone

Chief - Bratenahl PD, City of Bratenahl - Local Emergency Planning Committee
411 Bratenahl Road
Bratenahl, OH 44108

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Falzone:

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Mr. Paul Falzone
July 12, 2012
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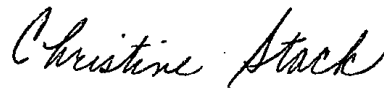
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Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. John M. Licastro
Mayor, Village of Bratenahl
411 Bratenahl Road
Bratenahl, OH 44108

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Licastro:

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Mr. John Licastro
July 12, 2012
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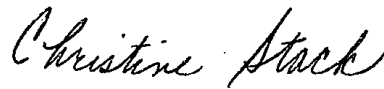
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Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Donald P. Bierut, P.E.
Village Engineer, Village of Bratenahl
22999 Forbes Rd., Suite B
Cleveland, OH 44146-5667

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Bierut:

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Mr. Donald Bierut
July 12, 2012
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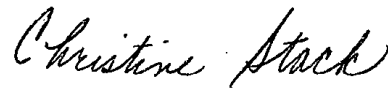
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Christine Stack
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Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. David B. Hartt
Village Planner, Village of Bratenahl
1382 West 9th Street
Cleveland, Oh 44113

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Hartt:

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Mr. David Hartt
July 12, 2012
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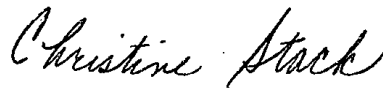
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Via e-mail:	LakeErieCoastalFloodStudy@rampp-team.com
Or by mail:	Amelia Vincent, c/o RAMPP 12420 Milestone Center Drive, Suite 150 Germantown, MD 20876

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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Ms. Mary Beckenbach
Village Council President, Village of Bratenahl
411 Bratenahl Road
Bratenahl, OH 44108

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Beckenbach:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

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The first phase of the Risk MAP process is Discovery. Through Discovery, input provided by communities will help FEMA to better understand local coastal flood risk data and needs, and characterize local conditions that contribute to coastal flood risk.

Your Discovery Meeting is scheduled to occur:

Date:	Thursday, August 2, 2012
Time:	9:30 am – 11:30 am
Location:	Bay Village Branch of the Cuyahoga County Public Library
Address:	502 Cahoon Road, Bay Village, OH 44140

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Ms. Mary Beckenbach
July 12, 2012
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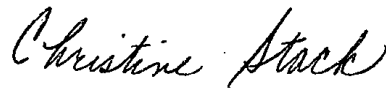
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

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FEMA

July 12, 2012

Mr. Tom Jamieson
Building Commissioner, Village of Bratenahl
411 Bratenahl Road
Bratenahl, OH 44108

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Jamieson:

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Mr. Tom Jamieson
July 12, 2012
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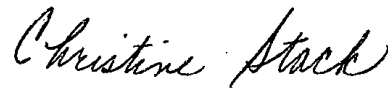
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

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Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Robert N. Brown
Director, City of Cleveland - City Planning Commission
601 Lakeside Ave., Rm 501
Cleveland, OH 44114

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Brown:

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Mr. Robert Brown
July 12, 2012
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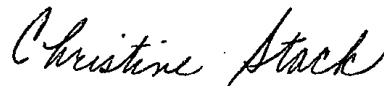
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Mitigation Division, FEMA Region V

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FEMA

July 12, 2012

Mr. Edward W. Rybka
Director, City of Cleveland - Department of Building and Housing
601 Lakeside Ave. Room 510
Cleveland, OH 44114

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Rybka:

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Mr. Edward Rybka
July 12, 2012
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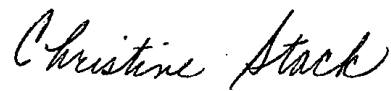
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Mitigation Division, FEMA Region V

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FEMA

July 12, 2012

Mr. Norberto Colon
Assistant Director, City of Cleveland - Local Emergency Planning Committee
205 W. St. Clair Ave., 5th Floor
Cleveland, OH 44113

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Colon:

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Mr. Norberto Colon
July 12, 2012
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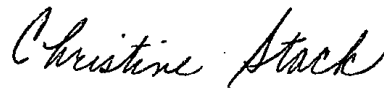
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FEMA

July 12, 2012

Mr. Frank G. Jackson
Mayor, City of Cleveland – Mayor’s Office
601 Lakeside Ave.
Cleveland, OH 44114

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Jackson:

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Mr. Frank Jackson
July 12, 2012
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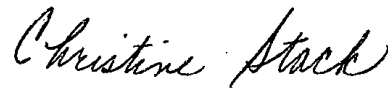
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We look forward to working with you to reduce the risks associated with coastal flooding and increase your community's resiliency for the long term. To learn more about Discovery, please visit <http://www.fema.gov/library> and search keywords "Discovery brochure" or contact Mike Hanke at (312) 408-5364 or michael.hanke@fema.dhs.gov. We look forward to discussing this with you during the Information Exchange call and/or seeing you at the upcoming Discovery Meeting.

Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Michael E. Cox
Director, City of Cleveland - Public Works
500 Lakeside Ave.
Cleveland, OH 44114

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Cox:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

The goal of Risk MAP is to support actions that make communities safer from flooding. The Risk MAP program wants to achieve continued improvement of flood hazard information for the National Flood Insurance Program (NFIP); to promote increased awareness and understanding of flood risk; to increase community engagement; and to identify and support of actions that local stakeholders can take to reduce natural hazard risks. For additional information on the Risk MAP Program, please visit http://www.fema.gov/plan/prevent/fhm/rm_main.shtm.

The first phase of the Risk MAP process is Discovery. Through Discovery, input provided by communities will help FEMA to better understand local coastal flood risk data and needs, and characterize local conditions that contribute to coastal flood risk.

Your Discovery Meeting is scheduled to occur:

Date: Thursday, August 2, 2012
Time: 9:30 am – 11:30 am
Location: Bay Village Branch of the Cuyahoga County Public Library
Address: 502 Cahoon Road, Bay Village, OH 44140

Please save this date on your calendar. At the meeting, we will review the coastal flood risk data we have gathered to date and discuss your community's coastal floodplains, mitigation plan and projects, coastal flood risk concerns, and coastal floodplain management activities. This discussion will allow us to better identify your community's coastal flood hazard needs and subsequent Risk MAP regulatory and non-regulatory products and datasets that can be delivered during the Risk MAP project. We will also discuss how the coastal flood risks and needs are related to mapping, risk assessment, Hazard Mitigation planning, and grant programs available to eligible communities. To best facilitate this discussion, we would like to request your help in inviting community leaders, emergency managers, GIS specialists, engineers, outreach specialists, and local planners to the meeting. Please RSVP to FEMA's study

Mr. Michael Cox
July 12, 2012
Page 2

contractor (RAMPP) Amelia Vincent at (301) 820-3186 or email to LakeErieCoastalFloodStudy@rampp-team.com no later than July 27, 2012.

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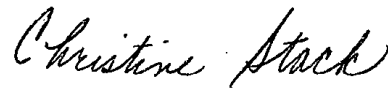
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

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FEMA

July 12, 2012

Ms. Bonita G. Teeuwen, P.E.
Director of Public Works, Cuyahoga County Department of Public Works
2100 Superior Viaduct
Cleveland, OH 44113

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Teeuwen:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

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Ms. Bonita Teeuwen
July 12, 2012
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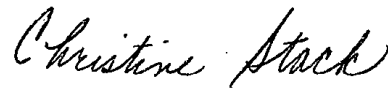
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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Douglas L. Dillon, P.E., P.S.
County Engineer, Cuyahoga County Department of Public Works
2100 Superior Viaduct
Cleveland, OH 44113

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Dillon:

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Mr. Douglas Dillon
July 12, 2012
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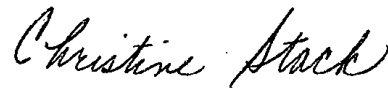
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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Ms. Brandy Carney
Manager, Cuyahoga County Emergency Management
310 West Lakeside Ave., Suite 795-B
Cleveland, OH 44113

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Carney:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

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Ms. Brandy Carney
July 12, 2012
Page 2

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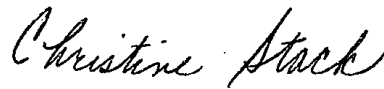
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

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Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Paul A. Alsenas
Director, Cuyahoga County Planning Commission
323 Lakeside Avenue West, Suite 400
Cleveland, OH 44113

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Alsenas:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

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Mr. Paul Alsenas
July 12, 2012
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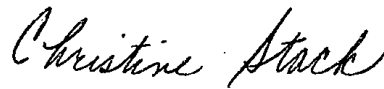
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Mitigation Division, FEMA Region V

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Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Ms. Jane Goodman
Executive Director, Cuyahoga River Community Planning Organization
1299 Superior Ave
Cleveland, OH 44114

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Goodman:

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Ms. Jane Goodman
July 12, 2012
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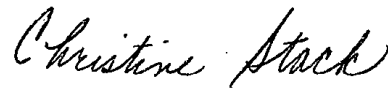
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Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Ms. Janine Rybka
District Administrator, Cuyahoga Soil and Water Conservation District
6100 West Canal Road
Valley View, OH 44125

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Rybka:

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The first phase of the Risk MAP process is Discovery. Through Discovery, input provided by communities will help FEMA to better understand local coastal flood risk data and needs, and characterize local conditions that contribute to coastal flood risk.

Your Discovery Meeting is scheduled to occur:

Date:	Thursday, August 2, 2012
Time:	9:30 am – 11:30 am
Location:	Bay Village Branch of the Cuyahoga County Public Library
Address:	502 Cahoon Road, Bay Village, OH 44140

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Ms. Janine Rybka
July 12, 2012
Page 2

contractor (RAMPP) Amelia Vincent at (301) 820-3186 or email to LakeErieCoastalFloodStudy@rampp-team.com no later than July 27, 2012.

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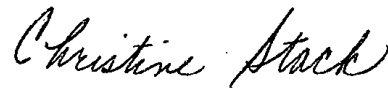
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Via e-mail:	LakeErieCoastalFloodStudy@rampp-team.com
Or by mail:	Amelia Vincent, c/o RAMPP 12420 Milestone Center Drive, Suite 150 Germantown, MD 20876

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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Frank Skala
Friends of Euclid Creek
PO Box 21384-0387
South Euclid, OH 44121

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Skala:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

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Mr. Frank Skala
July 12, 2012
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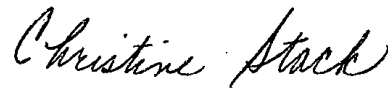
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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Samuel Lockhart
Deputy Director, City of East Cleveland - Local Emergency Planning Committee
14340 Euclid Ave.
East Cleveland, OH 44112

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Lockhart:

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Mr. Samuel Lockhart
July 12, 2012
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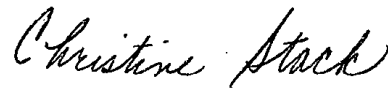
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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Dr. Joy Jordan, DDS
President, City of East Cleveland City Council
14340 Euclid Ave
East Cleveland, OH 44112

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Dr. Jordan:

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Dr. Joy Jordan
July 12, 2012
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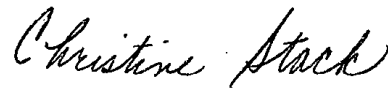
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Thomas J. Wheeler
Executive Assistant, City of East Cleveland Department of Building & Housing Department
14340 Euclid Avenue, Dept. of Building & Housing Room #222
East Cleveland, OH 44112

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Wheeler:

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Mr. Thomas Wheeler
July 12, 2012
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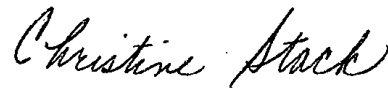
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Ms. Collette Clinkscale
Chief of Staff, City of East Cleveland Mayor's Cabinet
14340 Euclid Ave
East Cleveland, OH 44112

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Clinkscale:

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Ms. Collette Clinkscale
July 12, 2012
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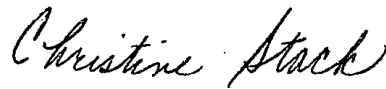
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Ross Brankatelli
Service Director & City Engineer, City of East Cleveland Mayor's Cabinet
14340 Euclid Ave
East Cleveland, OH 44112

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Brankatelli:

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Mr. Ross Brankatelli
July 12, 2012
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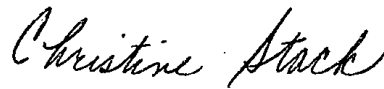
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Time:	10:30 am – 11:30 am
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Call in number:	1-888-369-1427
Access Code:	7175315

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Via e-mail:	LakeErieCoastalFloodStudy@rampp-team.com
Or by mail:	Amelia Vincent, c/o RAMPP 12420 Milestone Center Drive, Suite 150 Germantown, MD 20876

We look forward to working with you to reduce the risks associated with coastal flooding and increase your community's resiliency for the long term. To learn more about Discovery, please visit <http://www.fema.gov/library> and search keywords "Discovery brochure" or contact Mike Hanke at (312) 408-5364 or michael.hanke@fema.dhs.gov. We look forward to discussing this with you during the Information Exchange call and/or seeing you at the upcoming Discovery Meeting.

Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Gary Norton, Jr.
Mayor, City of East Cleveland Mayor's Office
14340 Euclid Ave
East Cleveland, OH 44112

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Norton:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

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The first phase of the Risk MAP process is Discovery. Through Discovery, input provided by communities will help FEMA to better understand local coastal flood risk data and needs, and characterize local conditions that contribute to coastal flood risk.

Your Discovery Meeting is scheduled to occur:

Date:	Thursday, August 2, 2012
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Mr. Gary Norton
July 12, 2012
Page 2

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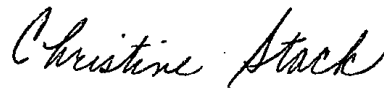
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

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FEMA

July 12, 2012

Ms. Carrie E. Sowden
Archaeological Director at the Peachman Lake Erie Shipwreck Research Center (PLESRC), Ohio Coastal Resources Advisory Council
480 Main Street, PO Box 435
Vermilion, OH 44089

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Sowden:

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Ms. Carrie Sowden
July 12, 2012
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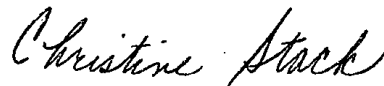
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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

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Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Ms. Claire Posius
Coordinator, Euclid Creek Watershed Program
6100 West Canal Road
Valley View, OH 44125

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Posius:

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Ms. Claire Posius
July 12, 2012
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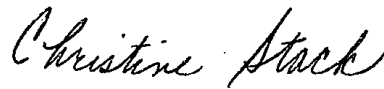
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FEMA

July 12, 2012

Mr. Tom Cosgriff
Chief - Euclid FD, City of Euclid - Local Emergency Planning Committee
775 East 222nd Street
Euclid, OH 44123

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Cosgriff:

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Mr. Tom Cosgriff
July 12, 2012
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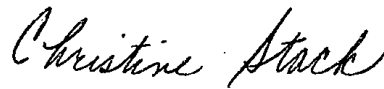
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Mitigation Division, FEMA Region V

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FEMA

July 12, 2012

Ms. Vicki Makcen
Director, City of Euclid Building Department
585 East 222nd St.
Euclid, OH 44123

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Makcen:

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Ms. Vicki Makcen
July 12, 2012
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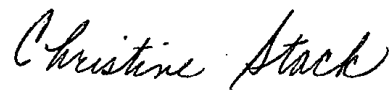
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Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Ms. Kirsten Holzheimer Gail
Council President, City of Euclid City Council
55 East 202 St.
Euclid, OH 44123

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Gail:

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Ms. Kirsten Gail
July 12, 2012
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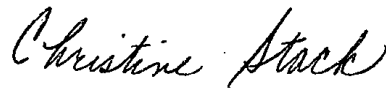
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We look forward to working with you to reduce the risks associated with coastal flooding and increase your community's resiliency for the long term. To learn more about Discovery, please visit <http://www.fema.gov/library> and search keywords "Discovery brochure" or contact Mike Hanke at (312) 408-5364 or michael.hanke@fema.dhs.gov. We look forward to discussing this with you during the Information Exchange call and/or seeing you at the upcoming Discovery Meeting.

Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Bill Cervenik
Mayor, City of Euclid Mayor's Office
585 East 222nd St.
Euclid, OH 44123

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Cervenik:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

The goal of Risk MAP is to support actions that make communities safer from flooding. The Risk MAP program wants to achieve continued improvement of flood hazard information for the National Flood Insurance Program (NFIP); to promote increased awareness and understanding of flood risk; to increase community engagement; and to identify and support of actions that local stakeholders can take to reduce natural hazard risks. For additional information on the Risk MAP Program, please visit http://www.fema.gov/plan/prevent/fhm/rm_main.shtm.

The first phase of the Risk MAP process is Discovery. Through Discovery, input provided by communities will help FEMA to better understand local coastal flood risk data and needs, and characterize local conditions that contribute to coastal flood risk.

Your Discovery Meeting is scheduled to occur:

Date: Thursday, August 2, 2012
Time: 9:30 am – 11:30 am
Location: Bay Village Branch of the Cuyahoga County Public Library
Address: 502 Cahoon Road, Bay Village, OH 44140

Please save this date on your calendar. At the meeting, we will review the coastal flood risk data we have gathered to date and discuss your community's coastal floodplains, mitigation plan and projects, coastal flood risk concerns, and coastal floodplain management activities. This discussion will allow us to better identify your community's coastal flood hazard needs and subsequent Risk MAP regulatory and non-regulatory products and datasets that can be delivered during the Risk MAP project. We will also discuss how the coastal flood risks and needs are related to mapping, risk assessment, Hazard Mitigation planning, and grant programs available to eligible communities. To best facilitate this discussion, we would like to request your help in inviting community leaders, emergency managers, GIS specialists, engineers, outreach specialists, and local planners to the meeting. Please RSVP to FEMA's study

Mr. Bill Cervenik
July 12, 2012
Page 2

contractor (RAMPP) Amelia Vincent at (301) 820-3186 or email to LakeErieCoastalFloodStudy@rampp-team.com no later than July 27, 2012.

So that we can better prepare for the upcoming Discovery Meeting, we are asking local communities to participate in an Information Exchange conference call and WebEx. This call will provide an overview of FEMA's Risk MAP program and the Discovery process, and will allow us to review with you our request for the exchange of coastal flood risk and hazard mitigation data, and to learn more about your community's coastal flood hazard risks and needs, in advance of the Discovery Meeting. The partnership and exchange of data between FEMA, the State of Ohio, and your community is vital to the success of identifying flood risks and needs that may impact your citizens.

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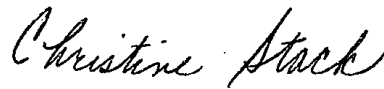
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

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FEMA

July 12, 2012

Mr. John Monroe
Chairperson, City of Euclid Planning and Zoning Commission
585 East 222nd St.
Euclid, OH 44123

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Monroe:

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Mr. John Monroe
July 12, 2012
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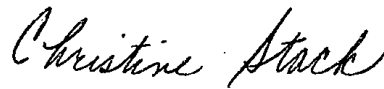
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

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FEMA

July 12, 2012

Mr. Paul Beno
Zoning Official, City of Euclid Planning and Zoning Commission
585 East 222nd St.
Euclid, OH 44123

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Beno:

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Mr. Paul Beno
July 12, 2012
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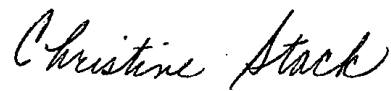
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

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FEMA

July 12, 2012

Mr. William Minek
Chair, City of Fairview Park - Environment, Public Works, Planning, Zoning & Development Committee
20777 Lorain Road
Fairview Park, OH 44126

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Minek:

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Mr. William Minek
July 12, 2012
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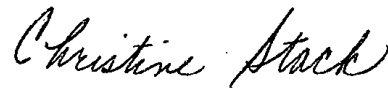
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Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
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FEMA

July 12, 2012

Mr. Sel Kulcsar
Building Commissioner, City of Fairview Park Building Department
20777 Lorain Road
Fairview Park, OH 44126

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Kulcsar:

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Mr. Sel Kulcsar
July 12, 2012
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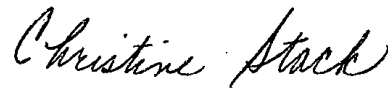
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FEMA

July 12, 2012

Mr. Michael Kilbane
President, City of Fairview Park City Council
20777 Lorain Road
Fairview Park, OH 44126

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

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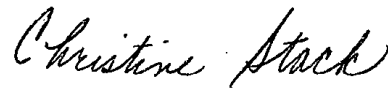
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FEMA

July 12, 2012

Ms. Eileen Ann Patton
Mayor, City of Fairview Park Mayor's Office
20777 Lorain Road
Fairview Park, OH 44126

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

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Ms. Eileen Patton
July 12, 2012
Page 2

contractor (RAMPP) Amelia Vincent at (301) 820-3186 or email to LakeErieCoastalFloodStudy@rampp-team.com no later than July 27, 2012.

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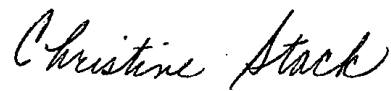
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Via e-mail:	LakeErieCoastalFloodStudy@rampp-team.com
Or by mail:	Amelia Vincent, c/o RAMPP 12420 Milestone Center Drive, Suite 150 Germantown, MD 20876

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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Lawrence E. Mroz
Chief – Lakewood FD, City of Lakewood - Local Emergency Planning Committee
14601 Madison Ave, Sta #1
Lakewood, OH 44107

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Mroz:

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Mr. Lawrence Mroz
July 12, 2012
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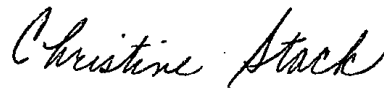
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
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FEMA

July 12, 2012

Mr. Dru Siley
Director, City of Lakewood Department of Planning and Development
12650 Detroit Avenue
Lakewood, OH 44107

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Siley:

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Mr. Dru Siley
July 12, 2012
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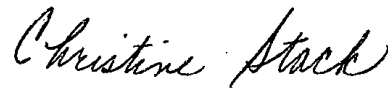
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Joseph J. Beno, P.E.
Director, City of Lakewood Department of Public Works
12650 Detroit Avenue
Lakewood, OH 44107

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Beno:

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Mr. Joseph Beno
July 12, 2012
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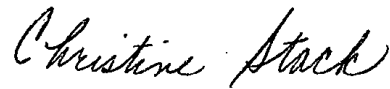
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Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Michael P. Summers
Mayor, City of Lakewood Mayor's Office
12650 Detroit Avenue
Lakewood, OH 44107

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Summers:

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Mr. Michael Summers
July 12, 2012
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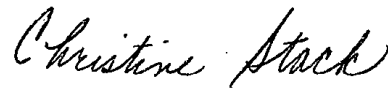
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FEMA

July 12, 2012

Mr. Jared Bartley
Coordinator, Rocky River Watershed Council
6100 West Canal Road
Valley View, OH 44125

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Bartley:

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Mr. Jared Bartley
July 12, 2012
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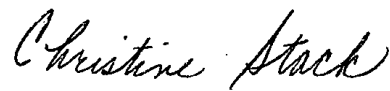
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Christine Stack
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Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
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FEMA

July 12, 2012

Mr. Eric Pempus
Chairman, City of Rocky River – Board of Zoning and Building Appeals
21012 Hilliard Boulevard
Rocky River, OH 44116

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Pempus:

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Mr. Eric Pempus
July 12, 2012
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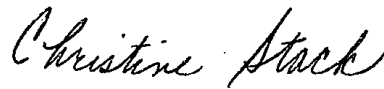
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Time:	10:30 am – 11:30 am
Link to WebEx:	https://connect15.uc.att.com/urs/meet/?ExEventID=87175315
Call in number:	1-888-369-1427
Access Code:	7175315

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Via e-mail:	LakeErieCoastalFloodStudy@rampp-team.com
Or by mail:	Amelia Vincent, c/o RAMPP 12420 Milestone Center Drive, Suite 150 Germantown, MD 20876

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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Michael Harvey
Chairman, City of Rocky River – Planning Commission
21012 Hilliard Boulevard
Rocky River, OH 44116

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Harvey:

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The first phase of the Risk MAP process is Discovery. Through Discovery, input provided by communities will help FEMA to better understand local coastal flood risk data and needs, and characterize local conditions that contribute to coastal flood risk.

Your Discovery Meeting is scheduled to occur:

Date: Thursday, August 2, 2012
Time: 9:30 am – 11:30 am
Location: Bay Village Branch of the Cuyahoga County Public Library
Address: 502 Cahoon Road, Bay Village, OH 44140

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Mr. Michael Harvey
July 12, 2012
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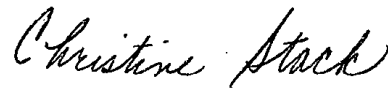
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

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FEMA

July 12, 2012

Mr. James W. Moran
President, City of Rocky River City Council
21012 Hilliard Boulevard
Rocky River, OH 44116

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Moran:

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Mr. James Moran
July 12, 2012
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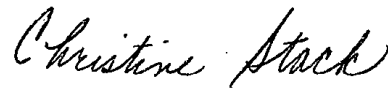
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Christine Stack
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FEMA

July 12, 2012

Mr. John Milloy
Chairman, City of Rocky River –Design and Construction Board of Review
21012 Hilliard Boulevard
Rocky River, OH 44116

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Milloy:

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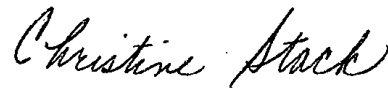
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FEMA

July 12, 2012

Mr. Christopher Flynn
Chief – Rocky River FD, City of Rocky River- Local Emergency Planning Committee
21012 Hilliard Blvd
Rocky River, OH 44116

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

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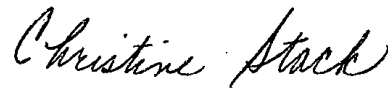
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FEMA

July 12, 2012

Ms. Pamela E. Bobst
Mayor, City of Rocky River Mayor's Office
21012 Hilliard Boulevard
Rocky River, OH 44116

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Ms. Bobst:

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Ms. Pamela Bobst
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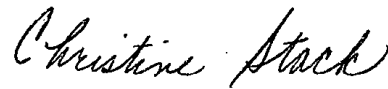
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FEMA

July 12, 2012

Mr. Donald Glauner
City of Westlake - Local Emergency Planning Committee
Westlake City Hall, 27700 Hilliard Blvd
Westlake, OH 44145

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Glauner:

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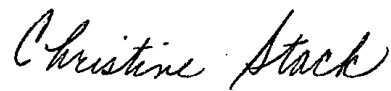
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We look forward to working with you to reduce the risks associated with coastal flooding and increase your community's resiliency for the long term. To learn more about Discovery, please visit <http://www.fema.gov/library> and search keywords "Discovery brochure" or contact Mike Hanke at (312) 408-5364 or michael.hanke@fema.dhs.gov. We look forward to discussing this with you during the Information Exchange call and/or seeing you at the upcoming Discovery Meeting.

Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Donald P. Grayem
Director of Inspections, Chief Building Official, City of Westlake Building Department
27700 Hilliard Boulevard
Westlake, OH 44145

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Grayem:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Erie and the rest of the United States Great Lakes through FEMA's Risk Mapping, Assessment, and Planning (MAP) Program. Data from this study will eventually be used to convey coastal flood hazard risk through revised Flood Insurance Rate Maps (FIRMs), also known as regulatory products, and new risk planning and assessment products and datasets, also referred to as non-regulatory products and datasets. Please see enclosed Risk MAP Flood Risk Products Fact Sheet. More information about the Great Lakes Coastal Flood Study may be found at <http://www.greatlakescoast.org>.

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The first phase of the Risk MAP process is Discovery. Through Discovery, input provided by communities will help FEMA to better understand local coastal flood risk data and needs, and characterize local conditions that contribute to coastal flood risk.

Your Discovery Meeting is scheduled to occur:

Date: Thursday, August 2, 2012
Time: 9:30 am – 11:30 am
Location: Bay Village Branch of the Cuyahoga County Public Library
Address: 502 Cahoon Road, Bay Village, OH 44140

Please save this date on your calendar. At the meeting, we will review the coastal flood risk data we have gathered to date and discuss your community's coastal floodplains, mitigation plan and projects, coastal flood risk concerns, and coastal floodplain management activities. This discussion will allow us to better identify your community's coastal flood hazard needs and subsequent Risk MAP regulatory and non-regulatory products and datasets that can be delivered during the Risk MAP project. We will also discuss how the coastal flood risks and needs are related to mapping, risk assessment, Hazard Mitigation planning, and grant programs available to eligible communities. To best facilitate this discussion, we would like to request your help in inviting community leaders, emergency managers, GIS specialists, engineers, outreach specialists, and local planners to the meeting. Please RSVP to FEMA's study

Mr. Donald Grayem
July 12, 2012
Page 2

contractor (RAMPP) Amelia Vincent at (301) 820-3186 or email to LakeErieCoastalFloodStudy@rampp-team.com no later than July 27, 2012.

So that we can better prepare for the upcoming Discovery Meeting, we are asking local communities to participate in an Information Exchange conference call and WebEx. This call will provide an overview of FEMA's Risk MAP program and the Discovery process, and will allow us to review with you our request for the exchange of coastal flood risk and hazard mitigation data, and to learn more about your community's coastal flood hazard risks and needs, in advance of the Discovery Meeting. The partnership and exchange of data between FEMA, the State of Ohio, and your community is vital to the success of identifying flood risks and needs that may impact your citizens.

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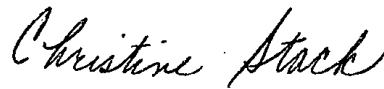
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

Enclosures: Risk MAP Flood Risk Products Fact Sheet
Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Thomas Blue
Property Maintenance & Zoning Code Officer, City of Westlake Building Department
27700 Hilliard Boulevard
Westlake, OH 44145

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Blue:

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Mr. Thomas Blue
July 12, 2012
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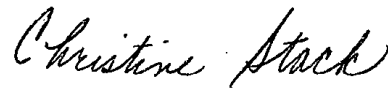
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Sincerely,



Christine Stack
Division Director
Mitigation Division, FEMA Region V

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Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Robert P. Kelly, P.E.
Director, City of Westlake Engineering Department
27700 Hilliard Boulevard
Westlake, OH 44145

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Kelly:

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Mr. Robert Kelly
July 12, 2012
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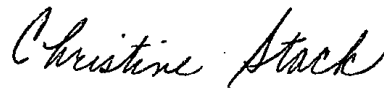
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Christine Stack
Division Director
Mitigation Division, FEMA Region V

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Community Discovery Coastal Data Request Form



FEMA

July 12, 2012

Mr. Dennis M. Clough
Mayor, City of Westlake Mayor's Office
27700 Hilliard Boulevard
Westlake, OH 44145

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Clough:

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Mr. Dennis Clough
July 12, 2012
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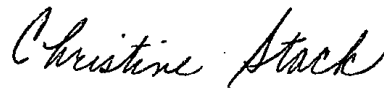
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Enclosures: Risk MAP Flood Risk Products Fact Sheet
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FEMA

July 12, 2012

Mr. Robert M. Parry, AICP
Director, City of Westlake Planning and Economic Development Department
27700 Hilliard Boulevard
Westlake, OH 44145

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

Dear Mr. Parry:

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Mr. Robert Parry
July 12, 2012
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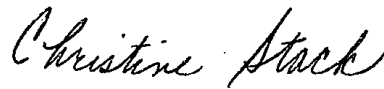
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FEMA

July 12, 2012

Mr. Michael F. Killeen
President, Westlake City Council
27700 Hilliard Boulevard
Westlake, OH 44145

Re: Invitation to Attend Community Meetings Regarding Lake Erie Coastal Flood Risk for Cuyahoga County in Ohio

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Mr. Michael Killeen
July 12, 2012
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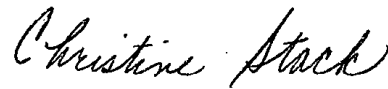
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Mitigation Division, FEMA Region V

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Attachment A-3
Information Exchange Session
Presentation



Information Exchange Session for Lake Erie Discovery

Cuyahoga County, Ohio
July 25, 2012
10:30 am – 11:30 am



Cleveland Browns Stadium

RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study
greatlakescoast.org



Purpose of Information Exchange

- Introduction to Risk MAP
- Introduction to Great Lakes Flood Study and Discovery
- Learn more about your areas of concern, coastal flood risk, and coastal mitigation
- Bring the right people to the table early
- Identify data gaps



RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study
greatlakescoast.org



Risk MAP (Mapping, Assessment, and Planning) Vision



Goals

1. Address gaps in flood hazard data
2. Increase risk awareness to encourage risk reduction
3. Risk-based Mitigation Planning resulting in risk reduction actions
4. Enhanced digital platform to improve communication and sharing of risk data
5. Align programs and develop synergies



RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study
greatlakescoast.org



Overview of Great Lakes Coastal Flood Study



- Latest models, data, and technology
- Deliver updated flood maps and flood risk datasets
- Equip Federal Agencies, eight States and hundreds of coastal communities with data and planning tools to facilitate actions to enhance resiliency of the Great Lakes ecosystem



RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study
greatlakescoast.org



Hazard Mitigation Resources, Strategies & Actions



- Recent community hazard mitigation experiences?
 - Public Works
 - Building Standards
 - Community Planning and Hazard Mitigation Plan Update
 - Communication Processes, GIS, etc.
- New option to document ideas and actions through the FEMA Mitigation Action Form

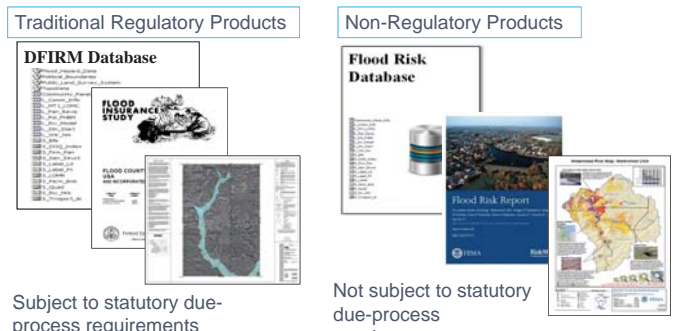
Land Use Ordinances Zoning, Setbacks, Floodplain Management, etc.	Local Building Codes IBC, IRC, Local Regulations, etc.	Mitigation Projects Acquisition, Elevation, Floodproofing, etc.	Community Identified Mitigation Programs	Management Best Practices Integration of natural hazards into other planning mechanisms
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Products and Datasets: Regulatory and Non-regulatory



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Products and Datasets: Coastal Products in Development



Erosion



Lake Erie Erosion
From ODNR website

Lake Levels



Lake Erie Shoreline
From Toledo Blade website

Shoreline Feature Dataset



Lake Erie Shoreline
From ODNR website

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Risk MAP Overview: Shoreline Features Database



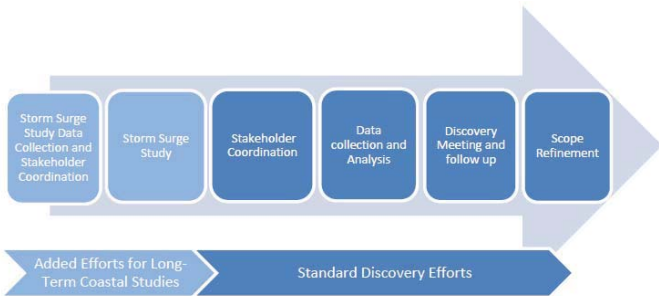
Shoreline Material	Primary Land Use	Primary Coast Type	Primary Vegetation
Sand	High Density Residential	High Dune, 10'+	None
Cohesive	Moderate Density Residential	Dune, 2' - 10'	High Density Shrubs/Trees
Cobble	Low Density Residential	High Bluff, 10'+	Moderate Density Shrubs/Trees
Diamicton*	Commercial/Industrial	Bluff, 2' - 10'	Low Density Shrubs/Trees
Shingle	Park Land	Coastal Wetland	Manicured Lawn
Bedrock	Farm Land	Flat Coast	Native Vegetation
Artificial	Forested		

- Contains primary and secondary Land Use tables – same for coast type and vegetation.
- Current project collects data at one-mile spacing, for scoping and cost
- Current project does not include field-based reconnaissance or sediment/subsurface soils collection

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Great Lakes Coastal Flood Study Discovery Process Overview



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Great Lakes Coastal Flood Study Discovery Meeting



Discovery Meeting Venue	Discovery Meeting Address	Discovery Meeting Date, Time
Bay Village Branch of the Cuyahoga County Public Library	502 Cahoon Road Bay Village, OH 44140	Thursday 08/02/2012; 9:30 - 11:30 AM EST

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Draft Discovery Meeting Agenda



- Why are we here?
- Coastal mapping and flood risk topics to be aware of
- How does this apply to my community?
 - NFIP compliance, hazard mitigation opportunities, and grant funding
- Interactive Session
 - Utilization of Coastal Flood Risk Products for Planning and Mitigation, Identification of Existing Local Coastal Data, View and Discuss Local Coastal Areas of Concern Using the Discovery Map, Discuss Mitigation Action Opportunities and Introduce the Mitigation Action Form
- Wrap Up

Draft Transect Map Station: Talk to technical staff about draft transects and view draft transects in GIS

Mitigation Resources, Strategies, and Actions Station: Talk with FEMA and State staff about areas of concern and potential mitigation actions to help reduce risk. Fill out Mitigation Action Form.

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Great Lakes Coastal Flood Study Discovery Products



- **Final Discovery Report**
 - Single, comprehensive report for all of Lake Erie, with appendices for Discovery meeting counties
 - Includes pre-discovery data, meeting agenda, sign-in sheets, discussion topics, decisions made, etc.
- **Final Discovery Maps**
 - Including feedback from participants
 - Visual representation of meeting outcomes



Discovery Report

Worksheet Name, Worksheet Number
County names
Community names
County
Report Number #

MEMO 1312



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Who Should Attend the Discovery Meeting?



- **Community Officials**
 - CEO and Floodplain Administrators (FPAs)
 - Planners, GIS Specialists, Engineers, Outreach Specialists, Emergency Managers, and Community Leaders
- **State Representatives**
 - State Hazard Mitigation Officer (SHMO), National Flood Insurance Program (NFIP) Coordinators, Cooperating Technical Partners (CTPs)
- **Other Federal Agencies (NOAA, USACE, USGS)**
- **Regional Planning Agencies**
- **Great Lakes Organizations**

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Lake Erie Discovery



13 counties

- Ohio
 - Ashtabula
 - Cuyahoga
 - Erie
 - Lake
 - Lorain
 - Lucas
 - Ottawa
 - Sandusky
- Michigan
 - Monroe
 - Wayne
- New York
 - Chautauqua
 - Erie
- Pennsylvania
 - Erie



132 coastal communities

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Data Request Form Overview



- **Contact Information**
- **Base Map Data**
- **Coastal Data**
- **Other Data**
- **Historic Flood Data**
- **Risk Assessment**
- **Flood Mitigation Information**
- **Community Plans and Projects**
- **Any Other Comments/Concerns Based on Local Knowledge**

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Review of Data Collected To Date



- **Base Data**
 - Draft Transects
 - Shoreline Classification Dataset
 - Bathymetry and Topographic Data
 - Watershed Boundaries
 - Jurisdictional Boundaries
 - Transportation
 - Census Blocks
 - Average Annualized Loss (AAL)
 - Coordinated Needs Management Strategy (CNMS)
 - Coastal Barrier Resources System (CBRS)
 - Declared Disasters

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Review of Data Collected To Date



- **Mitigation**
 - Hazard Mitigation Plans
 - Hazard Mitigation Grants Program (HMGP) projects
 - Pre-Disaster Mitigation Program projects
 - Projects funded through Ohio Coastal Management Assistance Grants
 - Projects funded through Great Lakes Coastal Restoration Grants
 - Projects funded through Coastal and Estuarine Land Conservation Program
- **NFIP related Data**
 - Community Assistance Visits
 - Flood Insurance Policies and claims
 - Repetitive Loss and Severe Repetitive Loss
 - Letters of Map Change (LOMC) cluster locations

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Review of Data Collected To Date



- **Structures**
 - Coastal structures
 - Dams and levees
- **Gage Stations**
 - Stream gages
 - Wave gages
 - Water level gages

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Data Gaps

- Critically Eroded Beach Areas
- Beach Nourishment/Dune Replacement Projects
- Critical Facilities (in GIS format)
- High Water Marks
- Comprehensive Plans
 - Cuyahoga County
 - Village of Bratenahl
 - City of Fairview Park
 - City of Westlake
 - City of Bay Village
 - City of Euclid
 - City of Lakewood

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Data Gaps

- Areas of recent or planned development
- Areas of high growth
- Recent land changes due to development, erosion, etc.
- Known flooding issues not represented on effective FIRMs or listed in CNMS
- On-going mitigation projects

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Next Steps and Opportunity to Get Involved

- Assessment of data and information provided
- Identification of best practices:
 - Do you have an example of a local coastal mitigation best practice?
- Discovery meeting involvement:
 - Are you be interested in participating in Discovery Meeting facilitation?

THANK YOU FOR YOUR PARTICIPATION!

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Who to Contact

- For more information: <http://www.greatlakescoast.org/>
- Send completed questionnaires to:
 - LakeErieCoastalFloodStudy@rampp-team.com
- FEMA Region V
 - Ken Hinterlong @ ken.hinterlong@fema.dhs.gov
 - Mike Hanke @ michael.hanke@fema.dhs.gov
- RAMPP
 - Amelia Vincent @ amelia.vincent@urs.com

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Questions?



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Attachment B: Data Collection

Attachment B-1: Data Request Forms

Attachment B-1

Data Request Forms



FEMA

Community Discovery Coastal Data Request Form

Thank you for taking the time to complete this questionnaire. We are interested in obtaining coastal-specific data for your community. It will provide important information to help FEMA understand coastal flood risk issues in your community and to work with you in increasing your community's resilience to coastal flooding through implementation of the Risk MAP program. In addition, this form can be used as a way to prepare for the upcoming Discovery Meeting, as the topics on this form will be discussed throughout the meeting.

Once you have completed the questionnaire, please return the form:

Via e-mail: LakeErieCoastalFloodStudy@rampp-team.com
 By mail: Amelia Vincent, c/o RAMPP
 12420 Milestone Center Drive, Suite 150
 Germantown, MD 20876
 Or by fax: (301) 820-3009

Please provide as much information as possible. If you have any questions about the Discovery process or about completing this questionnaire, please contact:

Amelia Vincent, Amelia.Vincent@URS.com, (301) 820-3186

Contact Information	
Community/Organization	Lakewood, OH
Name:	Joe Beno
Title:	Public Works Director
Address:	12650 Detroit Lakewood, OH 44107
E-mail:	Joe.Beno@LakewoodOH.net
Phone:	216 529 6804
Contact Preference	<input checked="" type="checkbox"/> Email <input type="checkbox"/> Phone <input type="checkbox"/> Mail



FEMA

Please check off the types of data you will provide by July 27, 2012.

Base Map Data		<i>Please select available data type</i>	
<input type="checkbox"/>	Topography (e.g., LiDAR or contour data)	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Property information (e.g., Building footprints, parcel data, tax assessor's data)	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
Coastal Data			
<input type="checkbox"/>	Coastal structures (e.g., seawalls, levees, jetties, groins, etc.)	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Coastal features (i.e., dunes and bluffs)	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Shoreline change data	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Locations of beach nourishment or dune restoration projects	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Areas of significant beach or dune erosion	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Mean high water	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Mean lake level	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
Other Data			
<input type="checkbox"/>	Hydraulic structures (e.g., bridges, culverts, levees, dams) with inspection status, if available	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Elevated roads	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Critical facilities	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Other known hazards with geographical boundaries, i.e., landslide hazard areas, storm surge inundation zones, wildfire hazard areas, etc.	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
<input type="checkbox"/>	Other relevant data	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>



FEMA

Please provide the following information about the community:

Historical Flood Data		
Are you aware of any coastal flooding issues not represented on effective FIRMs:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please explain and provide inundation areas of historic flooding events if available.
Risk Assessment		
Does your community have HAZUS-based loss estimates from average annualized loss?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please describe:
Does your community have other risk assessment data?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please describe:



FEMA

Flood Mitigation Information		
Does your community have a hazard mitigation plan?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, what is the status of the hazard mitigation plan? <input type="checkbox"/> being reviewed <input type="checkbox"/> it has been adopted <input type="checkbox"/> it is currently being updated <input type="checkbox"/> it is planned for updates
Does the plan reflect any coastal flood hazards?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please explain:
Does the hazard mitigation plan indicate any data deficiencies for flood hazards that could be addressed through a flood study, especially near coastal zones?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please explain:
Does your community have on-going mitigation projects, such as acquisition, elevation, flood control, soil stabilization, natural systems restoration, floodproofing, etc.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	If yes, please describe the projects and their locations: Lakewood Park NW corner Behind St. Augustines



FEMA

Any specific coastal mitigation projects?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please explain:
Does your community have experience with coastal flood disasters and flood disaster recovery?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please explain:
Does your community coordinate floodplain management programs with programs for the management and planning of open space? If possible, any coastal specific?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please explain:



FEMA

<p>Have you had any prior proactive mitigation actions and planning efforts that resulted in reduced losses? If possible, any coastal specific?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please describe:</p>
<p>Has your community applied and granted Individual Assistance/Public Assistance grants for declared disasters?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please describe and provide the locations of these grants projects:</p>
<p>Has your community applied for FEMA Hazard Mitigation Grants program or other mitigation funds (USACE, NRCS, USGS, state Hazard Mitigation officer, etc.) in the past?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please describe and provide the locations of on-going/planned/finished grants projects/structures:</p>



FEMA

<p>How would you rank the community's ability to implement mitigation actions and to communicate flood risk to citizens?</p>	<p><input type="checkbox"/> high <input type="checkbox"/> medium <input checked="" type="checkbox"/> low</p>
<p>Community Plans and Projects</p>	
<p>Does your community have a comprehensive plan?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p> <p>If you answered yes and you have a hazard mitigation plan, was your hazard mitigation plan coordinated with the comprehensive plan?</p> <p><input type="checkbox"/> yes <input type="checkbox"/> no</p>
<p>Does your community's comprehensive plan have a special consideration for coastal areas?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p> <p>If yes, please explain elements/regulations that affect coastal area development.</p>
<p>Does your community have a coastal zone management plan?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p> <p>If yes, please provide a digital or hard copy of the plan.</p>
<p>Does your community have planning staff or a planning/zoning commission and other measures, such as ordinances, administrative plans, or other programs contributing to effective administration of floodplain zoning, building codes, open space preservation, and coastal zone management?</p>	<p><input checked="" type="checkbox"/> yes <input type="checkbox"/> no</p> <p>If yes, please explain this group's role in floodplain management and provide examples of the types of programs in place:</p> <p><i>Lakewood has a Planning Commission</i></p>



FEMA

<p>Does your community have areas of recent or planned development/re-development and areas of high growth or other natural land changes (e.g., wildfires or landslides):</p>	<p><input checked="" type="checkbox"/> yes <input type="checkbox"/> no</p>	<p>If yes, please describe: <i>Slave Condo Project</i></p>
<p>Are there any locations of other ongoing studies or projects and studied areas that have been modified since the effective map and require an updated study (e.g., highway improvement, seawall improvement, etc.)</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please describe:</p>
<p>Any other comments/concerns based on local knowledge:</p>		



FEMA

Community Discovery Coastal Data Request Form

Thank you for taking the time to complete this questionnaire. We are interested in obtaining coastal-specific data for your community. It will provide important information to help FEMA understand coastal flood risk issues in your community and to work with you in increasing your community's resilience to coastal flooding through implementation of the Risk MAP program. In addition, this form can be used as a way to prepare for the upcoming Discovery Meeting, as the topics on this form will be discussed throughout the meeting.

Once you have completed the questionnaire, please return the form:

Via e-mail: LakeErieCoastalFloodStudy@rampp-team.com
 By mail: Amelia Vincent, c/o RAMPP
 12420 Milestone Center Drive, Suite 150
 Germantown, MD 20876
 Or by fax: (301) 820-3009

Please provide as much information as possible. If you have any questions about the Discovery process or about completing this questionnaire, please contact:

Amelia Vincent, Amelia.Vincent@URS.com, (301) 820-3186

Contact Information	
Community/Organization	City of Rocky River
Name:	Ron Grotschalk
Title:	Inspector
Address:	2012 Hilliard Blvd. Rocky River, OH 44116
E-mail:	rockyriver@rrcity.com
Phone:	440-331-0600
Contact Preference	<input checked="" type="checkbox"/> Email <input type="checkbox"/> Phone <input type="checkbox"/> Mail



FEMA

Please check off the types of data you will provide by July 27, 2012.

Base Map Data		<i>Please select available data type</i>	
	Topography (e.g., LiDAR or contour data)	<input type="checkbox"/> <i>Hard copy</i>	<input checked="" type="checkbox"/> <i>Digital</i>
	Property information (e.g., Building footprints, parcel data, tax assessor's data)	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
Coastal Data			
	Coastal structures (e.g., seawalls, levees, jetties, groins, etc.)	<input type="checkbox"/> <i>Hard copy</i>	<input checked="" type="checkbox"/> <i>Digital</i>
	Coastal features (i.e., dunes and bluffs)	<input type="checkbox"/> <i>Hard copy</i>	<input checked="" type="checkbox"/> <i>Digital</i>
	Shoreline change data	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
	Locations of beach nourishment or dune restoration projects	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
	Areas of significant beach or dune erosion	<input type="checkbox"/> <i>Hard copy</i>	<input checked="" type="checkbox"/> <i>Digital</i>
	Mean high water	<input type="checkbox"/> <i>Hard copy</i>	<input checked="" type="checkbox"/> <i>Digital</i>
	Mean lake level	<input type="checkbox"/> <i>Hard copy</i>	<input checked="" type="checkbox"/> <i>Digital</i>
Other Data			
	Hydraulic structures (e.g., bridges, culverts, levees, dams) with inspection status, if available	<input type="checkbox"/> <i>Hard copy</i>	<input checked="" type="checkbox"/> <i>Digital</i>
	Elevated roads	<input type="checkbox"/> <i>Hard copy</i>	<input checked="" type="checkbox"/> <i>Digital</i>
	Critical facilities	<input type="checkbox"/> <i>Hard copy</i>	<input checked="" type="checkbox"/> <i>Digital</i>
	Other known hazards with geographical boundaries, i.e., landslide hazard areas, storm surge inundation zones, wildfire hazard areas, etc.	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>
	Other relevant data	<input type="checkbox"/> <i>Hard copy</i>	<input type="checkbox"/> <i>Digital</i>



FEMA

Please provide the following information about the community:

Historical Flood Data		
Are you aware of any coastal flooding issues not represented on effective FIRMs:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please explain and provide inundation areas of historic flooding events if available.
Risk Assessment		
Does your community have HAZUS-based loss estimates from average annualized loss?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please describe:
Does your community have other risk assessment data?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please describe:



FEMA

Flood Mitigation Information

<p>Does your community have a hazard mitigation plan?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, what is the status of the hazard mitigation plan?</p> <p><input type="checkbox"/> being reviewed <input type="checkbox"/> it has been adopted <input type="checkbox"/> it is currently being updated <input type="checkbox"/> it is planned for updates</p>
<p>Does the plan reflect any coastal flood hazards?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please explain:</p>
<p>Does the hazard mitigation plan indicate any data deficiencies for flood hazards that could be addressed through a flood study, especially near coastal zones?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please explain:</p>
<p>Does your community have on-going mitigation projects, such as acquisition, elevation, flood control, soil stabilization, natural systems restoration, floodproofing, etc.</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please describe the projects and their locations:</p>



FEMA

Any specific coastal mitigation projects?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please explain:
Does your community have experience with coastal flood disasters and flood disaster recovery?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	If yes, please explain:
Does your community coordinate floodplain management programs with programs for the management and planning of open space? If possible, any coastal specific?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	If yes, please explain: ? Kevin Beirne is the flood plain manager (not available to participate in this survey)



FEMA

<p>Have you had any prior proactive mitigation actions and planning efforts that resulted in reduced losses? If possible, any coastal specific?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please describe:</p>
<p>Has your community applied and granted Individual Assistance/Public Assistance grants for declared disasters?</p>	<p><input checked="" type="checkbox"/> yes <input type="checkbox"/> no</p>	<p>If yes, please describe and provide the locations of these grants projects:</p> <p><i>Some \$ was given for safety service (police & fire) overtime - service personnel to cut trees out of the road during storms (approx 2007?)</i></p>
<p>Has your community applied for FEMA Hazard Mitigation Grants program or other mitigation funds (USACE, NRCS, USGS, state Hazard Mitigation officer, etc.) in the past?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please describe and provide the locations of on-going/planned/finished grants projects/structures:</p>



FEMA

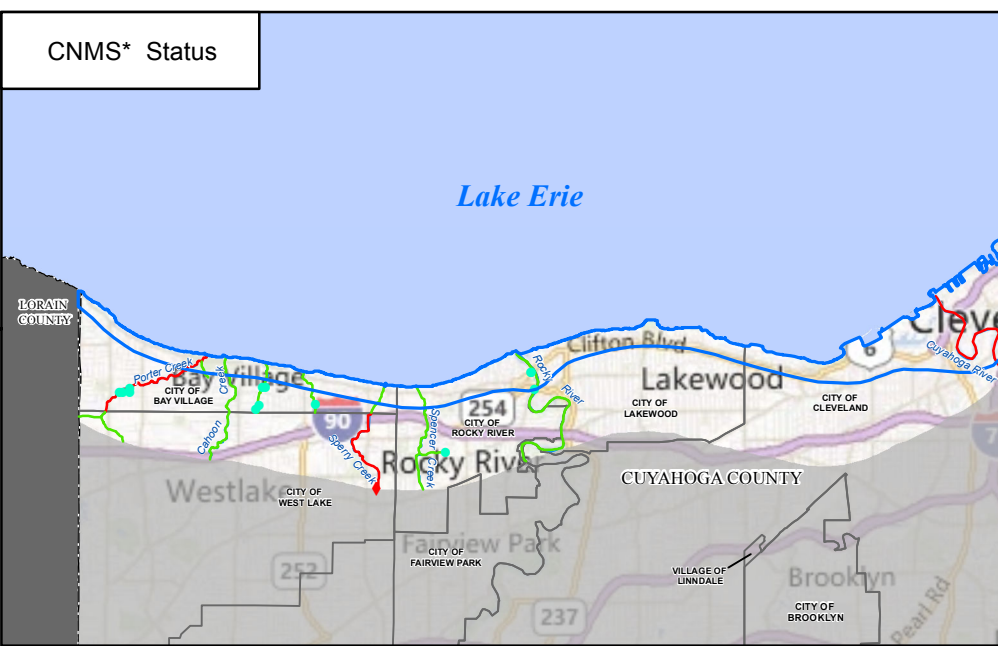
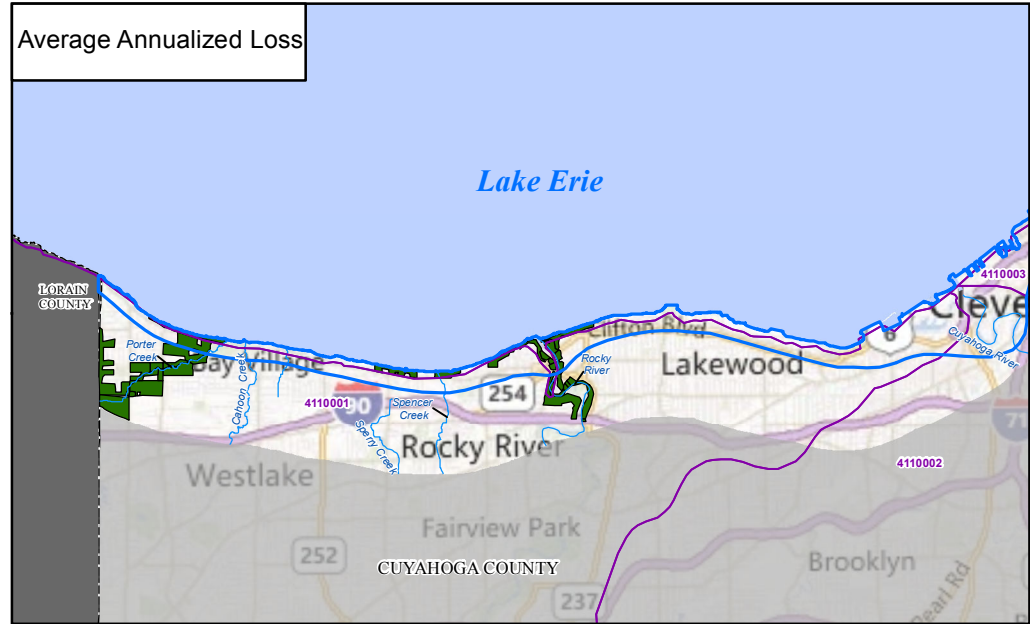
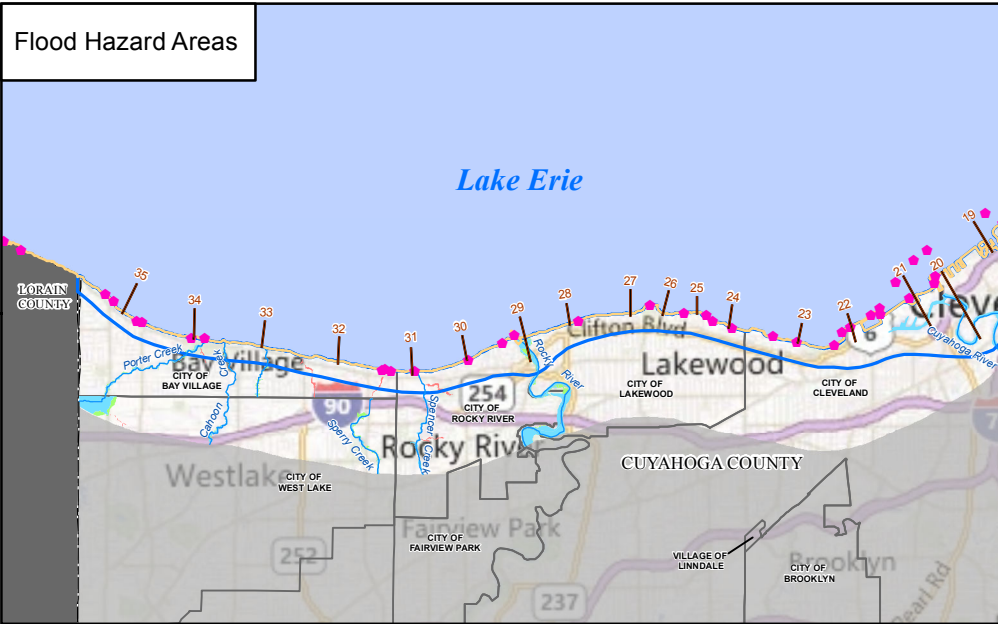
<p>How would you rank the community's ability to implement mitigation actions and to communicate flood risk to citizens?</p>	<p><input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low</p>
<p>Community Plans and Projects</p>	
<p>Does your community have a comprehensive plan?</p>	<p><input type="checkbox"/> yes <input type="checkbox"/> no</p> <p>If you answered yes and you have a hazard mitigation plan, was your hazard mitigation plan coordinated with the comprehensive plan?</p> <p><input type="checkbox"/> yes <input type="checkbox"/> no</p>
<p>Does your community's comprehensive plan have a special consideration for coastal areas?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p> <p>If yes, please explain elements/regulations that affect coastal area development.</p>
<p>Does your community have a coastal zone management plan?</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p> <p>If yes, please provide a digital or hard copy of the plan.</p>
<p>Does your community have planning staff or a planning/zoning commission and other measures, such as ordinances, administrative plans, or other programs contributing to effective administration of floodplain zoning, building codes, open space preservation, and coastal zone management?</p>	<p><input checked="" type="checkbox"/> yes <input type="checkbox"/> no</p> <p>If yes, please explain this group's role in floodplain management and provide examples of the types of programs in place:</p> <p><i>Building Commissioner & Planning Commission Review - all plans requiring zoning, etc. attention.</i></p>



FEMA

<p>Does your community have areas of recent or planned development/re-development and areas of high growth or other natural land changes (e.g., wildfires or landslides):</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please describe:</p>
<p>Are there any locations of other ongoing studies or projects and studied areas that have been modified since the effective map and require an updated study (e.g., highway improvement, seawall improvement, etc.)</p>	<p><input type="checkbox"/> yes <input checked="" type="checkbox"/> no</p>	<p>If yes, please describe:</p>
<p>Any other comments/concerns based on local knowledge:</p>		

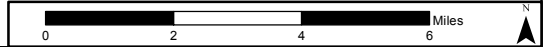
Attachment C: Discovery Maps



NFIP Total Losses					
Community	Total Losses	Closed Losses	Open Losses	CWOP Losses	Total Payments (\$)
Cuyahoga County	8	7	0	1	97,151
Bay Village, City of	23	14	0	9	57,718
Bratenahl, Village of	N/A	N/A	N/A	N/A	N/A
Cleveland, City of	125	81	0	44	1,044,565
Euclid, City of	16	7	0	9	13,729
Lakewood, City of	40	32	0	8	535,446
Rocky River, City of	41	33	0	8	597,519

Declared Disasters					
State	Date	County	Type	Incident Type	Title
OH	07/15/1969	Cuyahoga	DR	Tornado	Tornadoes, Severe Storms, & Flooding
OH	07/19/1972	Cuyahoga	DR	Flood	Tropical Storm Agnes
OH	04/27/1973	Cuyahoga	DR	Flood	Severe Storms & Flooding
OH	09/11/1975	Cuyahoga	DR	Flood	Winds, Tornadoes, Heavy Rains, & Flooding
OH	06/10/1989	Cuyahoga	DR	Flood	Severe Storms & Flooding
OH	08/04/1992	Cuyahoga	DR	Severe Storms	Severe Storms, Tornadoes, & Flooding
OH	08/01/2003	Cuyahoga	DR	Tornado	Tornadoes, Flooding, Severe Storms, & High Winds
OH	06/03/2004	Cuyahoga	DR	Severe Storms	Severe Storms & Flooding
OH	09/19/2004	Cuyahoga	DR	Severe Storms	Severe Storms & Flooding
OH	07/02/2006	Cuyahoga	DR	Severe Storms	Severe Storms, Tornadoes, Straight Line Winds, & Flooding

Hazard Mitigation Action			
Name of Hazard Mitigation Plan	Plan Approval Date	Plan Expiration Date	Identified Hazard Mitigation Action
Cuyahoga County - Countywide All Natural Hazards Mitigation Plan	06/21/2007	03/01/2012	Evaluate installing elevation markers or gates related to high hazard areas. Develop debris management program and plan. Modify infrastructure to handle bigger storm events. Determine areas of vulnerability for both utilities and roadways and seek funding to permanently mitigate.



MAP SYMBOLOLOGY

<p>LEGEND</p> <ul style="list-style-type: none"> Dam LOMC Transect Lake Erie Shoreline HUC 8 Stream Discovery Study Area Surrounding County County Boundary Municipal Boundary 	<ul style="list-style-type: none"> * USGS Gage Coastal Structure <p>SPECIAL FLOOD HAZARD AREAS</p> <ul style="list-style-type: none"> A ZONE AE ZONE 0.2 PCT ANNUAL CHANCE FLOOD ZONE 	<p>CUYAHOGA COUNTY AAL DATA Total Average Annualized Loss per Census Block</p> <ul style="list-style-type: none"> \$1 - \$2,500 \$2,501 - \$100,000 \$100,001 - \$250,000 \$250,001 - \$750,000 \$750,001 - \$2,000,000 	<p>CNMS* VALIDATION STATUS</p> <ul style="list-style-type: none"> UNVERIFIED UNKNOWN VALID
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* CNMS - Coordinated Needs Management Strategy

COASTAL STUDY LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM

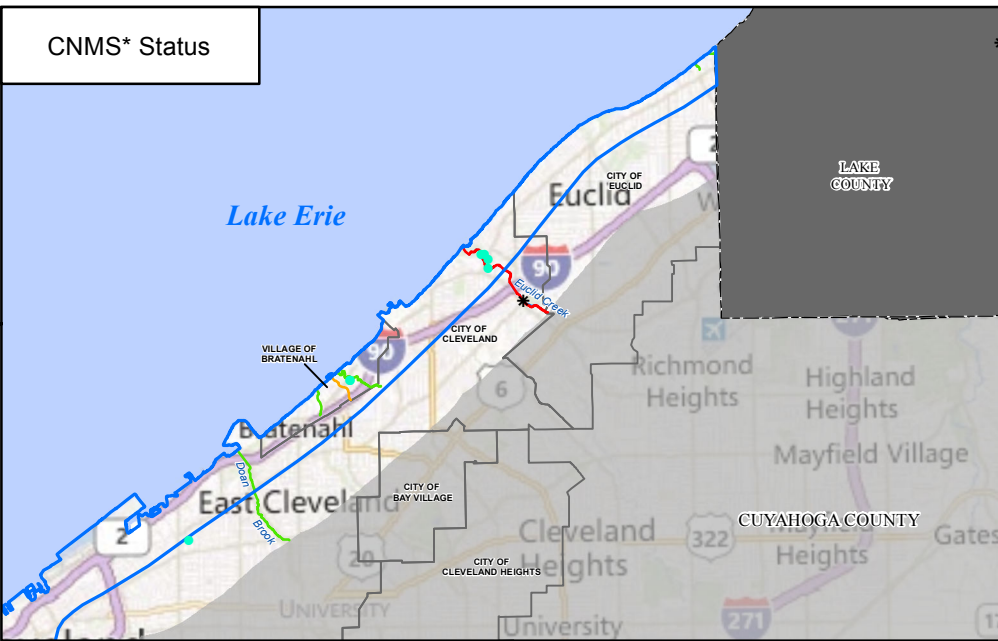
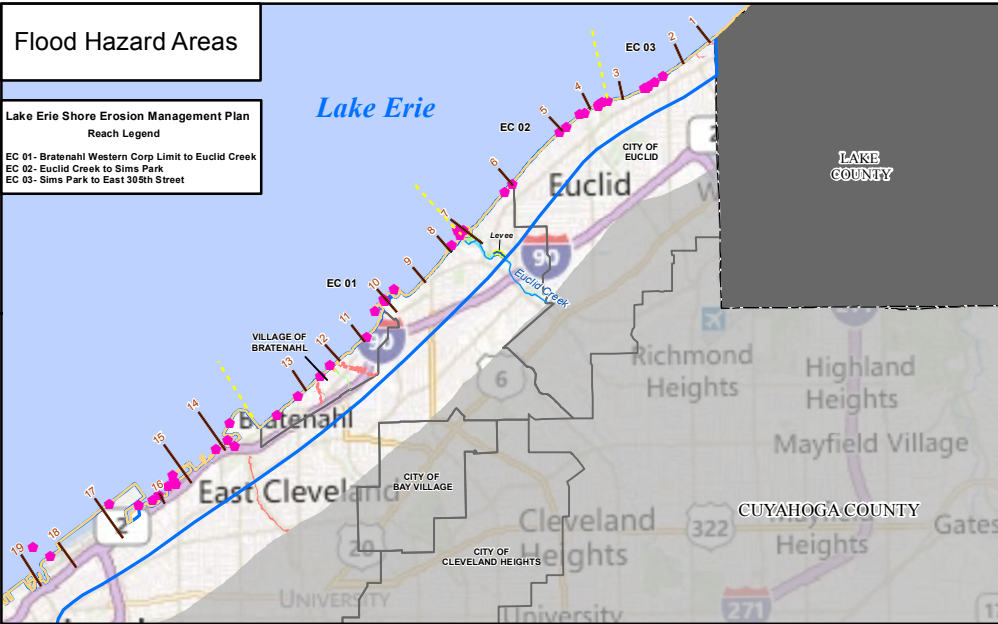
Discovery Map

LAKE ERIE COASTAL STUDY

Cuyahoga County, Ohio (Map 1 of 2)

Cuyahoga County Euclid, City of
Bay Village, City of Lakewood, City of
Bratenahl, Village of Rocky River, City of
Cleveland, City of

Final Discovery Map Date:
March 29, 2013



NFIP Total Losses

Community	Total Losses	Closed Losses	Open Losses	CWOP Losses	Total Payments (\$)
Cuyahoga County	8	7	0	1	97,151
Bay Village, City of	23	14	0	9	57,718
Bratenahl, Village of	N/A	N/A	N/A	N/A	N/A
Cleveland, City of	125	81	0	44	1,044,565
Euclid, City of	16	7	0	9	13,729
Lakewood, City of	40	32	0	8	535,446
Rocky River, City of	41	33	0	8	597,519

Declared Disasters

State	Date	County	Type	Incident Type	Title
OH	07/15/1969	Cuyahoga	DR	Tornado	Tornadoes, Severe Storms, & Flooding
OH	07/19/1972	Cuyahoga	DR	Flood	Tropical Storm Agnes
OH	04/27/1973	Cuyahoga	DR	Flood	Severe Storms & Flooding
OH	09/11/1975	Cuyahoga	DR	Flood	Winds, Tornadoes, Heavy Rains, & Flooding
OH	06/10/1989	Cuyahoga	DR	Flood	Severe Storms & Flooding
OH	08/04/1992	Cuyahoga	DR	Severe Storms	Severe Storms, Tornadoes, & Flooding
OH	08/01/2003	Cuyahoga	DR	Tornado	Tornadoes, Flooding, Severe Storms, & High Winds
OH	06/03/2004	Cuyahoga	DR	Severe Storms	Severe Storms & Flooding
OH	09/19/2004	Cuyahoga	DR	Severe Storms	Severe Storms & Flooding
OH	07/02/2006	Cuyahoga	DR	Severe Storms	Severe Storms, Tornadoes, Straight Line Winds, & Flooding

Name of Hazard Mitigation Plan	Plan Approval Date	Plan Expiration Date	Identified Hazard Mitigation Action
Cuyahoga County - Countywide All Natural Hazards Mitigation Plan	06/21/2007	03/01/2012	Evaluate installing elevation markers or gates related to high hazard areas. Develop debris management program and plan. Modify infrastructure to handle bigger storm events. Determine areas of vulnerability for both utilities and roadways and seek funding to permanently mitigate.

MAP SYMBOLOLOGY

LEGEND — Transect — Lake Erie Shoreline — HUC 8 — Stream — Agricultural Levee — Discovery Study Area — Surrounding County — County Boundary — Municipal Boundary	● LOMC * USGS Gage ● Coastal Structure SPECIAL FLOOD HAZARD AREAS ■ A ZONE ■ AE ZONE ■ 0.2 PCT ANNUAL CHANCE FLOOD ZONE	CUYAHOGA COUNTY AAL DATA Total Average Annualized Loss per Census Block ■ \$1 - \$2,500 ■ \$2,501 - \$100,000 ■ \$100,001 - \$250,000 ■ \$250,001 - \$750,000 ■ \$750,001 - \$2,000,000	CNMS* VALIDATION STATUS — UNVERIFIED — UNKNOWN — VALID
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* CNMS - Coordinated Needs Management Strategy

COASTAL STUDY LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM

Discovery Map

LAKE ERIE COASTAL STUDY

Cuyahoga County, Ohio (Map 2 of 2)

Cuyahoga County, Euclid, City of, Bay Village, City of, Lakewood, City of, Bratenahl, Village of, Rocky River, City of, Cleveland, City of

Final Discovery Map Date: March 29, 2013

Attachment D: Discovery Meeting

Attachment D-1: Meeting Agenda

Attachment D-2: Presentation

Attachment D-3: Sign-in Sheets

Attachment D-4: Meeting Summary

Attachment D-5: Meeting Evaluation Forms

Attachment D-6: Mitigation Action Form

Attachment D-7: Community Risk MAP Questionnaire Forms

Attachment D-8: Discovery Map Comments from Meeting

Attachment D-1

Meeting Agenda



Project Name:	FEMA Region V Discovery
Meeting:	Cuyahoga County, OH Great Lakes Coastal Discovery Meeting
Date and Time:	Thursday August 2, 2012 9:30 am to 11:30 am
Place:	Bay Village Branch of the Cuyahoga County Public Library 502 Cahoon Road, Bay Village, OH 44140
Facilitator:	Mike Hanke (FEMA) and Amelia Vincent (RAMPP)

Discovery Meeting Agenda

1. Why are we here? (15 minutes)

- Great Lakes Coastal Flood Study Overview and Schedule
- Discovery Process and Outcomes

2. Coastal mapping and flood risk topics to be aware of (25 minutes)

3. How does this apply to my community? (10 minutes)

4. Interactive Session A (25 minutes)

- View and Discuss Local Coastal Areas of Concern Using the Discovery Map and Community Risk MAP Questionnaire

5. Hazard mitigation opportunities and grant funding (10 minutes)

6. Interactive Session B (25 minutes)

- Discuss Mitigation Action Opportunities
- Introduce the Mitigation Action Form and the State Hazard Analysis Resource and Planning Portal (SHARPP)

7. Wrap Up (10 minutes)

- Review of action items and next steps

Optional Interactive Stations (30 minutes - 1hr following meeting)

- *Draft Transect Map Station: Talk to technical staff about draft transects and view draft transects in GIS*
- *Mitigation Resources, Strategies, and Actions Station: Talk with FEMA and State staff about areas of concern and potential mitigation actions to help reduce risk. Fill out Mitigation Action Form.*

Attachment D-2 Presentation



Lake Erie Discovery

Cuyahoga County, OH

August 2, 2012
9:30 am to 11:30 am

Bay Village Branch
Cuyahoga County Public Library
Bay Village, OH



Cleveland Browns Stadium

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Introductions

Who's here?

- State Representatives
 - ODNR
 - OEMA
- Risk MAP Project Team
 - FEMA
 - RAMPP
- Local Stakeholders
 - CEOs
 - Floodplain Administrators
 - Planners
 - Engineers
 - Emergency Managers
 - Community Leaders
 - Regional Planning Agencies
 - Coastal Organizations

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Discovery Meeting Agenda



- Why are we here?
 - Risk MAP Program, Great Lakes Study, and Discovery
- Coastal mapping and flood risk topics
- How does this apply to my community?
- Interactive Session A
 - View and Discuss Local Coastal Areas of Concern Using the Discovery Map and Community Risk MAP Questionnaire
- Hazard mitigation opportunities and grant funding
- Interactive Session B
 - Discuss Mitigation Action Opportunities and Introduce the Mitigation Action Form/SHARPP
- Wrap Up
- Optional Interactive Stations

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Risk Mapping, Assessment and Planning

Risk MAP



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



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Great Lakes Coastal Flood Study



U.S. Army Corps of Engineers, Grand Haven

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Great Lakes Coastal Flood Study Overview



- Latest models, data, and technology
 - Includes basin-wide water surface grids and storm sampling built from continuous record of 50 years of meteorological, water level, and ice field data (1960 - 2009)
 - Includes changes to runup computational approach
 - Updated version of Appendix D.3 (FEMA Guidelines and Standards)
 - Latest imagery, LiDAR, and Bathymetry
 - Deliver updated flood maps and flood risk datasets
- Equip Federal Agencies, eight States and hundreds of coastal communities with data and planning tools to facilitate flood risk actions to enhance resiliency along the Great Lakes

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Lake Erie Discovery



13 counties

- Ohio
 - Ashtabula
 - Cuyahoga
 - Erie
 - Lake
 - Lorain
 - Lucas
 - Ottawa
 - Sandusky
- Michigan
 - Monroe
 - Wayne
- New York
 - Chautauqua
 - Erie
- Pennsylvania
 - Erie



132 coastal communities

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Discovery Meeting Objectives



- Continue and expand upon stakeholder engagement
- Discuss data inputs from Federal, state and local
- Identify local coastal flood hazard needs and areas of concern
- Identify products and datasets that best advance coastal mitigation action
- NFIP regulatory updates
- Discovery schedule and deliverables

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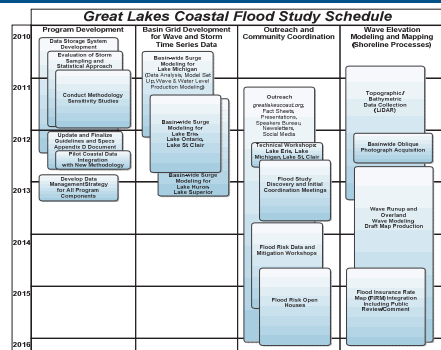
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Stakeholder Engagement



Stakeholder Engagement



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Data Inputs



- Updates to analysis and methodology guidance
- Proposed transect locations
- Topographic and Bathymetry data collected
- Bare Earth Imagery collected
- Identify reaches requiring special attention and data
- Document local data sources that will help improve study

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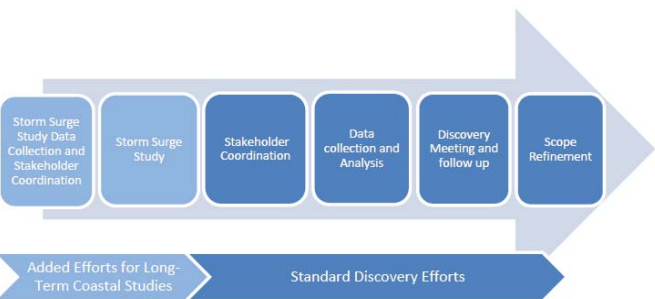
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Discovery Schedule Overview



Discovery Schedule Overview



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Lake Erie Discovery



Schedule of Activities

- Identify Draft Transect Locations – Completed
- Research available data – Completed
- Information Exchange with Community Stakeholders – July 2012
- Prepare draft Discovery Maps and Reports – July 2012
- Establish inventory of coastal structures based on oblique imagery – August/September 2012
- Facilitate Discovery Meetings – July/August 2012
- Final Discovery Report and Maps – November 2012
- Create library of digital data – November 2012

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Great Lakes Coastal Flood Study Discovery Products



- **Final Discovery Report**
 - Single, comprehensive report for all of Lake Erie, with appendices for each Discovery meeting
 - Includes pre-discovery data, meeting agenda, sign-in sheets, discussion topics, decisions made, etc.
- **Final Discovery Maps**
 - Including feedback from participants
 - Visual representation of meeting outcomes
 - Delivered in digital format



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Discovery Outcomes



- **Explain the Project**
 - Regulatory and non-regulatory products/datasets
 - Analysis, concepts, and timelines
- **Encourage Community Participation**
 - Transect Locations
 - Areas of concern and need
 - Data to improve upon products and datasets
- **Introduce Mitigation Action**
 - Mitigation Action Form
 - SHARPP
 - Mitigation strategies for coastal flood and erosion

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Data Collected



- Topographic – Light Detection and Ranging (LiDAR) from OSIP
- Bathymetry Data* – NOAA National Geophysical Data Center
- Base data – boundaries, streams, census blocks, etc.
- Average Annualized Loss data
- Shoreline classification
- Federal and State disaster information
- Repetitive loss data
- Mitigation plans
- Stream, wave, and water level gage locations

* New, high-quality USACE bathy/topo will replace existing data

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Data Gaps



- Building footprints
- Critically eroded beach areas
- Coastal construction control line
- Critical Facilities (in GIS format)
- High water marks
- Areas of recent or planned development and high growth
- Recent land changes due to development or erosion
- Known flooding issues not represented on effective FIRMs or listed in CNMS

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Coastal Mapping and Flood Risk Topics

- Draft Transects
- Coastal Guidance Updates
- VE Zone Mapping and LIMWA
- Coastal Flood Risk Products

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Basic Elements of a Coastal Hazard Analysis



Base Flood Elevation on FIRM includes 4 components:

1. Storm surge stillwater elevation (SWEL)
 2. Amount of wave setup
 3. Wave height above storm surge (stillwater) elevation
 4. Wave runup above storm surge elevation (where present)
- } Determined from storm surge model

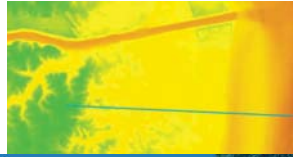
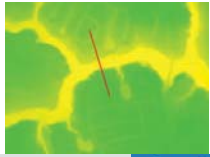
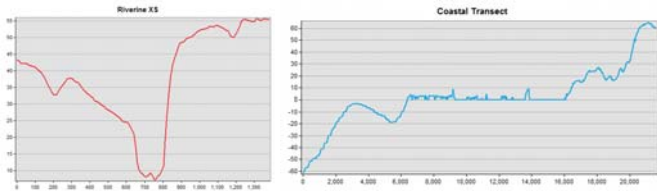


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Riverine XS vs Coastal Transect



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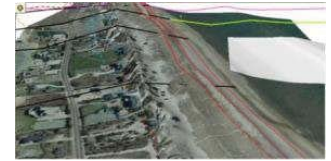
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Transect Placement



- Transects are placed to define representative profiles for a shoreline reach
- Transect spacing depends on upland development
 - Developed areas – As dense as 1,000 ft
 - Rural areas – Spacing can be 1-2 miles
- Transects are:
 - Profiles along which flooding analysis is performed
 - Used to transform offshore conditions to shoreline
 - Use to define coastal flood risks inland of shoreline



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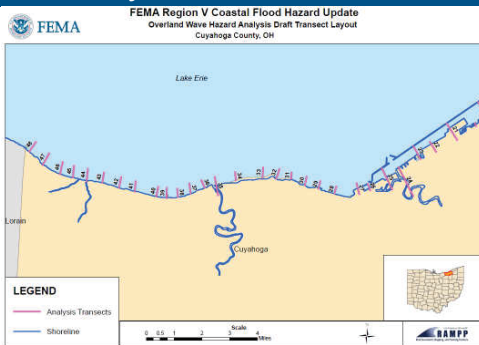
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Draft Transect Layout Cuyahoga County



- 48 transects
- 35 miles of shoreline along Lake Erie



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Coastal Flood Hazard Zones



- Hazard Zones
 - Zone VE** – Areas expected to be affected by high velocity wave impact in 100-year event (wave heights or runup depth at or greater than 3 feet)
 - Base Flood Elevation established
 - Zone AE** – Areas expected to be flooded by inundation in 100-year event
 - Base Flood Elevation established (wave heights and runup depth less than 3 feet)
 - Zone X** – Areas not expected to be flooded in 100-year event
 - Shaded X – Areas expected to be flooded in 500-year event
 - Base Flood Elevations not established
 - LiMWA** – Areas subject to wave heights of at least 1.5 feet
 - Non-Regulatory
- Gutters
 - Internal zone breaks where Base Flood Elevation changes
 - VE/AE Gutter - Location where risk of damage due to wave action diminishes

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VE Zones in the Great Lakes



- From the revised Appendix D.3:
 - “VE zones may also be mapped where the engineering analysis indicates their presence”
 - “The typical study finding is a narrow VE zone, making its usefulness uncertain on maps at usual scales”
 - “Relatively small numbers of existing coastal buildings are likely to be affected by possible VE zone designations along some Great Lakes”
 - “Only with prior approval from the FEMA study representative should the VE zones be mapped”

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How is LiMWA Defined?



- LiMWA is the line mapped to delineate the inland extent of wave heights of at least 1.5 feet
 - Wave heights as small as 1.5 feet can cause significant damage to structures
- LiMWA alerts people that are not in the high wave hazard zone (Zone VE) that they may still be affected by wave action in the Zone
- CRS benefit for communities requiring Zone VE construction standards in areas defined by LiMWA or areas subject to waves greater than 1.5 ft

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Wave Action - Structural Risk



- US Army Corps of Engineers – 1973
 - Breaking wave height of 3 feet
 - “area subject to high velocity waters, including but not limited to hurricane wave wash”
- FEMA – 2000
 - Coastal Construction Manual
 - Additional post-storm damage assessments identified 1.5 wave also can knock a structure off a foundation



http://www.fema.gov/pdf/rebuild/mat/coastal_a_zones.pdf

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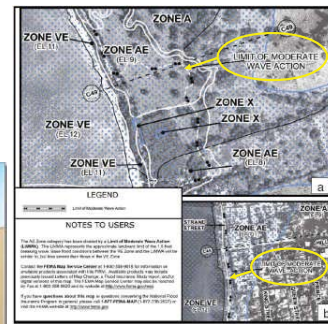
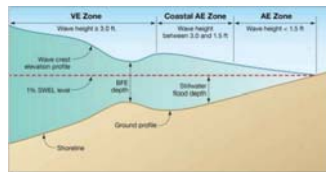


Limit of Moderate Wave Action (LiMWA)



FEMA Procedure Memorandum No. 50, 2008

- Not a regulatory requirement
- No Federal Insurance requirements tied to LiMWA



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Coastal Flood Risk Products

- Coastal Depth Grids and Hazus
- Changes Since Last FIRM
- Coastal Non-Regulatory Products

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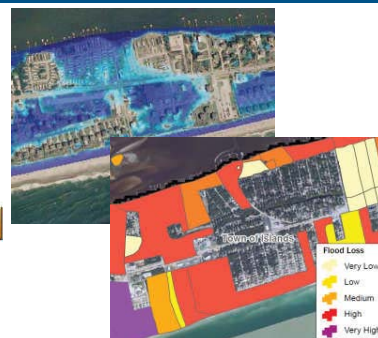


Standard Flood Risk Products



- Coastal Depth Grids
- Flood Risk Assessment (Hazus)

HAZUS
EARTHQUAKE • WIND • FLOOD MH



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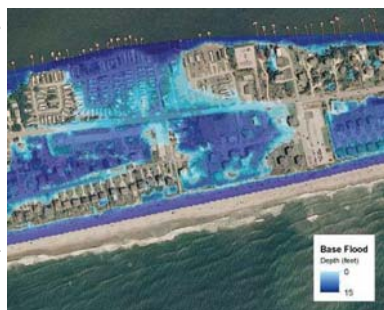
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Coastal Depth Grid



- Should reflect total depth (i.e. stillwater and waves) – typically only produced for the 1% annual chance flood
- Created using the regulatory mapping and associated zone breaks as input
- Depths reflect difference between wave crest elevation and ground for the 1-percent-annual-chance flood



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Coastal Flood Risk Assessments



- Similar to Flood Risk Assessments for riverine, but using the coastal depth grids as input for the refined analysis
- Hazus analysis and data can support adoption of higher regulatory standards for structures in high loss areas
- Provides justification to fund mitigation actions

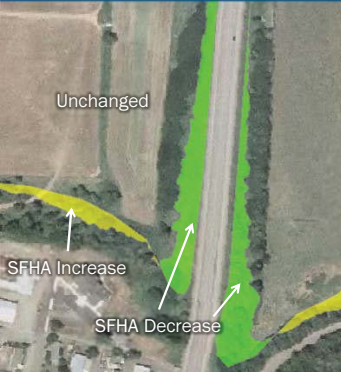


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Changes Since Last FIRM



Data Fields Include	Example Data Values
Old Study Date	e.g. 1985
Old Model Type(s)	e.g. HEC-1 / HEC-2
Old Zone Type	e.g. Zone A
Old Topography	e.g. USGS 10-ft
New Study Info/Methods	Dates, Models, etc.
New Study Zone	e.g. Zone AE
New Topography	e.g. LiDAR 2-ft
New Study Engineering Factors / Changes	e.g. new structures, gages, topo, landuse, etc.
Estimated Structures	e.g. 9
Estimated Population	e.g. 27

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Coastal Non-Regulatory Products



- If and when are products produced?
 - Operating Guidance for the Selection of Enhanced Datasets
 - Availability of coastal analysis modeling information
 - Will the information be beneficial to the communities?
 - Increase risk awareness?
 - Facilitate mitigation actions?
- Products may be produced for the entire coastline or focused areas determined to be the most valuable
 - Discovery process should facilitate these selections
- Additions to Flood Risk Map, Flood Risk Database, & Flood Risk Report
- Datasets will not be recreated from existing data available outside of FEMA. Direction to such information will be provided in the Flood Risk Report.

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Coastal Non-Regulatory Products in Development



Lake Levels



Shoreline Feature Dataset



Source: ODNR Office of Coastal Management

Erosion



Lake Erie Erosion
From ODNR website

Lake Erie Shoreline
Source: ODNR Office of Coastal Management



Flooding

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Shoreline Features Database



Shoreline Material	Primary Land Use	Primary Coast Type	Primary Vegetation
Sand	High Density Residential	High Dune, 10'+	None
Cohesive	Moderate Density Residential	Dune, 2' - 10'	High Density Shrubs/Trees
Cobble	Low Density Residential	High Bluff, 10'+	Moderate Density Shrubs/Trees
Diamicton*	Commercial/Industrial	Bluff, 2' - 10'	Low Density Shrubs/Trees
Shingle	Park Land	Coastal Wetland	Manicured Lawn
Bedrock	Farm Land	Flat Coast	Native Vegetation
Artificial	Forested		

- Contains primary and secondary Land Use tables – same for coast type and vegetation
- Current project collects data at one-mile spacing, for scoping and cost
- Current project does not include field-based reconnaissance or sediment/subsurface soils collection

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Coastal Flood Risk Map

- Similar to riverine map
- Highlights area where datasets were produced
- Use of callout boxes
- Should drive the conversation towards mitigation



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Areas Affected by Increased Coastal Inundation



- Highlights areas that would be inundated if water levels increased by 1, 2, or 3 ft (or other user-defined increase)
- Typically created for the 1% annual chance flood, but could be done for other flood events
- Possible causes for higher flood levels include :
 - More severe storm events
 - Climate change impacts such as sea level rise



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Wave Hazard Severity Areas



- Highlights areas where wave hazard are high (V Zone and PFD), moderate (between V Zone and LiMWA where wave heights are between 1.5 – 3ft), and minimal (wave heights less than 1.5ft)
- Dataset can also optionally store number of buildings within each delineated polygon (if local building footprint data is available)



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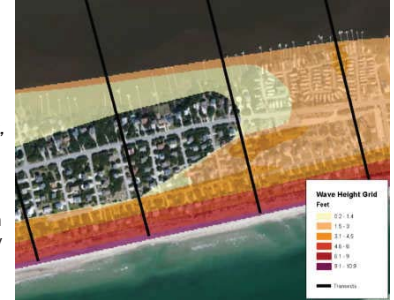
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Coastal Wave Height Grid



- Dataset showing wave height information to greater detail than the Wave Hazard Severity Areas dataset by delivering within a raster dataset
- Represents the full wave height, not just the portion of the wave crest that lies above the stillwater elevation
- Wave damage to structures can be mitigated if they are properly elevated above predicted water levels and wave heights on engineered foundations



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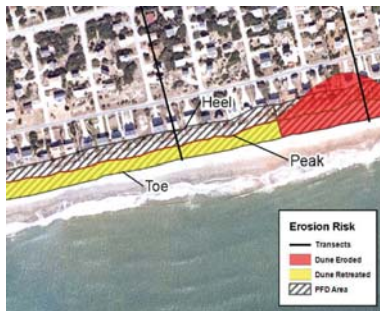
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Erosion Risk Determination



- Polygons depicting the spatial extent of the regulatory Primary Frontal Dune (PFD), based on topography and/or shoreline survey data and augmented with aerial photos as needed
- Polygons can be further subdivided to show the spatial extent of the eroded ground as estimated from the erosion analysis conducted for the 1% annual chance flood



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Coastal Updates to Flood Risk Report



- Explanations of coastal non-regulatory datasets and their use in risk communication and mitigation planning
- References to other publications and resources that provide information on coastal risks
- Captures and reports increases and decreases in Coastal High Hazard Areas (VE & V Zones) within the Changes Since Last FIRM tables in the FRR

Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	23.8	1.6	0.4	1.2
Within Floodway	1.4	0.2	0.0	0.2
Within CHHA (VE or V Zone)	7.8	0.9	0.5	0.4

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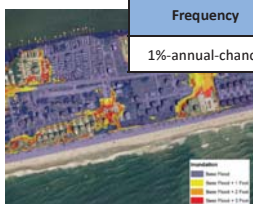


Coastal Updates to Flood Risk Report



- Captures and reports the additional areas that would be inundated, based on 1, 2, or 3 feet of increased inundation

Flood Event Frequency	Area of Additional Inundation (mi ²)				
	1-ft Increase	2-ft Increase		3-ft Increase	
		Newly Inundated	Total	Newly Inundated	Total
1%-annual-chance	0.6	0.8	1.4	1.2	2.6



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Coastal Updates to Flood Risk Report



- Captures and reports the total area and number of structures (if available) within each of the 3 different levels of wave hazard (High, Moderate, and Minimal)

Coastal Wave Hazard Severity	Total Area (mi ²)	# of Structures
High	0.4	15
Moderate	2.6	187
Minimal	3.3	296



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Non-Regulatory Product Usage and Action



- Risk MAP Products and Datasets help communities make good decisions to reduce flood risk:
 - Hazard Mitigation Planning
 - Floodplain Management and Community Rating System
 - Community Comprehensive or General Planning
 - Community Investment - Capital Improvement Planning
 - Public Outreach
 - Hazard Mitigation Assistance Grant Application Prioritization and Support
 - Other Non-FEMA Grants to Reduce Flood Risk
 - Response and Recovery Planning
- Mitigation Action Form

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How does this apply to my community?

- NFIP Compliance
- Local impacts of coastal study

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National Flood Insurance Program



- Allows property owners to purchase flood insurance at reduced rates
- Community responsibilities
 - adopt and enforce compliant regulations
- FOCUS is in building the local floodplain management capability
- In Ohio, approximately 750 communities participate in the NFIP



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V Zones for Ohio?



- Ohio currently does not have V/VE Zones or Coastal A/AE Zones
- All Counties along Lake Erie (except Ottawa County) have recently updated regulations
- If coastal flood zones are added, all affected communities must update regulations to include coastal requirements.
 - ODNR will provide regulations assistance and technical support if/when coastal flood zones are added for Ohio.

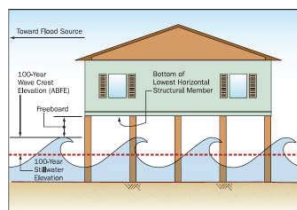
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Coastal Zones and NFIP Compliance



- Must meet minimum NFIP and community coastal requirements
- NFIP design and construction requirements are more stringent in V zones due to wave, debris, and erosion hazards in V zones
- Recommendations for exceeding the minimum NFIP requirements (Coastal A Zones)
 - Can obtain CRS credits for Coastal A Zone Requirements
- Resources Available



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Community Rating System (CRS)



- Flood insurance premium rates discounted to reward community actions that reduce flood losses, facilitate accurate insurance ratings, and promote the awareness of flood insurance
- 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/>

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Ohio CRS Communities



In Ohio, there are 14 CRS communities.

- Cities
 - Fairfield, Kettering, New Richmond, Obetz, Shelby, South Euclid & West Carrollton
- Villages
 - Delta, Orange and Ottawa
- Counties
 - Licking, Ottawa, Preble and Medina



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Coastal Resources



- **Coastal Erosion Area Maps**
 - Identify areas of anticipated recession based on historic recession rates
- **Lake Erie Shore Erosion Management Plan**
 - Provides regionally based erosion mitigation recommendations
- **Coastal Design Manual**
 - Provides detailed design guidance for engineers and surveyors (erosion control measures)

For more information visit:
www.ohiodnr.com/coastal

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Interactive Session A

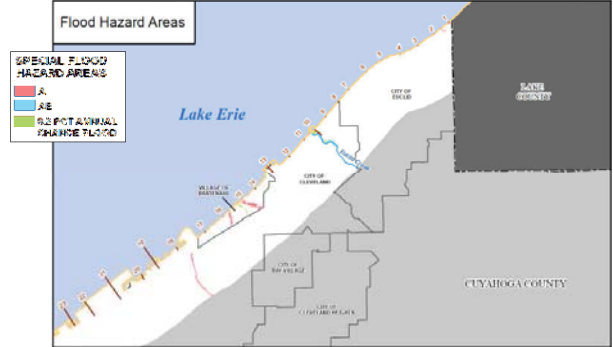
- View and Discuss Local Coastal Areas of Concern Using the Discovery Map and Community Risk MAP Questionnaire

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Cuyahoga County, OH Discovery Map – Flood Hazard Areas



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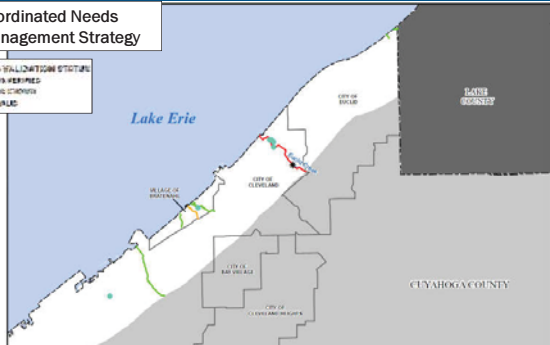
Cuyahoga County, OH Discovery Map – CNMS Status



Coordinated Needs Management Strategy

LEAKS WALL/COASTLINE STATUS

- IS REPAIRED
- IS CHANGING
- VALID



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Cuyahoga County, OH Discovery Map – AAL



Average Annualized Loss

CUYAHOGA COUNTY AAL DATA
Total Average Annualized Losses per Census Block

- \$1 - \$2,500
- \$2,501 - \$100,000
- \$100,001 - \$250,000
- \$250,001 - \$750,000
- \$750,001 - \$2,000,000



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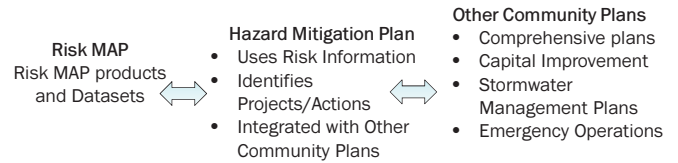


Hazard Mitigation

- Opportunities
- Grant Funding



Local Hazard Mitigation Plans



Mitigation Actions/Projects



Mitigation Actions

- Address specific **existing** assets (e.g., elevate critical facility, enlarge a culvert)
- Address **future** risks (e.g., update building codes)
- Based on local capabilities
 - Build on current strengths, ongoing efforts (add-on to stormwater management regulations)
 - Coordinate with Federal programs (e.g., NFIP, CRS)



Example Mitigation Actions



STRUCTURAL PROJECTS
Acquisition
Elevation
Retrofits
Drainage

PLANNING MECHANISMS
Zoning
Building Codes
Ordinances
Open Space Plan

EDUCATION & OUTREACH
Public Awareness
Outreach
Educational programs

NATURAL RESOURCE PROTECTION
Stream and wetland restoration
Erosion control



Cuyahoga County Mitigation Activities

- Modify infrastructure to handle bigger storm events
- Evaluate and rank infrastructure problems
- Determine areas of vulnerability for both utilities and roadways and seek funding to permanently mitigate
- Identify those geographic areas with undersized infrastructure and increase the pipe size
- Analyze/monitor coastal flooding in relation to areas of significant coastal erosion



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)
 - Severe Repetitive Loss (SRL)
- **State**
 - Clean Ohio
 - State General Revenue Funds
 - Community Development Block Grants
- **Local**
 - Watershed Conservancy Districts
 - Local taxes
 - Storm water utilities



Ohio Mitigation Best Practices



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Hazard Mitigation Resources, Strategies & Actions



- The right action (or mix of actions) will be based on recent community experiences and level of complexity in existing infrastructure
 - Public Works
 - Building Standards
 - Community Planning and HM Plan Update / Integration processes
 - Communication Processes, GIS, etc.
- Get the right people to the table: Integrated vs. Discipline-specific
- Document ideas and actions through the FEMA Mitigation Action Form

Land Use Ordinances Zoning, Setbacks, Floodplain Management, etc.	Local Building Codes IBC, IRC, Local Regulations, etc.	Mitigation Projects Acquisition, Elevation, Floodproofing, etc.	Community Identified Mitigation Programs	Management Best Practices Integration of natural hazards into other planning mechanisms
---	--	---	---	---

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Interactive Session B

- Discuss Mitigation Action Opportunities and Introduce the Mitigation Action Form/SHARPP

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Capturing and Tracking Mitigation Actions



Mitigation Action Form

Mitigation Action Information

4. Jurisdiction Name(s) Please provide the full name of the jurisdiction where the Mitigation Action applies, e.g., City of Boulder, CO.

5. Mitigation Activity Name The Mitigation Activity Name should be concise yet descriptive. For example, Flood acquisition projects along south side of Main St.

6. Mitigation Action Status Please check the appropriate box. The Mitigation Action Status defines the current stage of the action. For example, a "Stalled" status suggests that the action has been stopped or funded with intentions to move to the "Planned" and advance toward "Completed".

Identified Stalled Progress Completed

7. Mitigation Action Source Please check the appropriate box. The Mitigation Action Source defines the source(s) that identified or initiated the action or changing its status.

RiskMAP Review Comprehensive Land Use Plan Local Mitigation Plan Other (Specify)

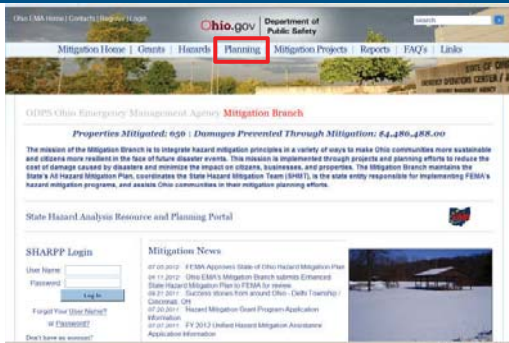
Flood Insurance Capital Improvement Plan Other (Specify)

If this Mitigation Action was identified during the RiskMAP process, please indicate the name of the RiskMAP Project.

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SHARPP - State Hazard Analysis, Resource and Planning Portal



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Area Of Mitigation Interest (AOMI) in SHARPP




- Each AOMI point contains data about the area of interest




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AOMI 

Select an option from the dropdown.



AOMI Information


+ Add new AOMI

Getting Started
To get started, zoom to the location of the Mitigation Interest. Then, click on "Add new AOMI" to place a point on the specific location.

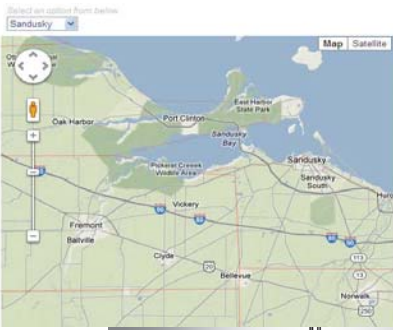
Color	Type
■	Other Flood Risk Areas (23)
■	Under Capacity Culvert or Bridge Openings (10)

MITIGATION INTEREST **MITIGATION ACTION** **MITIGATION PROJECT** **MITIGATION SUCCESS**

AOMI Tool **Plan Module** **SHARPP Project Module** **Measures**

AOMI 

Select an option from the dropdown.



AOMI Information

+ Add new AOMI

Getting Started
To get started, zoom to the location of the Mitigation Interest. Then, click on "Add new AOMI" to place a point on the specific location.

+ Submit AOMI

How to submit an AOMI:

1. Place a point on the map. Either zoom to where you'd like or enter an address. You can drag your point until you're happy with its location.
2. Click "Submit New AOMI", which will enter the AOMI form.
3. Enter your information and data about the location.
4. Repeat as necessary.

MITIGATION INTEREST **MITIGATION ACTION** **MITIGATION PROJECT** **MITIGATION SUCCESS**

AOMI Tool **Plan Module** **SHARPP Project Module** **Measures**

AOMI 

Personal Information

First Name: (Ex: Michael)
 Last Name: (Ex: Smith)
 Email: (Ex: msmith@fema.com)
 Organization: (Ex: Ohio EMA)

AOMI-Specific Information

AOMI Title
Please enter a useful and descriptive title. Ex: Main Street Culvert Under Capacity

Hazard Faced
Select the primary hazard causing the problem.
- Select -

Flood Hazard Classification
Select the class of the mitigation interest.
- Select -


Specific Type of Mitigation Interest
Select the type of the mitigation interest.
- Select -

AOMI Comments or Description
Please give some meaningful information about this area and the problems facing it.

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MITIGATION INTEREST **MITIGATION ACTION** **MITIGATION PROJECT** **MITIGATION SUCCESS**

AOMI Tool **Plan Module** **SHARPP Project Module** **Measures**

AOMI 

SHARPP Mitigation Action

Go Back to Plan

Merge County, Ohio

Title: Please provide more info

Priority: 1

Subtype: New

Project Lead:

Start Date:

End Date:

Specific: Please provide more information on the details of the project. This includes a description of the project, the location, and the expected benefits. Please provide a detailed description of the project, including the location, the expected benefits, and the expected costs. Please provide a detailed description of the project, including the location, the expected benefits, and the expected costs.

Location:

Map:

Attachments:


Mitigation Address:

Open Mitigation Action form to fill out information to add to the Plan

RiskMAP

MITIGATION INTEREST **MITIGATION ACTION** **MITIGATION PROJECT** **MITIGATION SUCCESS**

AOMI Tool **Plan Module** **SHARPP Project Module** **Measures**

AOMI 

SHARPP Plans

Plan: **HERA Summary** **Mitigation Actions**

AOMI is now a Mitigation Action

Priority: 1 Mitigation Actions

Find an Address:

Jump to a County:

AOMI Information

Search:

Results:

RiskMAP

MITIGATION INTEREST **MITIGATION ACTION** **MITIGATION PROJECT** **MITIGATION SUCCESS**

AOMI Tool **Plan Module** **SHARPP Project Module** **Measures**

FEMA 

Questions?

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Results from Interactive Sessions



- Review and Clarify Communication, Planning, and Compliance Needs
 - Local coastal areas of concern
 - Existing local coastal data
 - Mitigation Action opportunities
 - Mitigation Action form
 - SHARPP

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Next Steps



- Communities will:
 - Provide all data and Mitigation Action Forms to RAMPP by August 31, 2012
- RAMPP/FEMA will:
 - Assess data and information provided
 - Email summary of today's Discovery Meeting to you within one month
 - Prepare final Discovery Maps and Discovery Report
 - Follow-up regarding Risk MAP Project

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Optional Interactive Stations



- Draft Transect Map Station
 - View draft transect locations and oblique imagery in data viewer
 - Discuss draft transect locations with technical staff
- Mitigation Resources, Strategies, and Actions Station
 - Talk with FEMA and State representatives about areas of concern and potential mitigation actions to help reduce risk
 - Fill out Mitigation Action Form/SHARPP

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Contacts



FEMA

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michael.hanke@fema.dhs.gov

Ken Hinterlong
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RAMPP

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amelia.vincent@URS.com

State of Ohio

Katherine Skalak
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Josh Sigmon
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Deborah Beck
deborah.beck@dnr.state.oh.us

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Attachment D-3

Sign-In Sheets

Cuyahoga County, Ohio Discovery Meeting Sign-In Sheet

August 2, 2012

Please sign in and confirm your contact information, making changes below as needed.

Organization	Name	Address	St, City, ZIP	Phone	Email	Initials
Cuyahoga County Office of Emergency Management	Mark Christie	310 West Lakeside Avenue, Suite 795-A	Cleveland, OH 44113	216-443-5683	MChristie@cuyahogacounty.us	<i>MC</i>
City of Cleveland	Jim Willson	205 W. St. Clair Cleveland 44113		216-644-2652	jwillson@city.cleveland.oh.us	<i>JW</i>
City of Bay Village	Dan Galli	350 Dover Center Road	Bay Village, OH 44140	440-899-3400	DGalli@cityofbayvillage.com	
Cuyahoga County Planning Commission	Richard Sicha					
Ohio DNR/OSNR FPM	Randy Keitz	2207 Reiser Ave SE New Philadelphia OH 44663	New Philadelphia OH 44663	330-339-2207	randy.keitz@dnr.state.oh.us	
CITY OF Rocky RIVER	Ron GOTTSCHALK	21012 HIGHLAND BLVD	Rocky River OH 44116	440-331-0600	RockyRiver@RRCITY.COM	<i>RG</i>
Cuyahoga County Public Works	Brian Driscoll	2100 Superior Viaduct	Cleveland, OH 44130	216-348-3934	bdriscoll@cuyahogacounty.us	<i>BD</i>
FEMA	Michael Hanks	Chicago IL		312-408-5364	michael.hanks@fema.ohs.gov	<i>MJH</i>
CITY OF LAKEWOOD	William Corrigan	12650 DETROIT AVE	LAKEWOOD OH 44107	216-529-6807	WILLIAM.CORRIGAN@LAKEWOOD.OH.NET	<i>WC</i>
ODNR	Ben Lilly Katherine Stalder	2045 Morse Rd	Columbus OH 43229			

Cuyahoga County, Ohio Discovery Meeting Sign-In Sheet

August 2, 2012

Please sign in and confirm your contact information, making changes below as needed.

Organization	Name	Address	St, City, ZIP	Phone	Email	Initials
CITY OF BAY VILWAGE	CURTIS KPAKOWSKI	350 DEVEL CENTER	BAY VILWAGE	(440) 899-3422	CKPAKOWSKI@CITYOFBAYVILWAGE.COM	
RAMPP	Taylor Asher	12920 Milestone Center Pr. Suite 156	German town, MD 20876	301-820-3474	taylor.asher@urs.com	TGA
OHIO EMA	Carla Marable	2855 W. Dublin Granville	Columbus, OH 43068	614-799-3536	camarable@dps.state.oh.us	CM
OHIO EMA	SIGNON JOSH	" "	" "	614-799-3531	JSIGNON@DPS.STATE.OH.US	JS
RAMPP	Amelia Vincent	12420 Milestone Center Dr. Suite 150	German town, MD 20876	301-820-3186	amelia.vincent@urs.com	AV
RAMPP	Ann Terranova	430 National Business Parkway Suite 400	Annapolis Junction, MD 20701	443-737-1300	ann.terranova@urs.com	

Attachment D-4

Meeting Summary



Great Lakes Coastal Flood Study (www.greatlakescoast.org)
Cuyahoga County, OH – Lake Erie Discovery Meeting
August 2, 2012 9:30 am to 11:30 am
Bay Village Branch of the Cuyahoga County Public Library
502 Cahoon Road, Bay Village, OH 44140

Discussion Highlights

- 1. Introductions and Welcome (see attached sign-in sheet)**
- 2. Purpose and Intent of Today's Meeting (see attached slides)**
- 3. Coastal Mapping and Flood Risk Topics (see attached slides)**
- 4. NFIP Compliance (see attached slides)**
- 5. Interactive Session A: Discuss Local Coastal Areas of Concern Using the Discovery Map**
 - Mr. Mark Christie with the Cuyahoga County Office of Emergency Management noted that the communities of Fairview Park and Westlake do not experience coastal flooding and could be removed from the list of Lake Erie Discovery communities.
 - Ms. Amelia Vincent with Risk Assessment, Mapping, and Planning Partners (RAMPP) added that she was contacted by an official from Fairview Park prior to the meeting who said that their community did not experience coastal flooding and would not attend the meeting. RAMPP will remove both of these communities from the draft Discovery report and map.
 - Mr. Jim Willson with the City of Cleveland noted that his community experiences flooding from runoff from Doan Creek. Mr. Willson said that it would be helpful to know the percentage of county land or political boundaries that is covered by the transect layout and is considered a part of the coastal Discovery area.
- 6. Hazard Mitigation (see attached slides)**
- 7. Interactive Session B: Mitigation Action Opportunities**
 - Mr. Christie stated that streambank erosion is more of a concern than coastal flooding in Cuyahoga County and that the Hazard Mitigation Plan is current.
 - Mr. Mike Hanke with FEMA Region V pointed out that Columbiana County had a high level of mitigation actions (209) identified during outreach. He would like to see the Mitigation Action process that was introduced at this Discovery meeting replicate the success of Columbiana County. Mr. Hanke asked for participants' help in identifying mitigation areas of interest. Information provided by communities on the Mitigation Action Form will help the study team focus efforts, resources and datasets.
- 8. Close.** The Lake Erie Discovery meeting was adjourned at approximately 11:20 am.



These notes are an interpretation of discussions held. Please provide any additions or corrections to the originator within 5 days of the date signed; otherwise they will be assumed correct as written.

Prepared by: Amelia Vincent and Ann Terranova

Date: September 13, 2012

cc: Distribution/Participants

Attachments:

Discovery Meeting Sign-in Sheet

Slide Presentation

Attachment D-5
Meeting Evaluation Forms

Cuyahoga County, OH Discovery Meeting Evaluation Form

August 2, 2012

Please check the box that indicates your level of agreement with the following statements. Please provide comments for Strongly Agree, Strongly Disagree, and Not Applicable responses.

Statement	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Not Applicable
-----------	----------------	----------------	----------------------------	-------------------	-------------------	----------------

As a Result of this Meeting:

I have a better understanding of the Great Lakes Coastal Flood Study and the Risk MAP Program.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I have a better understanding of the coastal analysis, modeling, and mapping methods used for this project.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I have a better understanding of my organization's role in the project and future activities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I am better prepared to explain the Great Lakes Coastal Flood Study, including how it impacts my organization or community.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Please provide your thoughts and ideas of ways to improve on future offerings of the Great Lakes Coastal Flood Study Discovery Meeting:

Statement	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Not Applicable
-----------	----------------	----------------	----------------------------	-------------------	-------------------	----------------

Meeting Logistics:

The location of the meeting was convenient for me.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

The time of the meeting was convenient for me.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

The information presented was easy to understand.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I preferred this meeting's format to others I've attended.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

The handouts provided at this meeting were helpful (if applicable).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

Your contact information (Optional):

Name: CURTIS KRAKOWSKI		
Organization: BAY VILLAGE, OHIO		
City:	County:	State:
E-mail:		Phone:

Cuyahoga County, OH Discovery Meeting Evaluation Form

August 2, 2012

Please check the box that indicates your level of agreement with the following statements. Please provide comments for Strongly Agree, Strongly Disagree, and Not Applicable responses.

Statement	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Not Applicable
-----------	----------------	----------------	----------------------------	-------------------	-------------------	----------------

As a Result of this Meeting:

I have a better understanding of the Great Lakes Coastal Flood Study and the Risk MAP Program.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments: _____

I have a better understanding of the coastal analysis, modeling, and mapping methods used for this project.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments: _____

I have a better understanding of my organization's role in the project and future activities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I am better prepared to explain the Great Lakes Coastal Flood Study, including how it impacts my organization or community.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Please provide your thoughts and ideas of ways to improve on future offerings of the Great Lakes Coastal Flood Study Discovery Meeting:

Statement	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Not Applicable
-----------	----------------	----------------	----------------------------	-------------------	-------------------	----------------

Meeting Logistics:

The location of the meeting was convenient for me.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments: _____

The time of the meeting was convenient for me.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments: _____

The information presented was easy to understand.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I preferred this meeting's format to others I've attended.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

The handouts provided at this meeting were helpful (if applicable).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

Your contact information (Optional):

Name: <i>RON GOTESCHALK</i>			
Organization: <i>CITY OF ROCKY RIVER</i>			
City: <i>Rocky River</i>	County: <i>CUYAHOGA</i>	State: <i>OH</i>	
E-mail: <i>ROCKYRIVER@RRCITY.COM</i>		Phone: <i>440-331-0600</i>	

Cuyahoga County, OH Discovery Meeting Evaluation Form

August 2, 2012

Please check the box that indicates your level of agreement with the following statements. Please provide comments for Strongly Agree, Strongly Disagree, and Not Applicable responses.

Statement	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Not Applicable
-----------	----------------	----------------	----------------------------	-------------------	-------------------	----------------

As a Result of this Meeting:

I have a better understanding of the Great Lakes Coastal Flood Study and the Risk MAP Program.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I have a better understanding of the coastal analysis, modeling, and mapping methods used for this project.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I have a better understanding of my organization's role in the project and future activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I am better prepared to explain the Great Lakes Coastal Flood Study, including how it impacts my organization or community.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Please provide your thoughts and ideas of ways to improve on future offerings of the Great Lakes Coastal Flood Study Discovery Meeting:

Statement	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Not Applicable
-----------	----------------	----------------	----------------------------	-------------------	-------------------	----------------

Meeting Logistics:

The location of the meeting was convenient for me.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

The time of the meeting was convenient for me.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

The information presented was easy to understand.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

I preferred this meeting's format to others I've attended.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

The handouts provided at this meeting were helpful (if applicable).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

Comments: I haven't had a chance to look at the handouts yet

Your contact information (Optional):

Name: <u>Brian Driscoll</u>		
Organization: <u>Cuyahoga County Department of Public Works</u>		
City: _____	County: <u>Cuyahoga</u>	State: <u>OH</u>
E-mail: <u>bdriscoll@cuyahogacounty.us</u>		Phone: <u>216-348-3934</u>

Cuyahoga County, OH Discovery Meeting Evaluation Form

August 2, 2012

Please check the box that indicates your level of agreement with the following statements. Please provide comments for Strongly Agree, Strongly Disagree, and Not Applicable responses.

Statement	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Not Applicable
-----------	----------------	----------------	----------------------------	-------------------	-------------------	----------------

As a Result of this Meeting:

I have a better understanding of the Great Lakes Coastal Flood Study and the Risk MAP Program.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I have a better understanding of the coastal analysis, modeling, and mapping methods used for this project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I have a better understanding of my organization's role in the project and future activities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I am better prepared to explain the Great Lakes Coastal Flood Study, including how it impacts my organization or community.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Please provide your thoughts and ideas of ways to improve on future offerings of the Great Lakes Coastal Flood Study Discovery Meeting:

Statement	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Not Applicable
-----------	----------------	----------------	----------------------------	-------------------	-------------------	----------------

Meeting Logistics:

The location of the meeting was convenient for me.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

The time of the meeting was convenient for me.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

The information presented was easy to understand.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

I preferred this meeting's format to others I've attended.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

The handouts provided at this meeting were helpful (if applicable).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

Your contact information (Optional):

Name:	
Organization:	
City:	County:
State:	
E-mail:	Phone:

Cuyahoga County, OH Discovery Meeting Evaluation Form

August 2, 2012

Please check the box that indicates your level of agreement with the following statements. Please provide comments for Strongly Agree, Strongly Disagree, and Not Applicable responses.

Statement	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Not Applicable
-----------	----------------	----------------	----------------------------	-------------------	-------------------	----------------

As a Result of this Meeting:

I have a better understanding of the Great Lakes Coastal Flood Study and the Risk MAP Program.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I have a better understanding of the coastal analysis, modeling, and mapping methods used for this project.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I have a better understanding of my organization's role in the project and future activities.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Comments: _____

I am better prepared to explain the Great Lakes Coastal Flood Study, including how it impacts my organization or community.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Please provide your thoughts and ideas of ways to improve on future offerings of the Great Lakes Coastal Flood Study Discovery Meeting:

Statement	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Not Applicable
-----------	----------------	----------------	----------------------------	-------------------	-------------------	----------------

Meeting Logistics:

The location of the meeting was convenient for me.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

The time of the meeting was convenient for me.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

The information presented was easy to understand.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

I preferred this meeting's format to others I've attended.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

The handouts provided at this meeting were helpful (if applicable).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comments: _____					

Your contact information (Optional):

Name:						
Organization:						
City:		County:			State:	
E-mail:				Phone:		

Attachment D-6
Mitigation Action Form

Mitigation Action Form



Purpose and Help

This form is meant to assist the collection of Mitigation Actions.

Online Mitigation Action Collection:

<http://fema.starr-team.com>

State Hazard Mitigation Officers Directory:

<http://www.fema.gov/about/contact/shmo.shtm>

Your Information

Please enter the primary contact associated with this Mitigation Action.

1. Full Name *Required*

Please provide your full name, e.g.: Michael Smith

2. Email Address *Required*

Please provide your email address, e.g.: example@example.com

3. Your Title and Organization *Required*

Please provide your relevant title and organization as it applies to this form, e.g.: Floodplain Administrator for City of Boulder, Colorado.

Mitigation Action Information

Below please enter information as it directly applies to the mitigation action you are discussing.

4. Jurisdiction Name(s) *Required*

Please provide the full name of the jurisdiction where the Mitigation Action applies, e.g.: City of Boulder, CO

5. Mitigation Activity Name *Required*

The Mitigation Activity Name should be concise yet descriptive. For example, flood acquisition projects along south side of Main St.

6. Mitigation Action Status *Required*

Please check the appropriate box. The Mitigation Action Status defines the current stage of the action. For example, a 'Scoped' status suggests that the action has been scoped or funded with intentions to move to 'In Progress' and advance toward 'Completion'.

Identified Scoped In Progress Completed

7. Mitigation Action Source *Required*

Please check the appropriate box. The Mitigation Action Source defines the source/process that identified or refined the action or changing its status.

Risk MAP Process Capital Improvement Plan
 Local Mitigation Plan Comprehensive Plan
 HMA Database Other _____

If this Mitigation Action was identified during the RiskMAP Process, please indicate the name of the RiskMAP Project.

8. Mitigation Plan Name

If known, please provide existing plan name. The Mitigation Plan Name refers to the local Hazard Mitigation Plan adopted by this jurisdiction(s). For example, Winnebago County, IL Multi-Jurisdictional Hazard Mitigation Plan.



← Scan this image with your smartphone to visit the Mitigation Action Collection website. This site is in beta and will change prior to implementation.

9. Hazard Type *Required*

Select the main type of hazard affected by this Mitigation Action. Check/circle only one.

- | | | |
|--|---------------------------------------|---------------------------------------|
| <input type="checkbox"/> Coastal Erosion | <input type="checkbox"/> Hurricane | <input type="checkbox"/> Wildfire |
| <input type="checkbox"/> Dam/Levee Failure | <input type="checkbox"/> Landslide | <input type="checkbox"/> Wind |
| <input type="checkbox"/> Drought | <input type="checkbox"/> Thunderstorm | <input type="checkbox"/> Winter Storm |
| <input type="checkbox"/> Earthquake | <input type="checkbox"/> Tornado | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Flood | <input type="checkbox"/> Tsunami | |

10. Mitigation Category *Required*

Select the type of Mitigation effort being undertaken. Check/circle only one.

- | | |
|---|--|
| <input type="checkbox"/> Building Code | <input type="checkbox"/> Management Best Practices |
| <input type="checkbox"/> Community Identified Program | <input type="checkbox"/> Mitigation Project |
| <input type="checkbox"/> Land Use Ordinance | <input type="checkbox"/> Other _____ |

11. Category Type and Subtype *Required if Applicable. See Part B: Reference Sheet*

Please see Part B, Reference Sheet for applicable Category types and subtypes. Thank you for your patience in filling out this form. More complete and accurate data helps FEMA be more efficient with time and dollars.

Type: _____ Subtype: _____

12. Mitigation Action Commitment *Required*

Please indicate the level of commitment associated with this Mitigation Action. Check/circle only one. The Mitigation Commitment seeks to clarify if the action is a new activity for the community as opposed to maintaining or strengthening something the community is already supporting. For example, a community may seek to "Strengthen Existing" flood ordinances by adopting higher freeboard standards.

- Add New
- Strengthen Existing
- Maintain Existing

13. Responsible Agency *Required*

Please indicate the Agency that will be responsible for this Mitigation Action. Check/circle only one.

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Building Code | <input type="checkbox"/> Planning |
| <input type="checkbox"/> Community Development | <input type="checkbox"/> Public Works |
| <input type="checkbox"/> Emergency Management | <input type="checkbox"/> State DOT |
| <input type="checkbox"/> First Responders (Fire, Police, etc.) | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> National Guard | |

14. Estimated Project Span

Enter the estimated start and completion of the project. Please use the mm/dd/yyyy format.

Start: _____ Completion: _____

15. Estimated Cost

Enter the estimated cost for the project. The Estimated Cost for the mitigation activity does not have to be precise. Rather it could be used for general planning or budgeting purposes. Results may also allow officials associate actions with Hazard Mitigation Assistance resources where/when available.

\$ _____

16. Funding Source *Required*

Please indicate the expected funding source for the project. Check/circle only one.

- | | |
|---|---|
| <input type="checkbox"/> Community | <input type="checkbox"/> State |
| <input type="checkbox"/> County | <input type="checkbox"/> Other Federal Agency _____ |
| <input type="checkbox"/> FEMA | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Private | |
| <input type="checkbox"/> Property Owner | |

17. Funding Source Type *Required if Applicable. See Part B: Reference Sheet*

Please see Part B, Reference Sheet for applicable funding types.

18. Additional Details

If you would like to enter additional information please fill in the space below.



← Scan this image with your smartphone to visit the Mitigation Action Collection website. This site is in beta and will change prior to implementation.

Mitigation Action Form



Part B : Reference Sheet

Category Types and SubTypes

Use for answering Question 11.

Land Use

- Coastal Zone Management
- Conduct Safe Growth
- Floodplain Management
- Open Space Preservation
- Stormwater Management
- Subdivision Ordinance
- Zoning
- Other

Building Code

- Enforcement
- International Building Code
 - 2009
 - 2012
 - 2015
 - 2018
 - Other
- International Residential Code
 - 2009
 - 2012
 - 2015
 - 2018
 - Other
- Local or Enhanced Building Code
- Post Disaster Code Enforcement
- Other

Management Best Practices

- Integrate Natural Hazards into Planning Mechanisms
- Other

Mitigation Project

- Acquisition
- Elevation
 - Structure
 - Utilities
 - Other
- Flood Risk Management
 - Bridge
 - Culvert
 - Dams
 - Debris
 - Drainage Improvements
 - Jetties
 - Levees
 - Removal
 - Revetments
 - Seawalls
 - Other
- Forest or Vegetation Management
- Natural Systems Restoration
 - Beach
 - Dune Rehabilitation
 - Nourishment
 - Wetlands
 - Other
- Soil Stabilization or Erosion Control
- Retrofit
 - Non-Structural
 - Structural
 - Other
- Safe Room Construction
- Underground Utilities
- Other

Community Identified Program

- CRS
- Firewise
- NFIP
- StormReady
- Other



← Scan this image with your smartphone to visit the Mitigation Action Collection website. This site is in beta and will change prior to implementation.

Funding Types

Use for answering Question 17.

Other Community

- Bonds
- General Funds
- Tax Levies
- Other

FEMA

- FMA-Flood Mitigation Assistance
- HMGP-Hazard Mitigation Grant Program
- PA-Public Assistance
- RFC-Repetitive Flood Claims
- SRL-Severe Repetitive Loss
- Other

Other Federal Agency

- BIA
- DOT
- EPA
- HUD
- NOAA
- USGS
- Other

Private

Property Owner

State

Other

Attachment D-7
Community Risk MAP Questionnaire
Forms



Community Risk MAP Questionnaire

As a partner, local participation is a primary component of identifying potential Risk MAP (Mapping, Assessment, and Planning) needs. The questions below ask for specific information regarding your community to assist in the development of Risk MAP projects. Please answer as thorough as possible and provide your notes at the Discovery Meeting.

COMMUNITY: LAKEWOOD CONTACT: JOE BENO

Does your community have recent topographic data (e.g., LiDAR, DEM, etc.)?

UNLIKELY

Do you have local parcel or structural footprint data?

PARCEL - YES STRUCTURAL - NO

Have there been any additional flood studies performed recently, that are not incorporated in the current FIRM?

NO

Are there areas of flooding within your community that are not identified on current FIRM? If so, what and where is the flooding source?

NO

Has there been recent development causing change to flooding within your community (e.g., roads, filling, structural, etc.)?

NO

Are there repetitively flooded properties within your community? If so, where?

NO

Are there areas for potential mitigation projects in your community (e.g., severely flooded areas, properties, etc.)? If so, what and where?

ALONG THE ROCKY RIVER - EROSION HEAVY
IN AREAS W/NO SHEET PILE

Are there levees or other coastal flood control structures within your community?

NO

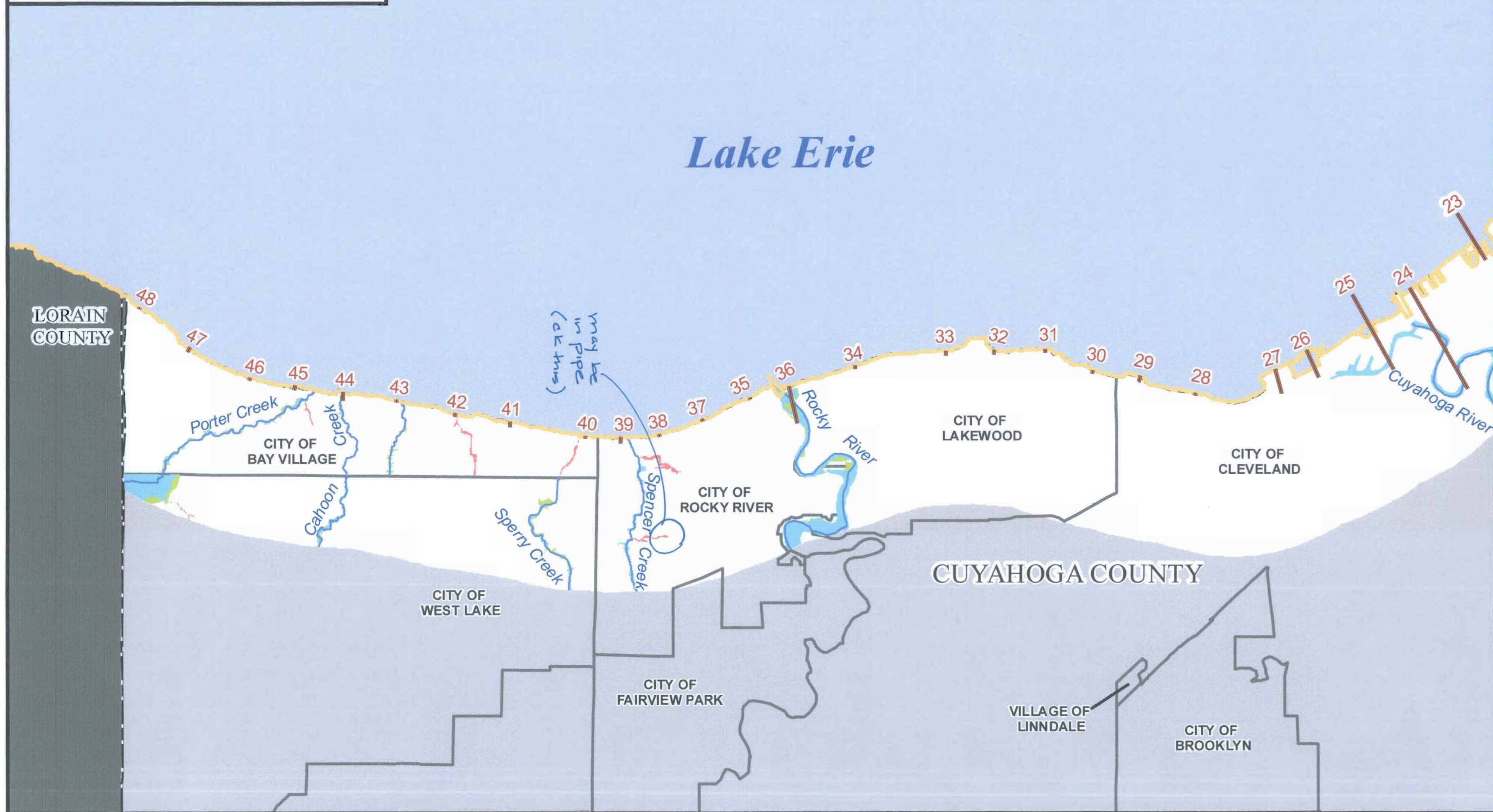
Are there plans in place for flood control projects (e.g., levees, groins, breakwaters, artificial headlands, etc.)? If so, what and where?

REVTMENT - WEST END OF LAKEWOOD PARK
WAITING ON LAND ACQUISITION FROM SISTERS
OF CHARITY

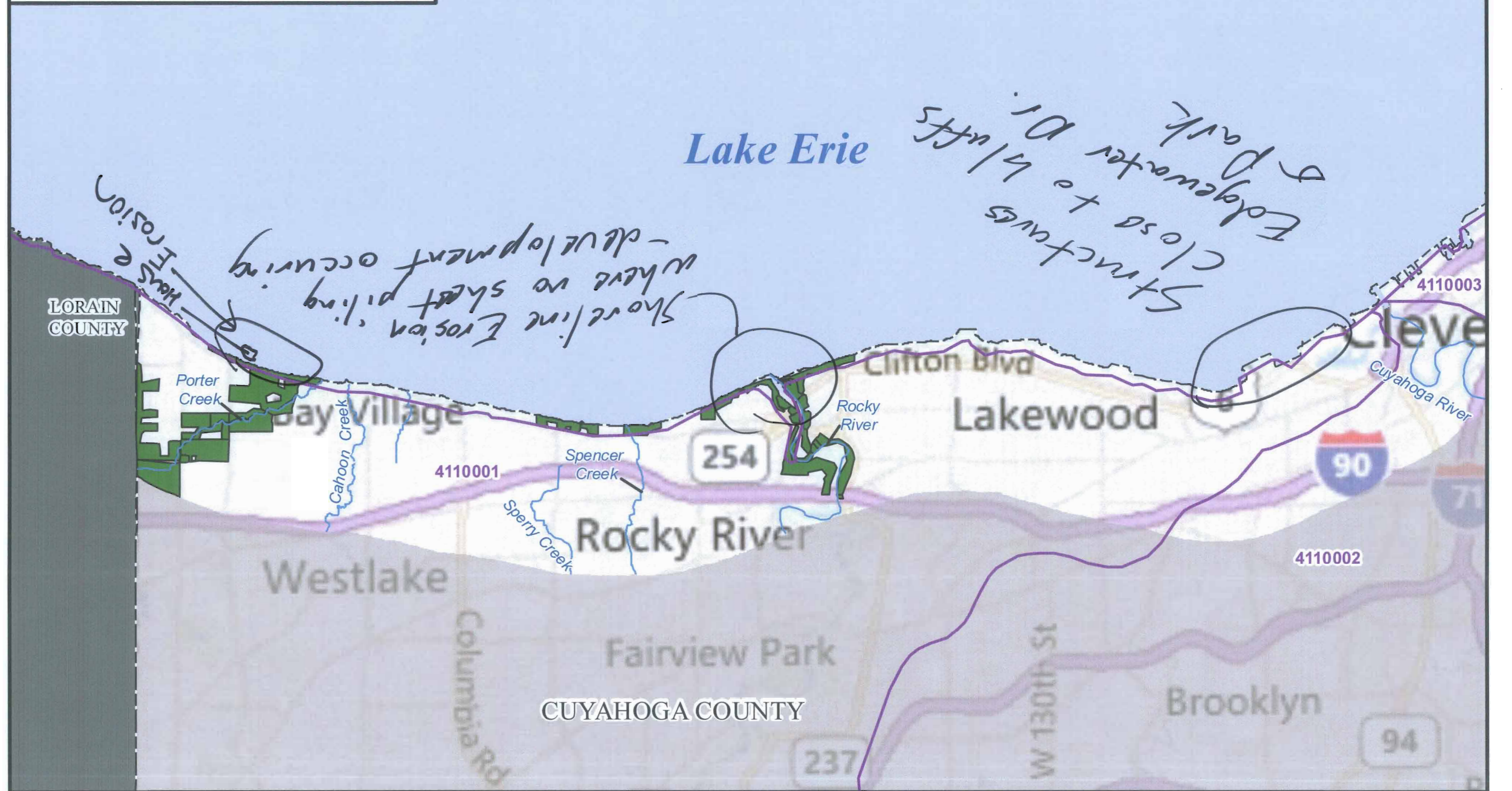
Are there any other issues that need to be addressed regarding coastal flooding?

Attachment D-8
Discovery Map Comments from
Meeting

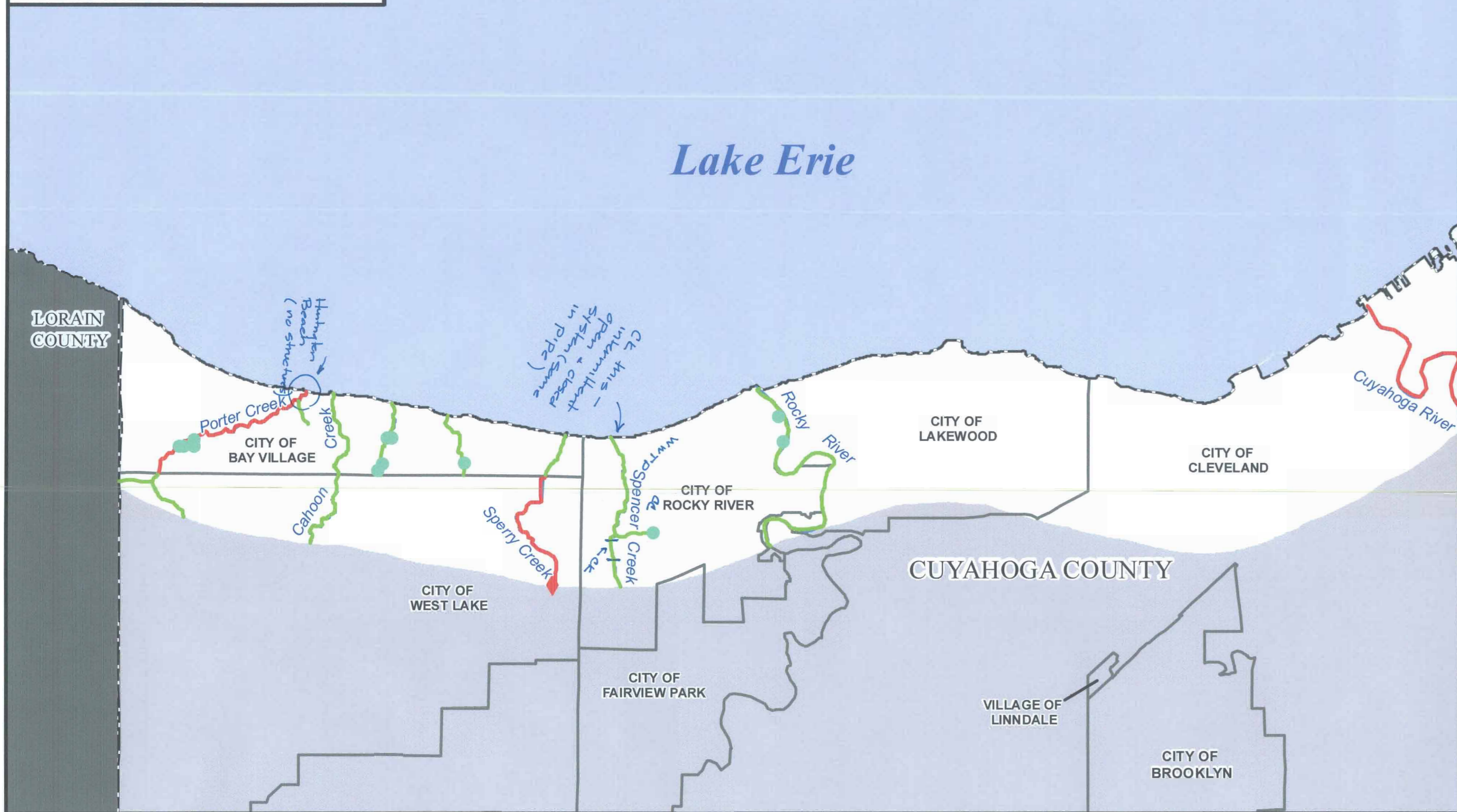
Flood Hazard Areas



Average Annualized Loss



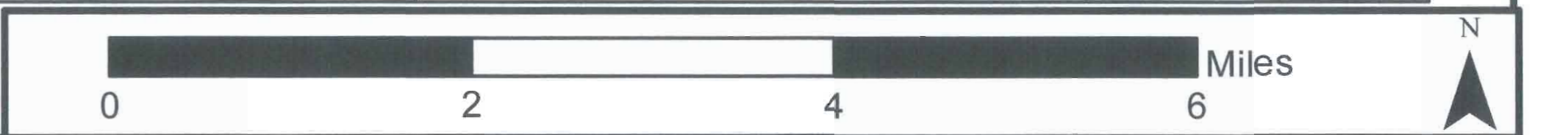
CNMS Status



NFIP Total Losses					
Community	Total Losses	Closed Losses	Open Losses	CWOP Losses	Total Payments (\$)
Cuyahoga County	8	7	0	1	97,151
Bay Village, City of	23	14	0	9	57,718
Bratenahl, Village of	N/A	N/A	N/A	N/A	N/A
Cleveland, City of	125	81	0	44	1,044,565
East Cleveland, City of	N/A	N/A	N/A	N/A	N/A
Euclid, City of	16	7	0	9	13,729
Fairview Park, City of	3	1	0	2	1,150
Lakewood, City of	40	32	0	8	535,446
Rocky River, City of	41	33	0	8	597,519
Westlake, City of	14	8	0	6	362,303

Declared Disasters					
State	Date	County	Type	Incident Type	Title
OH	07/15/1969	Cuyahoga	DR	Tomado	Tomadoes, Severe Storms, & Flooding
OH	07/19/1972	Cuyahoga	DR	Flood	Tropical Storm Agnes
OH	04/27/1973	Cuyahoga	DR	Flood	Severe Storms & Flooding
OH	09/11/1975	Cuyahoga	DR	Flood	Winds, Tornadoes, Heavy Rains, & Flooding
OH	06/10/1989	Cuyahoga	DR	Flood	Severe Storms & Flooding
OH	08/04/1992	Cuyahoga	DR	Severe Storms	Severe Storms, Tornadoes, & Flooding
OH	08/01/2003	Cuyahoga	DR	Tomado	Tomadoes, Flooding, Severe Storms, & High Winds
OH	06/03/2004	Cuyahoga	DR	Severe Storms	Severe Storms & Flooding
OH	09/19/2004	Cuyahoga	DR	Severe Storms	Severe Storms & Flooding
OH	07/02/2006	Cuyahoga	DR	Severe Storms	Severe Storms, Tornadoes, Straight Line Winds, & Flooding

Hazard Mitigation Action			
Name of Hazard Mitigation Plan	Plan Approval Date	Plan Expiration Date	Identified Hazard Mitigation Action
Cuyahoga County - Countywide All Natural Hazards Mitigation Plan	06/21/2007	03/01/2012	Evaluate installing elevation markers or gates related to high hazard areas. Develop debris management program and plan. Modify infrastructure to handle bigger storm events. Determine areas of vulnerability for both utilities and roadways and seek funding to permanently mitigate.



MAP SYMBOLOGY

LEGEND		CUYAHOGA COUNTY AAL DATA		CNMS VALIDATION STATUS	
◆ Dams	* USGS Gages	Total Average Annualized Losses per Census Block		UNVERIFIED	VALID
● LOMCs	SPECIAL FLOOD HAZARD AREAS	Dark Green: \$1 - \$2,500	Light Green: \$2,501 - \$100,000	Red	Green
— Transects	A	Yellow: \$100,001 - \$250,000	Orange: \$250,001 - \$750,000	Orange	Orange
— Lake Erie Shoreline	AE	Light Orange: \$750,001 - \$2,000,000		Light Green	Light Green
□ HUC 8	0.2 PCT ANNUAL CHANCE FLOOD				
— Streams					
□ Discovery Area					
■ Surrounding Counties					
■ County Boundary					
□ Municipal Boundaries					

COASTAL STUDY LOCATOR



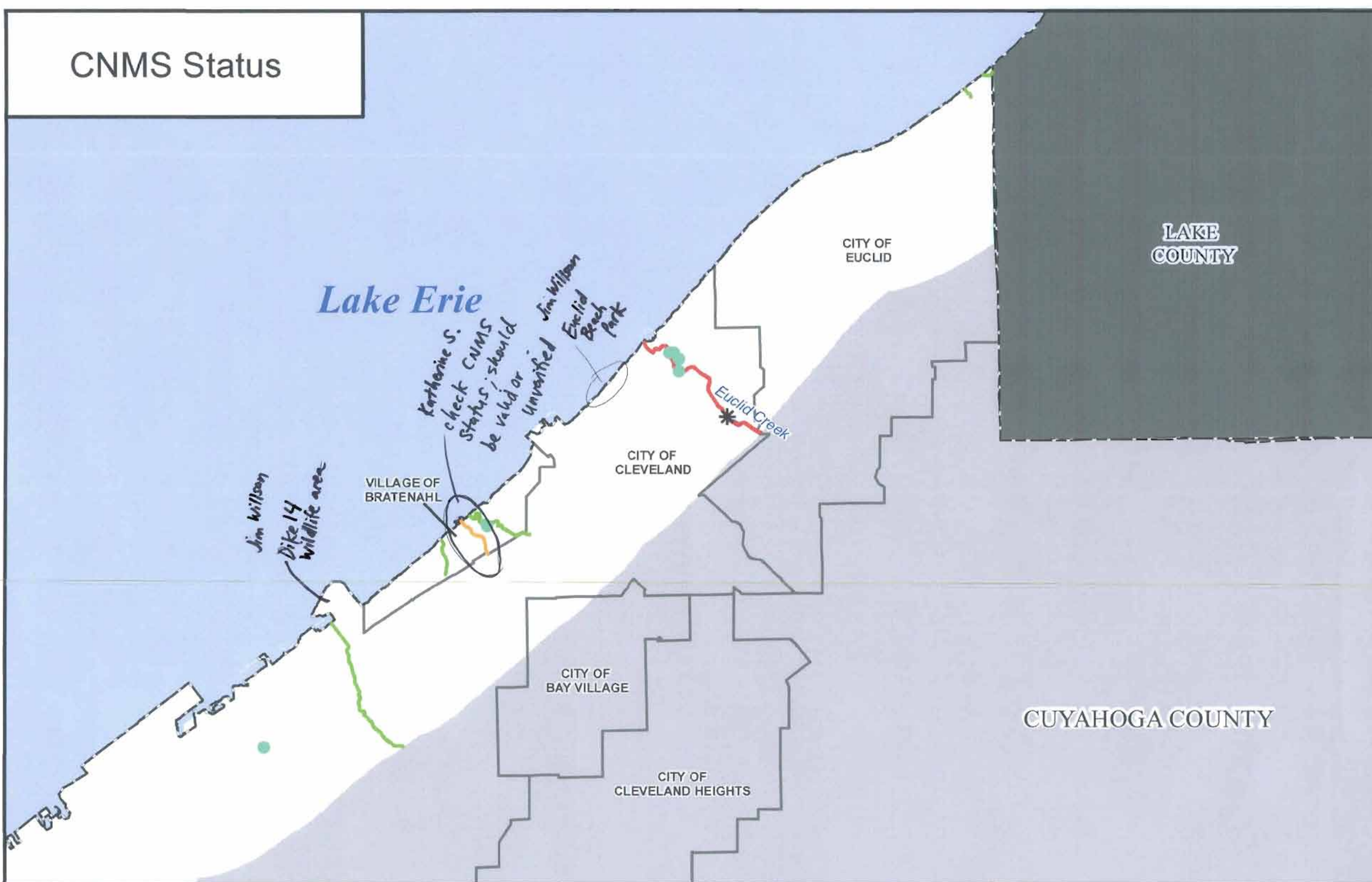
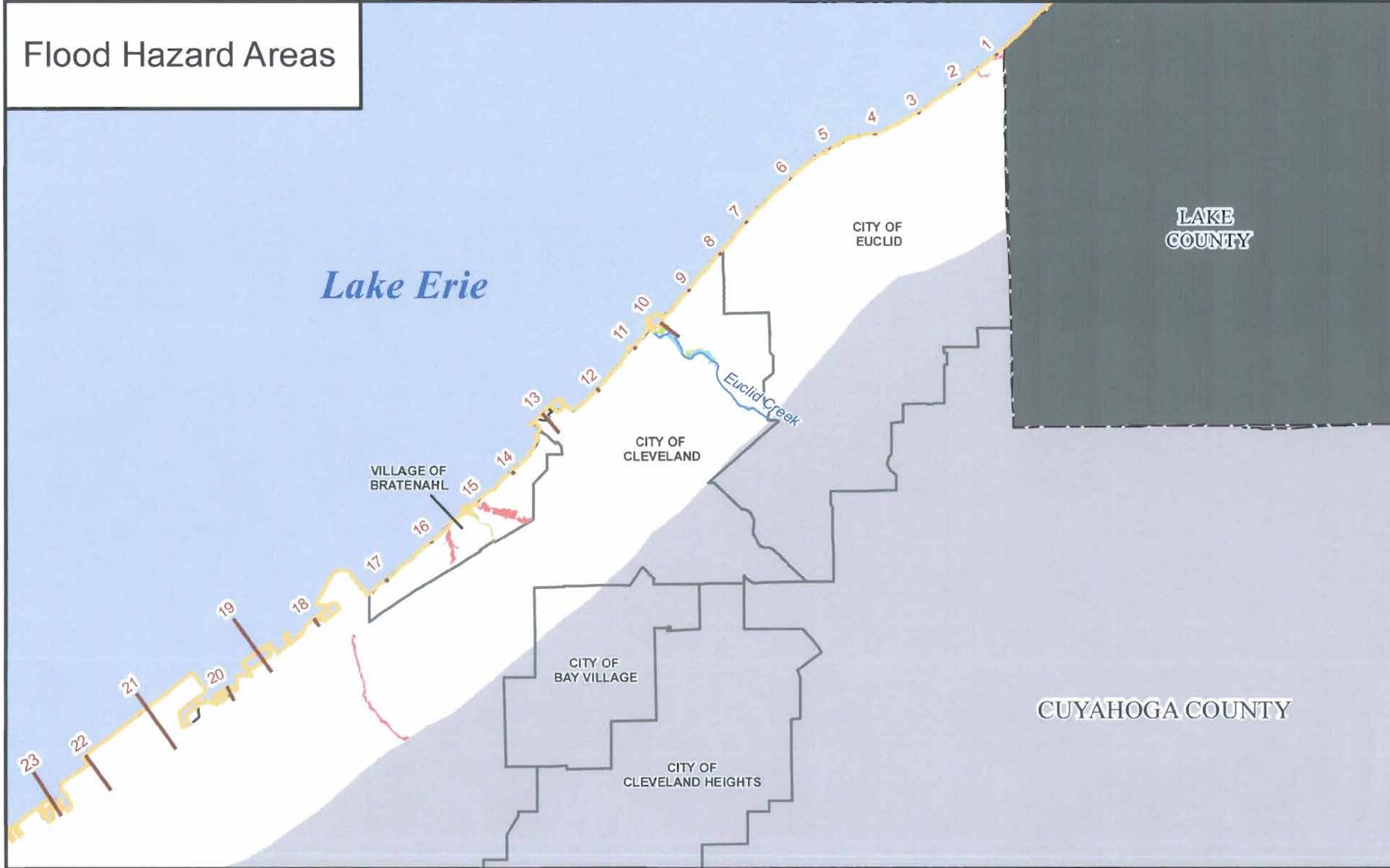
NATIONAL FLOOD INSURANCE PROGRAM Discovery Map

LAKE ERIE COASTAL STUDY Cuyahoga County, Ohio (Map 1 of 2)

DRAFT MAP



Discovery Meeting Date:
August 2, 2012



NFIP Total Losses					
Community	Total Losses	Closed Losses	Open Losses	CWOP Losses	Total Payments (\$)
Cuyahoga County	8	7	0	1	97,151
Bay Village, City of	23	14	0	9	57,718
Bratenahl, Village of	N/A	N/A	N/A	N/A	N/A
Cleveland, City of	125	81	0	44	1,044,565
East Cleveland, City of	N/A	N/A	N/A	N/A	N/A
Euclid, City of	16	7	0	9	13,729
Fairview Park, City of	3	1	0	2	1,150
Lakewood, City of	40	32	0	8	535,446
Rocky River, City of	41	33	0	8	597,519
Westlake, City of	14	8	0	6	362,303

Declared Disasters					
State	Date	County	Type	Incident Type	Title
OH	07/15/1969	Cuyahoga	DR	Tornado	Tornadoes, Severe Storms, & Flooding
OH	07/19/1972	Cuyahoga	DR	Flood	Tropical Storm Agnes
OH	04/27/1973	Cuyahoga	DR	Flood	Severe Storms & Flooding
OH	09/11/1975	Cuyahoga	DR	Flood	Winds, Tornadoes, Heavy Rains, & Flooding
OH	06/10/1989	Cuyahoga	DR	Flood	Severe Storms & Flooding
OH	08/04/1992	Cuyahoga	DR	Severe Storms	Severe Storms, Tornadoes, & Flooding
OH	08/01/2003	Cuyahoga	DR	Tornado	Tornadoes, Flooding, Severe Storms, & High Winds
OH	06/03/2004	Cuyahoga	DR	Severe Storms	Severe Storms & Flooding
OH	09/19/2004	Cuyahoga	DR	Severe Storms	Severe Storms & Flooding
OH	07/02/2006	Cuyahoga	DR	Severe Storms	Severe Storms, Tornadoes, Straight Line Winds, & Flooding

Name of Hazard Mitigation Plan	Plan Approval Date	Plan Expiration Date	Identified Hazard Mitigation Action
Cuyahoga County - Countywide All Natural Hazards Mitigation Plan	06/21/2007	03/01/2012	Evaluate installing elevation markers or gates related to high hazard areas. Develop debris management program and plan. Modify infrastructure to handle bigger storm events. Determine areas of vulnerability for both utilities and roadways and seek funding to permanently mitigate.



MAP SYMBOLOGY

LEGEND		CUYAHOGA COUNTY AAL DATA		CNMS VALIDATION STATUS	
◆ Dams	* USGS Gages	Total Average Annualized Losses per Census Block		— UNVERIFIED	— UNKNOWN
● LOMCs	SPECIAL FLOOD HAZARD AREAS	■ \$1 - \$2,500	■ \$2,501 - \$100,000	— VALID	
— Transects	■ A	■ \$100,001 - \$250,000	■ \$250,001 - \$750,000		
— Lake Erie Shoreline	■ AE	■ \$750,001 - \$2,000,000			
□ HUC 8	■ 0.2 PCT ANNUAL CHANCE FLOOD				
— Streams					
□ Discovery Area					
■ Surrounding Counties					
■ County Boundary					
□ Municipal Boundaries					

COASTAL STUDY LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM

Discovery Map

LAKE ERIE COASTAL STUDY

Cuyahoga County, Ohio (Map 2 of 2)

DRAFT MAP

Cuyahoga County, Euclid, City of, Fairview Park, City of, Bay Village, City of, Lakewood, City of, Bratenahl, Village of, Rocky River, City of, Cleveland, City of, Westlake, City of, East Cleveland, City of

RAMPP **FEMA**

Discovery Meeting Date: August 2, 2012