APPENDIX D
Delta, Schoolcraft, and Menominee County, Michigan
Discovery Report

Discovery Report

Great Lakes Coastal Flood Study

Lake Michigan

Delta County, Menominee County, and Schoolcraft County, Michigan

Individual Discovery Report

Report Number 01

February 2013

U.S. Department of Homeland Security
Federal Emergency Management Agency Region V
536 South Clark Street, 6th Floor
Chicago, Illinois 60605

SUBMITTED BY:

125 S. Wacker Drive, Suite 600
Chicago, IL 60606

Date Submitted: February 2013

Project Area Community List

This list includes all communities within the Project Area covered by this report 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.

Delta County	Menominee County	Schoolcraft County
Bay de Noc, Township of	Cedarville, Township of	Manistique, City of
Brampton, Township of	Ingallston, Township of	Thompson, Township of
Ensign, Township of	Menominee, City of	
Escanaba, Township of	Menominee, Township of	
Fairbanks, Township of		
Ford River, Township of		
Garden, Township of		
Garden, Village of		
Gladstone, Village of		
Masonville, Township of		
Nahma, Township of		
Wells, Township of		

Table of Contents

Table of Contents – continued

Table of Contents – continued

List of Figures

List of Tables

Attachments

Acronyms and Abbreviations

AAL	Average Annualized Loss
CAV	Community Assistance Visit
CBRS	Coastal Barrier Resources System
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
GLCRG	Great Lakes Coastal Restoration Grant
Hazus-MH	Multi-Hazard Risk Assessment and Loss Estimation Software Program
HWM	High Water Mark
HUC8	Hydrologic Unit Code 8
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
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
Risk MAP	Risk Mapping, Assessment, and Planning
SFHA	Special Flood Hazard Area
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

I. 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

The Discovery process involves coordination with Great Lakes stakeholders, data collection and analysis, community interviews, a Discovery Meeting with stakeholders affected by the study, and development of recommendations based on an analysis of data and information gathered throughout the process.

i. Great Lakes Coastal Flood Study

FEMA has initiated a coastal analysis and mapping study that may result in updated Flood Insurance Rate Maps (FIRMs) for coastal counties along the Great Lakes. The new coastal flood hazard analyses will utilize 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).

The Great Lakes Coastal Flood Study (GLCFS) will incorporate modern analysis of historic storm and high water events and provide for updated flood risk information serving United States communities having shoreline along the Great Lakes. The storm surge study is one of the most extensive coastal storm surge analyses to date, encompassing coastal floodplains in the eight States with coastlines on the Great Lakes.

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 due to 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 date of many flood insurance studies in the area, creating the need for an update that will reflect a more detailed and complete hazard determination.

The GLCFS 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, Association of State Floodplain Managers (ASFPM), State partners, and FEMA contractors will collaborate in updating the coastal methodology and flood maps, and create new flood risk products. FEMA manages the NFIP, which is the cornerstone of the national strategy for preparing communities for flood-related disasters.

ii. Purpose of Great Lakes Discovery

The Great Lakes Discovery process included data collection, information exchange between all governmental levels of stakeholders, spatial data presentation, cooperative discussion with stakeholders to better understand the Great Lakes area, and a collaborative approach on the project planning. The process allowed FEMA to continue to vet the Great Lakes coastal study methodologies with a large stakeholder group, to discuss local priorities and data, to discuss mitigation strategies and coastal issues, and to move towards a project that will successfully identify the risks associated with Great Lakes flooding.

This Discovery Report discusses the communities potentially affected by coastal flooding in Delta, Menominee, and Schoolcraft Counties, Michigan. This Discovery process helped FEMA to better identify the types of datasets or products that will be useful at the local level, especially as it relates to identifying new mitigation strategies and actions, and for use in local planning efforts. Products that may be available to communities as a result of the Great Lakes flood study include updated FIRMs and FISs, coastal flood risk products,

calibrated models for storm surge and wave analysis on each of the lakes, and accurate depictions of water level and wave response on each lake occurring during hundreds of actual events. The type of product a community receives is dependent not only on the coastal flood study analysis results, but also on the type of datasets, local and national, that are available.

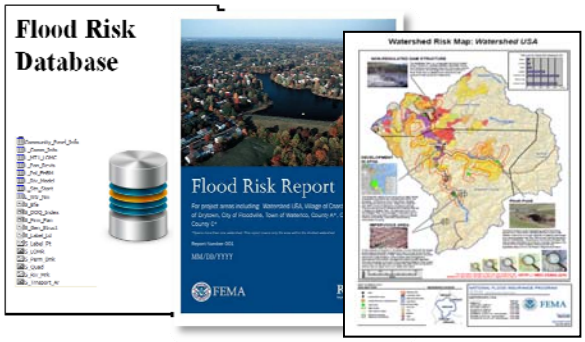
The following section describes the coastal flood risk products that a community may receive, as well as some products that are under development for the Great Lakes study areas.

iii. Coastal Flood Risk Products

As part of a Risk MAP project, FEMA will seek to 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 move forward with informed mitigation actions to reduce identified risk. Delivery of the products discussed below will depend on available data, results of coastal analysis, local partnerships, and fiscal year funding.

The three products are:

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

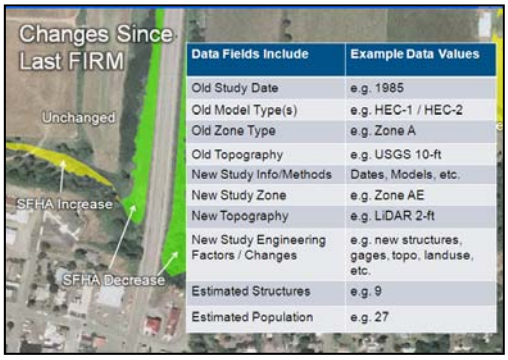


These products will summarize information captured in flood risk datasets that may be generated during a Risk MAP, or flood risk, study. The flood risk datasets could include regular and enhanced products. Standard flood risk datasets, also termed products, are described below.

- **Changes Since Last FIRM (CSLF)**

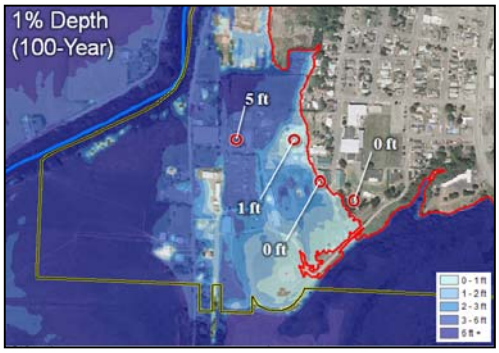
  The CSLFs serve the following purposes: Identifies areas and types of flood zone change:
  - Compares current effective (previous) with proposed (new) flood hazard mapping
  - Categorizes and quantifies flood zone changes

  Provide study/reach level rationale for changes including:



- Methodology and assumptions
- Changes of model inputs or parameters (also known as Contributing Engineering Factors)

- **Flood Depth and Analysis Grids (1-percent-annual-chance event only)**
  - Flood Depth and Analysis Grids (DAGs) will be created for the 1-percent-annual-chance event of the coastal engineering studies performed and as appropriate for the data. Wave runup areas may not be applicable.
  - Created using the regulatory mapping and associated zone breaks as input



- **Flood Risk Assessment (Hazus-MH)**
  - Hazus-MH combines science, engineering and mathematical modeling with GIS technology to estimate losses of life and property—and shows those losses on a map
  - HAZUS-MH estimates impacts to the physical, social, and economic vitality of a community from earthquakes, hurricane, winds, and floods
  - Coastal flood risk assessments will be similar to riverine, but will use coastal depth grids as input for refined analysis.
  - Hazus-MH analysis and data can support adoption of high regulatory standards for structures in high loss areas
  - Hazus-MH results can help to provide justification to find mitigation projects to protect citizens and properties from losses during future coastal flood events

HAZUS MH
EARTHQUAKE • WIND • FLOOD

For more information about Hazus and data inputs, visit http://www.fema.gov/plan/prevent/hazus/index.shtm or enter keywords "fema hazus" into an internet search engine.

In addition, FEMA is looking into the possibility of developing some unique Great Lakes coastal flood risk products that utilize datasets that have recently been collected or will be collected as part of the GLCFS:

- Storm Response Erosion Data: Dataset is expected to contain the results from erosion analysis in response to the 1-percent-annual chance flood event
- Shoreline Feature Data: Dataset was developed by the USACE in 2012 and contains primary and secondary land use tables, as well as coastline type, materials,

and vegetation. The current dataset contains data at one-mile spacing. The dataset does not include field-based reconnaissance or sediment/subsurface soil collection.

The delivery of these standard flood risk products and the Great Lakes coastal flood risk datasets will be dependent on the location of the Risk MAP study and coastal analysis, data availability, fiscal year funding, and partnerships with local communities. Therefore, all communities may not receive flood risk products.

II. Stakeholder Communication and Coordination

Communication and coordination with Federal, State and local stakeholders is key to the success of the GLCFS. A large emphasis has been placed on identifying stakeholders early and often and working with those stakeholders continually throughout the study process, from Discovery all the way through flood map and flood risk product development. Through outreach, the goal is to increase understanding of the new coastal study methodologies and the tools and processes that will be available for risk-based community planning, and to increase flood hazard awareness within the Great Lakes coastal region.

i. Lake Michigan Discovery Stakeholder Coordination

Meetings, emails, telephone calls, and letters are essential to communicate effectively throughout the life of this Lake Michigan Coastal Flood Study project, which has begun with this Discovery process.

To kick-off this Discovery process, FEMA formed a group of core stakeholders, which included representatives from FEMA Region V, STARR (mapping partner to FEMA), USACE, NOAA, ASFPM, the State NFIP Coordinators, the State Hazard Mitigation Officers (SHMOs), and State Engineers. The core stakeholders reviewed the Discovery plan, objectives, and key outcomes for Lake Michigan Discovery with FEMA, provided suggestions for outreach and communication, and raised any concerns as it related to Lake Michigan and the coastal flood study process. Following this kick-off process, outreach, communication, and coordination with local stakeholders was initiated.

Discovery Meeting invitations were sent to local community and county stakeholders within the Delta, Menominee, and Schoolcraft County portions of the Lake Michigan Coastal Flood Study project. In addition, an email invitation was sent to a larger list of stakeholders including, but not limited to, the core stakeholders, other federal agencies, universities, watershed groups, Great Lakes associations, technical stakeholders, and emergency management agencies. Representatives from the local governments, including cities, townships, and villages, were considered fundamental stakeholders in this process because they have been elected or appointed to represent the interests of the residents of this project area.

The Discovery Meeting invitations also included a Coastal Data Request Form

(Attachment A). Communities were asked to provide information on data that they had available at the local level that may be of use during the flood study update and during the development of the coastal flood risk products discussed earlier in this report. The Coastal Data Request Form included data requests for:

- Base Map Data
- Coastal Data
- Historic Flood Data
- Risk Assessment
- Flood Mitigation Information
- Community Plans and Projects
- Other comments/concerns based on local knowledge

Brampton Township (Delta County), City of Escanaba (Delta County), and Menominee County Emergency Management returned information through the Coastal Data Request Form. Ensign Township (Delta County) also submitted a copy of their "Coastal Atlas" report (date of report is unknown). A summary of the responses to the Coastal Data Request Form and of the local data collected can be found in Section IV, Summary of Data Analysis, of this report.

In addition to the hard copy letter invitations, and in order to improve the communication and data sharing leading up to the Discovery Meeting, FEMA offered local communities an opportunity to attend pre-Discovery Meeting conference call, referred to as an "Information Exchange Session". The conference call information was included in the Discovery Invitation letters mailed to local community officials, and an email reminder was sent out as well. The session's intent was to begin the process of learning about local data availability and what the critical issues are for the Great Lakes communities. Stakeholders from Menominee County Emergency Management (Menominee County) and Brampton Township and City of Escanaba (Delta County) were in attendance. Stakeholders discussed their current data availability, as well as questions they had regarding the Great Lakes Coastal Flood Study, areas of concern, and the Coastal Data Request Form.

The core stakeholder documents, "Information Exchange Session" documents, stakeholder contact list, and Discovery Meeting invitations can be found in Attachment B, Delta, Menominee, and Schoolcraft County Pre-Meeting Correspondence.

III. Discovery Meeting

The Discovery Meeting for Delta, Menominee, and Schoolcraft County was held on August 14, 2012 in Escanaba, Michigan. Communities and stakeholders affected by coastal flooding in Delta, Menominee, and Schoolcraft County were invited to the Discovery 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.

The objectives of the Discovery Meeting included:

- Continuation and expansion upon stakeholder engagement
- Discussion of data inputs from Federal, state and local stakeholders
- Identification of local coastal flood hazard needs and areas of concern
- Identification of flood risk products and datasets that best advance coastal mitigation action
- NFIP regulatory updates
- Discovery schedule and deliverables

The Discovery Meeting presentations included the following information:

- An overview of the GLCFS and schedule
- Review of the Discovery process and outcomes
- Discussion of coastal mapping and flood risk topics to be aware of
- Discussion of how the study may affect the communities, including compliance requirements
- Review of hazard mitigation opportunities and grant funding
- Encouragement and facilitated discussion regarding coastal study needs, mitigation project needs, desired compliance support, and local flood risk awareness efforts

Draft Discovery Maps for Delta, Menominee, and Schoolcraft County (Attachment C) were displayed and utilized during the meeting to encourage the discussion regarding areas of coastal flood risk concern and areas of hazard mitigation interest. The draft Discovery Maps shown at the meeting included geospatial and tabular data that had been collected prior to the meeting.

Geospatial Data:

- Average Annualized Loss (AAL) data
- Coastal Barrier Resources System (CBRS)[1]
- Coordinated Needs Management Strategy (CNMS)[2] Data- riverine only
- Proposed Transects
- Effective Special Flood Hazard Areas (SFHAs)
- Jurisdictional Boundaries
- Letters of Map Change (LOMCs)
- Levees
- Shoreline
- Streams
- USGS Gages
- Watershed Boundaries

Tabular Data:

- Declared Disasters
- Flood Insurance Data
- Potential Mitigation Actions (from local Hazard Mitigation Plans)
- Summary of Shoreline Data (Type and Coverage)

Participants at the Discovery Meeting were asked to cooperatively identify Areas of Concern and Areas of Mitigation Interest (AoMIs) within the Delta, Menominee, and Schoolcraft County Lake Michigan study area using the draft Discovery Maps and through general discussion during the meeting.

In addition to the draft Discovery Maps, figures showing the location of initially proposed draft transects around Delta, Menominee, and Schoolcraft County were available for review and comment. Stakeholders were encouraged to review the proposed draft transects and provide comments related to the location of the transects. The proposed draft transect maps that were available at the Discovery Meeting for Delta, Menominee, and Schoolcraft County can be found in Attachment D. A sample map is shown below as Figure 1.

[1] CBRS consists of the undeveloped coastal barriers and other areas located on the coasts of the United States that are identified and generally depicted on a series of maps. CBRS areas are ineligible for most new Federal expenditures and financial assistance.

[2] CNMS is FEMA's strategy for coordinating the management of mapping needs using modern geospatial technologies and current policies, requirements, and procedures. CNMS makes information related to mapping needs readily accessible and more usable. CNMS is only for riverine studies at this time. It is expected coastal needs will be captured in this system in the future.

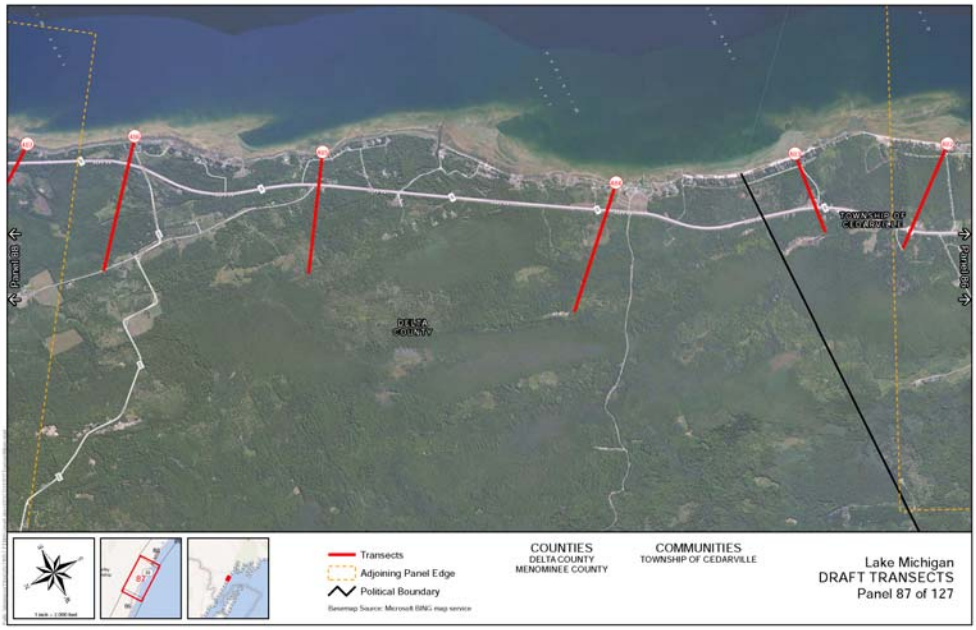


Figure 1: Sample Proposed Draft Transect Figure

All comments related to coastal flood risk and draft transects that were provided during the Delta, Menominee, and Schoolcraft County Discovery Meeting on the draft Discovery Maps and draft transect figures, as well as comments provided following the meeting, have been compiled into geospatial layers and associated tables. The GIS layers, titled "Stakeholder General Comments" and "Stakeholder Transect Comments", are shown on the Final Discovery Map in Appendix R of the basin-wide Lake Michigan Discovery Report (Federal Emergency Managment Agency, 2013). A description of each comment collected for Delta, Menominee, and Schoolcraft County can be found in Attachment E, Stakeholder Comments from Discovery Meeting, of this report. Each comment has a unique map identification number (if one exists) that correlates to its location on the Final Discovery Map. The identification of a comment (ID) categorized as a "Stakeholder General Comment" is represented by using the first three letters of the county name followed by a unique number (i.e. DEL – 1, DEL - 2). The identification of a comment (ID) categorized as a "Stakeholder Transect Comment" is represented by using the first three letters of the county name, followed by "TR", followed by a unique number (i.e. DEL-TR-1, DEL-TR-2).

A summary of the transect comments collected and the resulting revisions to the draft transect layout can be found in this report in Section IV, Summary of Data Analysis, under the "Proposed Draft Transects" subsection.

Discovery meeting minutes, sign in sheets, PowerPoint presentation, marked up draft Discovery Maps, and correspondence documentation have been included in Attachment F, Delta, Menominee, and Schoolcraft County Discovery Meeting Documents.

IV. Summary of Data Analysis

During this Discovery portion of the Lake Michigan Coastal Flood Study project, a massive collection of tabular and spatial data was conducted for all the coastal communities from Federal and State sources, as well as information collected through phone conversation, information exchange session conference call, the Discovery Meeting, and the Discovery Coastal Data Request Forms sent to each coastal community. This section lists the types of data and their sources that were collected for the Delta, Menominee, and Schoolcraft County study area, including information collected during and after the Discovery Meeting. The data analysis that follows Table 1 is divided into two sections: one section listing the data that can be used for Risk MAP product development and the other section listing the information that helped the study team to form a better understanding of the Delta, Menominee, and Schoolcraft County Lake Michigan Project Area prior to moving forward with the coastal flood study.

Table 1. Data Collected for Delta, Menominee, and Schoolcraft County

Data Types	Deliverable/Product	Source	Date of Data Collection	Level
Average Annualized Loss Data (AAL)	Discovery Map	Federal Emergency Management Agency (FEMA)	June 2012	Nationwide
Bathymetry and Topography	Discovery Report	USACE	2012/2013	Lakewide
Census Blocks	Discovery Map	U.S. Census Bureau	June 2012	Countywide
Coastal Data Request Form	Discovery Report	Community and County Stakeholders	July 2012	Countywide
Contacts	Discovery Report	Local Community Websites, State/FEMA updates	June 2012	Countywide
Community Assistance Visits (CAVs)	Discovery Report	FEMA Community Information System (CIS)	July 2012	Countywide
Community Rating System (CRS)	Discovery Report	FEMA's "Community Rating System Communities and Their Classes"	July 2012	Nationwide
Comprehensive Plans	Discovery Report	Local Community Websites	July 2012	Countywide

Table 1. Data Collected for Delta, Menominee, and Schoolcraft County

Data Types	Deliverable/Product	Source	Date of Data Collection	Level
Coastal Barrier Resources System (CBRS)	Discovery Map	U.S. Fish and Wildlife Service	July 2012	Nationwide
Coastal Structures	Discovery Map/Tabular Data	U.S. Army Corps of Engineers (USACE)	August 2012	Nationwide
Coordinated Needs Management Strategy (CNMS)	Discovery Map	FEMA	July 2012	Countywide
Critically Erosion Beach Areas	Discovery Report	Local Stakeholders	August 2012	Statewide
Critical Facilities	Discovery Report	Local Mitigation Plan	July 2012	Countywide
Dams	Discovery Report	USACE, National Inventory of Dams, Flood Insurance Rate Map (FIRM) Database	July 2012	Countywide
Declared Disasters	Discovery Report	FEMA's "Disaster Declarations Summary"	June 2012	Nationwide
Demographics, Industry	Discovery Report	U.S. Census Bureau, Local Mitigation Plans	June 2012	Countywide
Effective Floodplains	Discovery Map	FEMA Map Service Center and Mapping Information Platform	June 2012	Countywide
Flood Insurance Policies	Discovery Report	FEMA CIS	July 2012	Nationwide
Hazard Mitigation Plans and Status	Discovery Report	Local Mitigation Plans	July 2012	Countywide
Hazard Mitigation Assistance Program Grants Received	Discovery Report	FEMA's "Hazard Mitigation Program Summary" Community Input	June 2012	Nationwide

Table 1. Data Collected for Delta, Menominee, and Schoolcraft County

Data Types	Deliverable/Product	Source	Date of Data Collection	Level
Hazard Mitigation Projects	Discovery Report	Local Mitigation Plans	July 2012	Countywide
High Water Marks	Discovery Report	Effective Flood Insurance Study (FIS)	August 2012	Countywide
Historical Flooding	Discovery Report	Effective Flood Insurance Study (FIS), Local Mitigation Plans	July 2012	Countywide
Historical Storm Events	Discovery Report	Effective FIS, Local Mitigation Plans	July 2012	Countywide
Individual/Public Assistance	Discovery Report	FEMA's "Public Assistance Subgrantee Summary"	June 2012	Nationwide
Letters of Map Change (LOMCs)	Discovery Map	FEMA's Mapping Information Platform	July 2012	Countywide
Local Data	Discovery Report	Coastal Data Request Form completed by communities	August 2012	Countywide
Meteorological Gages	Discovery Map	National Oceanic and Atmospheric Administration (NOAA) Great Lakes Environmental Research Laboratory	July 2012	Regionwide
Oblique Imagery	Discovery Report	USACE	2012	Lakewide
Ordinance	Discovery Report	Local Community Websites	July 2012	Countywide
Proposed Draft Transects	Discovery Map	FEMA	February 2013	Lakewide
Repetitive Loss	Discovery Report	FEMA CIS	July 2012	Countywide
Shoreline Classification	Discovery Map	USACE	July 2012	Regionwide

Table 1. Data Collected for Delta, Menominee, and Schoolcraft County

Data Types	Deliverable/Product	Source	Date of Data Collection	Level
Stream Gages	Discovery Map	USGS	July 2012	Countywide
Water Level Gages	Discovery Map	NOAA Department of Fisheries and Oceans	July 2012	Regionwide
Wave Gages	Discovery Map	NOAA	July 2012	Regionwide

i. 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) websites 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. The subsections below provide details on the data determined to be available within the project area.

I.IV.i.1 Average Annualized Loss (AAL) Data

Average Annualized Loss (AAL) data provides a general understanding of the dollar losses associated with a certain frequency of flood events within a county and is used to get a relative comparison of flood risk. Losses are determined by FEMA's Multi-Hazard Risk Assessment and Loss Estimation Program, otherwise known as Hazus-MH.

Hazus, a free risk assessment software application from FEMA, is the most widely used flood risk assessment tool available. Hazus can run different scenario floods (riverine and coastal) to determine how much damage might occur as a result. Hazus can also be used by community officials to evaluate flood damage that can occur based on new or proposed mitigation projects or future development patterns and practices, and it can run specialized risk assessments, such as what happens when a dam or levee fails.

Hazus-MH includes national datasets that can be supplemented with local data. If local detailed data are available, users may consider using this data to perform more refined Hazus analyses. Hazus-MH is flexible and allows users to update Hazus-MH with local data or use a combination of both local and national. Augmenting the Hazus-MH provided data with local data can improve the accuracy and resolution of analysis results. Additional information about the Hazus-MH process and tool can be found at http://www.fema.gov/protecting-our-communities/hazus.

The Hazus-MH analysis used in this report is based on approximate flood boundaries and national datasets. The calculation is based on flood elevation estimates using the 10-meter Digital Elevation Model (DEM) on streams with drainage areas of at least 10 square miles.

The results shown in Table 2 include data for the entire county, as opposed to only the coastal project area. Information can also be obtained from the report titled FEMA *Hazus AAL Usability Analysis*, dated April 13, 2011 (Federal Emergency Managment Agency, 2011). AAL data summarized at the census block level are shown on the draft Discovery Maps (Attachment C).

Table 2. Hazus AAL Data for Delta, Menominee, and Schoolcraft County

FIPS Code	County	Total Losses for Building and Content (in thousands of $)
26041	Delta County	$27,640
26109	Menominee County	$48,376
26153	Schoolcraft County	$63,367

Source: FEMA
FIPS = Federal Information Processing Standards

I.IV.i.2 Coastal Recession

Coastal erosion is the recession of land and the removal of beach or dune sediments. It affects all of the beaches and coasts in the world, including those of Lake Michigan. Important factors in coastal erosion are the types of rock or soil being eroded, the presence or absence of beaches or human-made structures, and how the shore is oriented with respect to prevailing winds and waves, water levels, climatology, and groundwater and surface drainage.

In Michigan, areas prone to erosion along the Lake Michigan shoreline are subject to special setback requirements established by the Michigan Department of Environmental Quality (MDEQ). From MDEQ's website, high risk erosion areas are those shorelands of the Great Lakes and connecting waters where recession of the zone of active erosion has been occurring at a long-term average rate of one foot or more per year. The erosion can be caused from one or several factors, including high water levels, storms, wind, ground water seepage, surface water runoff, and frost. The high risk erosion area regulations require setback distances to protect new structures from erosion for a period of 30 to 60 years, depending on the size, number of living units and type of construction. Approximately 300 miles of shoreline are classified as high risk erosion area. Updates of the recession rate studies, which form the basis of the setbacks, are periodically conducted to reflect changing water levels and shore protection efforts.

Table 3 lists the communities within Delta, Menominee, and Schoolcraft Counties that have mapped High Risk Erosion Areas.

Table 3. Availability of Michigan DEQ High Risk Erosion Area Maps

County	Community
Delta	Ensign Township
	Escanaba Township
	Ford River Township
	Masonville Township
	Wells Township
Menominee	Cedarville Township
	Ingallston Township
	Menominee Township
Schoolcraft	Thompson Township

Additional information, including High Risk Erosion Area maps, can be found at the Department of Environmental Quality's High Risk Erosion Areas website at http://www.michigan.gov/deq/0,1607,7-135-3313_3677_3700-10860--,00.html . The complete set of High Risk Erosion Areas can also be found in Appendix U of the Lake Michigan basin-wide Discovery Report (Federal Emergency Managment Agency, 2013). In addition, Ensign Township (Delta County) provided their "Coastal Atlas" report during this Discovery process, which documents the parcels included in the mapped erosion areas within the Township.

If users of this Discovery Report have any additional erosion or recession data or photographs that you would like to submit, please contact FEMA Region V Mitigation Division.

I.IV.i.3 Federal Land

Federal lands data were obtained from the National Atlas at http://nationalatlas.gov/mld/fedlanp.html. This data is also available from the National Discovery Data Repository located on FEMA's Mapping Information Platform (MIP) at https://hazards.fema.gov. The map layer shows those 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, and other agencies. Only areas of 640 acres or more are included.

In Delta County, the majority of the area along the Lake Michigan shoreline is part of Hiawatha National Forest. In Schoolcraft County, the Seney National Wildlife Refuge is centrally located within the county. No federal lands were found in Menominee County coastal areas.

I.IV.i.4 Jurisdictional Boundaries

Jurisdictional boundaries were obtained for Delta and Schoolcraft Counties from a derived set of TIGER line files available through the U.S. Census Bureau geography division. TIGER line files were last derived from the TIGER database in 1997. To find out more

about TIGER line files and other Census TIGER database derived data sets visit http://www.census.gov/geo/www/tiger.

Menominee County jurisdictional boundaries were obtained from the Menominee County (All Jurisdictions) FIRM database, effective October 16, 2012.

Jurisdictional boundaries may also be extracted from the "Michigan Geographic Framework" dataset available through Michigan CGI (Center for Geographic Information) at http://www.mcgi.state.mi.us/mgdl/.

I.IV.i.5 Local Data

As part of this Discovery process, communities were asked to fill out a Coastal Data Request Form and provide information on data that they had available at the local level that may be of use during the coastal flood study update, and during the development of the coastal flood risk products discussed earlier in this report. The Coastal Data Request Form (Attachment A) included data requests for base map data, coastal data, historic flood data, risk assessment information, mitigation information, and community plans and projects.

The table in Attachment G compiles all the information collected for Delta and Menominee Counties from the completed Coastal Data Request Forms, during the Discovery Meeting, or through phone conversations and email. Information was not provided by Schoolcraft County via the form or otherwise. Brampton Township (Delta County), City of Escanaba (Delta County), Ensign Township (Delta County), and Menominee County Emergency Management all provided information via the Coastal Data Request Form or through email.

In summary, the below data and information was noted by local stakeholders as existing:

- Brampton Township noted they have not had coastal flooding in recent years. City of Escanaba indicated that there is 2012 LiDAR available, processed to 1' contours, for some areas of Delta County.
- Menominee County Emergency Management indicated that the Menominee County Hazard Mitigation Plan expired in April of 2012. There is currently an effort underway by the Central Upper Peninsula Planning & Development Regional Commission (CUPPAD) to update the plan using grant funding that has been awarded. That update process is projected to be completed in 2013.
- CUPPAD noted during the Discovery Meeting that they have road, stream, and political boundary digital data, as well as parcel data for Delta County.
- The City of Escanaba and Gladstone (Delta County) also have community-level parcel data.
- Ensign Township (Delta County) provided a "Coastal Atlas" report. The reports' intent is to bring information on a variety of coastal resources and issues together in a single document. In the report, information provided for Ensign Township, as

well as other Delta County coastal areas, included land use, zoning, wetlands, floodplains, soils, environmental areas, high risk erosion areas, coastal barriers, contaminated sites, recreational sites, historical sites, and land ownership. The date of this report was not provided.

All datasets noted above were not collected as part of this Discovery process. Those that were provided have been included on FEMA's Mapping Information Platform (MIP) Discovery Data Repository at J:\FEMA\DISCOVERY_DATA_REPOSITORY\R05_DATA\ and can be accessed by FEMA authorized users. The MIP can be accessed from https://hazards.fema.gov/.

I.IV.i.6 Publicly Owned Land

The Upper Peninsula has several areas of public land. State forests, parks, and pathways exist along the Lake Michigan shoreline for Delta, Menominee, and Schoolcraft County.

The Michigan CGI Geographic Data Library Catalog at http://www.mcgi.state.mi.us/mgdl/ currently contains over 60 unique statewide datasets including the state's base map, aerial imagery, geology, hydrography, land ownership, topography, and much more. Publicly owned lands (national, state, and local parks, forests, etc.) were found in "DNR Land and Mineral Ownership" dataset available through Michigan CGI.

I.IV.i.7 Shoreline Information

A shoreline feature dataset was generated by USACE Detroit District (U.S. Army Corps of Engineers, 2012) using 2012 oblique photographs (see "Topography, Bathymetry, and Oblique Imagery" subsection in this report). The dataset captures shoreline types, land uses, coverage, and vegetation types along the entire Great Lakes shoreline, including Lake Michigan. The dataset includes identification of "artificial" shoreline, which may be indicative of local coastal flood protection structures. This dataset does not identify the level of protection of any coastal structures, and it does not validate whether or not a coastal structure exists. The current dataset contains data at one-mile spacing. The dataset does not include field-based reconnaissance or sediment/subsurface soil collection. The dataset can be downloaded from http://www.greatlakescoast.org/ under the "Technical Resources" section.

From the USACE shoreline feature dataset, the approximate shoreline along Delta, Menominee, and Schoolcraft Counties that is covered by this study totals 339.4 miles. The shoreline classification information for Delta, Menominee, and Schoolcraft County is summarized in Tables 4 through 7, including shoreline types, land uses, coverage, and vegetation types, respectively.

Table 4. Summary of Shoreline Types

COUNTY	Total Shoreline (mile)	Artificial Shoreline (mile)	Boulders, Bedrock (mile)	Cohesive Clays and Silts (mile)	Sand (mile)	Shingles, Pebbles, Cobbles (Mile)
DELTA COUNTY	235.0	14.3	89.2	--	97.8	33.7
MENOMINEE COUNTY	47.1	7.4	5.6	0.6	21.6	11.8
SCHOOLCRAFT COUNTY	57.3	4.4	22.4	--	23.3	7.2

Source: USACE 2012, Lake Michigan Shoreline Classification

Table 5. Summary of Shoreline by Land Use

COUNTY	Total Shoreline (mile)	Commercial/Industrial (mile)	Farm Land (mile)	Forested (mile)	High Density Residential (mile)	Low Density Residential (mile)	Moderate Density Residential (mile)	Park Land (mile)
DELTA COUNTY	235.0	17.4	1.9	60.2	1.9	89.9	24.9	39.0
MENOMINEE COUNTY	47.1	5.6	--	0.6	1.2	34.0	--	5.6
SCHOOLCRAFT COUNTY	57.3	10.9	--	11.8	--	34.0	0.6	--

Source: USACE 2012, Lake Michigan Shoreline Classification

Table 6. Summary of Shoreline Coverage

COUNTY	Total Shoreline (mile)	Bluff 2'-10' (mile)	Coastal Wetland	Dune 2'-10' (mile)	Flat Coast (mile)	High Bluff 10'+ (mile)	High Dune 10'+ (mile)
DELTA COUNTY	235.0	13.1	3.1	23.3	182.5	12.4	0.6
MENOMINEE COUNTY	47.1	6.2	1.2	7.9	31.7	--	--
SCHOOLCRAFT COUNTY	57.3	0.0	--	27.0	30.2	--	--

Source: USACE 2012, Lake Michigan Shoreline Classification

Table 7. Summary of Shoreline Vegetation Types

COUNTY	Total Shoreline (mile)	High Density Shrubs/Trees (mile)	Low Density Shrubs/Trees (mile)	Manicured Lawn (mile)	Moderate Density Shrubs/ Trees (mile)	None (mile)	Unmaintained Non-Woody Vegetation (mile)
DELTA COUNTY	235.0	54.8	45.4	37.9	21.8	23.0	52.2
MENOMINEE COUNTY	47.1	4.2	--	9.3	10.6	--	23.0
SCHOOLCRAFT COUNTY	57.3	29.6	8.1	5.6	6.5	3.1	4.4

Source: USACE 2012, Lake Michigan Shoreline Classification

I.IV.i.8 Stream Lines/Hydrograph

Stream lines for Delta, Menominee, and Schoolcraft Counties were obtained from USGS's National Hydrography Dataset (NHD). The NHD is a digital vector dataset used by GIS. It contains features such as lakes, ponds, streams, rivers, canals, dams and stream gages. The datasets are designed to be used in general mapping and in the analysis of surface-water systems. Data can be downloaded from http://nhd.usgs.gov/data.html.

I.IV.i.9 Topography, Bathymetry, and Oblique Imagery

New Data Collected for Great Lakes Coastal Flood Study

As part of the GLCFS, Light Detection and Ranging (LiDAR) was collected to develop topographic and bathymetric data along the Lake Michigan shoreline. Topography is the configuration of natural and man-made features of a surface area and their relative position and elevations. Bathymetry is the underwater equivalent to topography.

.

LiDAR is an optical remote sensing technology that can measure the distance to, or other properties of, a target by illuminating the target with light, often using pulses from a laser. A narrow laser beam can be used to map physical features with very high resolution. Downward-looking LIDAR instruments fitted to aircraft and satellites are used for surveying and mapping. LiDAR can be used to create DTM (Digital Terrain Models) and DEM (Digital Elevation Models), which is a digital model or 3-dimensional representation of the terrain's surface.

The LIDAR data for this study was collected within a 1500 meter buffer (500 meters inland and 1000 meters seaward of the land/water interface). Where water clarity permitted, data was collected to cover all federal navigation projects. Flight lines were flown along the channel alignment to ensure the best possible coverage of inlets and structures.

For quality control purposes, one cross line was used every 25 miles along shore or more frequently to ensure 90 percent of all planned lines within the area were crossed by a cross line. In areas of the coast where natural or artificial barriers prevent aircraft operations, the cross line(s) were collected at the nearest possible location to the required interval, but no closer than five (5) miles to an adjacent planned cross line. Overlapping lines and datasets were compared to each other and to cross lines and the differences calculated.

At the time this report was generated, the quality control process was not yet completed on the LiDAR dataset. However, as part of that process, the vertical difference between the LiDAR and ground truth data will be calculated. Ground truth refers to a process in which a pixel on a satellite image is compared to what is there in reality. This is especially important in order to relate LiDAR data to real features and materials on the ground. The collection of ground truth data enables calibration of the LiDAR data, and aids in the interpretation and analysis of what is being sensed. Using this process, all systematic errors will be identified and eliminated and remaining errors should have a normal distribution. Differences between a DEM created from the LiDAR data representing bare

ground and the ground truth data will be unbiased and within +/-15 cm (RMSE[3]) in flat terrain and within +/-30 cm (RMSE[3]) in hilly terrain. Horizontal positions will be accurate to +/- 1.5m (RMSE[3]). Data will be processed to 2ft contours.

The processing of the bathymetric data for this study will be performed based on the strongest return of each LiDAR pulse, assuming this depth represents the bottom. Data will be processed to produce bottom reflectance data from the LiDAR data.

As of the date of this report, the LiDAR data is expected to become available in the spring of 2013 for this study area. There is a delay in the schedule to collect new bathymetric data; therefore, existing bathymetric data may be used for the transect-based coastal flood hazard analysis. Existing high-resolution bathymetric and topographic data is currently available at http://csc.noaa.gov .

As part of the GLCFS, USACE collected oblique imagery for the entire Great Lakes coastline in 2012. Oblique imagery is captured at an angle, as compared to an overhead view provided by orthophotos, and allows users a 3-dimensional view of landscape, buildings, and other features. This dataset may be useful to communities during emergency response, planning, and identification of shoreline types and obstructions; and management of assets, critical facilities, and public properties along the Lake Michigan shoreline. The oblique imagery is current available via a web-based browser at http://greatlakes.usace.army.mil/.

Other Data Available:
The NOAA Coastal Services Center, Digital Coast, hosts a variety of digital coastal data, including bathymetric and topographic data, and is located at http://www.csc.noaa.gov/digitalcoast .

During the Information Exchange process, the City of Escanaba (Delta County) noted there are 2012 aerial photographs, as well as LiDAR processed to 1 foot contours, that covers most of the City. These are also currently privately owned datasets that the City can obtain for a fee.

I.IV.i.10 Transportation

The Bing Map service has been used as a basemap layer on the Discovery Map, and includes a transportation layer. For more information on Bing Map services and how they can be used in GIS, please visit http://www.arcgis.com/home and search for "Bing Maps".

Transportation data can also be found in the "Michigan Geographic Framework" dataset available through Michigan CGI (Center for Geographic Information) at

[3] Root-mean-square-error is a measure of the differences between values predicted by a model or an estimator and the values actually observed.

http://www.mcgi.state.mi.us/mgdl/. This is the same data source that was used in the Menominee County (All Jurisdictions) FIRM database, effective October 16, 2012.

I.IV.i.11 Watershed Boundaries

U.S. Geological Survey (USGS) Hydrologic Unit Code 8 (HUC8) watershed boundaries were obtained from the National Atlas 2011 "Raw Data Download" at http://nationalatlas.gov/atlasftp.html.

Delta County contains portions of five HUC-8 watersheds: Cedar-Ford (04030109), Escanaba (04030110), Tacoosh-Whitefish (04030111), Fishdam-Sturgeon (04030112), and Manistique (04060106),

Menominee County contains portions of three HUC-8 watersheds: Menominee (04030108), Cedar-Ford (04030109), and Escanaba (04030110).

Schoolcraft County contains portions of four HUC-8 watersheds: Tahquamernon (04020202), Fishdam-Sturgeon (04030112), Manistique (04060106), and Brevoort-Millecoquins (04060107).

ii. Other Data and Information

Delta County is located in Michigan's Upper Peninsula, on the northern shores of Lake Michigan. Delta County's growth is made up of a combination of forestry, manufacturing, and tourism. According to the U.S. Census Bureau, Delta County had a 2010 population of 37,069, a decline of about 3.7 percent from the 2000 recorded population (U.S. Census Bureau, 2010). The county has a total area of approximately 1,992 square miles, of which 1,170 square miles is land and 822 square miles is water.

Menominee County is the southernmost county in the Upper Peninsula of Michigan. It includes a land area of 1,044 square miles. The 2010 population, according to the U.S. Census bureau, was 24, 229, which was an approximate decline of 5 percent from 2000 (U.S. Census Bureau, 2010). Much of its border is formed by water features, including the Menominee River along the western side and Green Bay (Lake Michigan) on the east. Most of the residents live in the southern end of the county in or near the City of Menominee, the county seat. Nearly 80 percent of the county is forested with another 10 percent in agricultural use. The economy is anchored by a large manufacturing base in the City of Menominee and agribusiness - most notably dairying and forest products. It leads the Upper Peninsula in dairy production and agriculture overall. Two trunk lines are major transportation routes that link Wisconsin to upper Michigan. Highway US- 2, which extends for nearly the entire east-west length of the Upper Peninsula, passes through the northern part of the county and is intersected by US-41 at the Village of Powers (Central Upper Peninsula Planning & Development Regional Commission, 2012).

Schoolcraft County is a county in the Upper Peninsula east of Delta County. The county seat is Manistique, which lies along the northern shore of Lake Michigan. The county is largely rural and forested, with much of western portion of the county located within Hiawatha National Forest. As of the 2010 U.S. census, the population was 8,485, a decline from the 8,903 population reported by the U.S. census in 2000 (U.S. Census Bureau, 2010). According to the 2000 census, the county has a total area of approximately 1,884 square miles (4,878.7 km^2), of which 1,178 square miles is land and 706 square miles is water. Additional information can be found at Schoolcraft County website at www.schoolcraftcounty.net .

I.IV.ii.1 Coastal Barrier Resources Systems

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 http://www.fws.gov/CBRA/Maps/Data_Disclaimer_Shapefiles.html and are dated June 15, 2010.

In Delta County, two coastal barrier units have been mapped. One is located immediately south of Squaw Point in Ensign and Bay de Noc Townships. Another unit, located inland in Garden Township, is designated as an "Otherwise Protected Area". Otherwise Protected Areas are a category for lands reserved for conservation purposes. Menominee County has one designated unit and Schoolcraft County has two designated units of the coastal barriers along the Lake Michigan shoreline and/or within this project area.

I.IV.ii.2 Coastal Flood Protection Measures

Coastal structures along Lake Michigan will be reviewed in more detail during the engineering analysis portion of the Lake Michigan study and were not analyzed as part of this Discovery process. A summary of information collected regarding existing coastal structures and flood protection measures is described below.

FEMA's 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). For this Discovery process, the November 2011 MLI Status Report published by FEMA was reviewed. The MLI Levee database showed no levee segments in Delta, Menominee, and Schoolcraft Counties that provide protection from the 1-percent-annual-chance flood.

The USACE Coastal & Hydraulics Laboratory (CHL), a member of the Engineer Research & Development Center (ERDC), has compiled an inventory of coastal structures called the Enterprise Coastal Inventory Database (ECID). The ECID application and database houses

information on more than 900 coastal structures in the U.S. and uses a Google Earth interface for users to access information on the structures including project reports, aerial photographs, wave and water level and bathymetric data. The database and application are available at http://chl.erdc.usace.army.mil/chl.aspx?p=s&a=Projects;246 . These maintained coastal structures protect harbors and shore-based infrastructure, provide beach and shoreline stability control, provide flood protection to varying degrees, and protect coastal communities, roadways and bridges, etc. These structures include seawalls, bulkheads, revetments, dikes and levees, breakwaters, groins, sills/perched beaches, and jetties and piers.

The USACE coastal structures along Lake Michigan found within Delta, Menominee, and Schoolcraft County are compiled in Table 8. It is important to note that these coastal structures do not necessarily protect areas from the 1-percent-annual-chance flood event. Many of these USACE coastal structures were built between 1860 and 1940. Low lake levels since the 1990's have accelerated deterioration of these navigation structures and USACE Detroit District launched an investigation to assess the effects of changes in Lake Michigan water levels on the performance and stability of these structures. An inventory of critical infrastructure protected by federally maintained navigation structures was conducted along with a condition assessment of the structures, including an estimation of the risk associated with structure failure. Structures were rated on the following scale:

A – Failure Unlikely
B – Low Risk of Failure
C – Medium Risk of Failure
D – High Risk of Failure
F – Failed

Table 8 also provides the condition assessment for each of the structures listed.

Table 8. USACE Coastal Structure Inventory

State	Location	Coastal Structure	USACE Condition Assessment	Structure Length (feet)
MI	Manistique Harbor	West Pier	A	322
MI	Menominee Harbor & River	South Pier	C	2688
		North Pier		1224

I.IV.ii.3 Community Assisted 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, other problems in the community's floodplain management, and problems with the biennial report data. 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. The summary of CAV visits were extracted from FEMA's Community Information System (CIS) at https://portal.fema.gov in July 2012. Table 9 shows the most recent CAV dates by community.

Table 9. Summary of Community Assisted Visits

County	Community	CAV Date
MENOMINEE	MENOMINEE, CITY OF	1/17/1991
MENOMINEE	CEDARVILLE, TOWNSHIP OF	--
MENOMINEE	INGALLSTON, TOWNSHIP OF	--
MENOMINEE	MENOMINEE, TOWNSHIP OF	9/22/1999
DELTA	BAY DE NOC, TOWNSHIP OF	--
DELTA	BRAMPTON, TOWNSHIP OF	--
DELTA	ENSIGN, TOWNSHIP OF	--
DELTA	ESCANABA, CITY OF	--
DELTA	ESCANABA, TOWNSHIP OF	--
DELTA	FAIRBANKS, TOWNSHIP OF	--
DELTA	FORD RIVER, TOWNSHIP OF	--
DELTA	GARDEN, TOWNSHIP OF	--
DELTA	GARDEN, VILLAGE OF	--
DELTA	GLADSTONE, CITY OF	--
DELTA	MASONVILLE, TOWNSHIP OF	--
DELTA	NAHMA, TOWNSHIP OF	--
DELTA	WELLS, TOWNSHIP OF	--
SCHOOLCRAFT	MANISTIQUE, CITY OF	9/15/2000
SCHOOLCRAFT	THOMPSON, TOWNSHIP OF	--

CAV = Community Assisted Visit

I.IV.ii.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 Website site at http://www.fema.gov/library/viewRecord.do?id=3629, which was accessed in July 2012.

No coastal communities in Delta, Menominee, or Schoolcraft Counties participate in the CRS program.

I.IV.ii.5 Comprehensive Plans

A comprehensive plan is a land use document providing 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.

Menominee County Planning Commission created the Menominee County Master Plan in 2012. The 2012 plan is a revision to the 2003 Comprehensive Plan for Menominee County. The new Master Plan can be downloaded at http://www.menomineecounty.com/i_menominee/d/menominee_county_master_plan.final.10.4.12.pdf . The plan includes background information regarding historical, housing, population, and other current conditions; development of goals and objectives that define how the county will address identified but continually changing concerns and trends; description of types of development and suitable locations that would be most appropriate; and a future land use map used as an illustration of potential long-range land use patterns.

The Delta County Regional Comprehensive Plan was not obtained at the time this report was finalized. The Delta County website can be found at http://www.deltacountymi.org/ . The City of Escanaba in Delta County has a Northshore redevelopment Master Plan that was noted as Draft in January of 2010. The plan identifies the Escanaba waterfront as an underutilized resource, which could be converted into a dynamic mixed-use redevelopment area. As a result, the community Master Plan outlined a logical segmentation of the waterfront to include a series of uses, such as waterfront related retail, commercial, lodging, and residential from the Municipal Dock area to 16th Avenue North, thus positioning the area for redevelopment. More information on the plan can be found at http://www.escanaba.org/?draftnorthshoremasterplan .

Although no other comprehensive plans were identified during this Discovery process, they may exist at the local level.

I.IV.ii.6 Coordinated Needs Management Strategy (CNMS) and NFIP Mapping Needs

During FEMA's Flood Map Modernization program from 2003 to 2008, FEMA adhered to Procedure Memorandum No. 56 which states that, "Section 575 of the National Flood Insurance Program Reform Act of 1994 mandates that at least once every five years FEMA assess the need to review and update all floodplain areas and flood risk zones identified, delineated, or established under Section 1360 of the National Flood Insurance Act, as amended." This requirement was fulfilled through the Mapping Needs Assessment process. Other mechanisms such as the Mapping Needs Update Support System (MNUSS) and scoping reports were used to capture information describing conditions on the FIRMs and the potential for a map update.

FEMA's Coordinated Needs Management Strategy (CNMS) was initiated through FEMA's Risk MAP program in 2009 to update the way FEMA organizes, stores, and analyzes flood hazard mapping needs information for communities. CNMS defines an approach and structure for the identification and management of flood hazard mapping needs that provides support to data-driven planning and the flood map update investment process in a geospatial environment. The goal is to identify areas where existing flood maps are not up to FEMA's mapping standards. More information about the CNMS can be found at http://www.fema.gov/library/viewRecord.do?id=4628 .

There are three classifications within the CNMS: "Valid," "Unverified," and "Unknown." New and updated studies (those with new hydrologic and hydraulic models) performed during FEMA's 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. Validation elements apply physical, climatological, and environmental factors to stream studies to determine validity. A stream study has to pass all of the critical elements and at least seven secondary elements to be classified as "Valid." The remaining streams are classified as "Unverified" or "Unknown". Studies for which flood hazard data are identified as having critical or significant secondary change characteristics 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" (Federal Emergency Managment Agency, 2010).

Table 10 summarizes the draft results of the county-wide validation analysis obtained from CNMS in June 2012. CNMS only captures riverine studies at this time.

Table 10. CNMS Status for Delta, Menominee, and Schoolcraft County

County	FIPS	Unknown (stream miles)	Unverified (stream miles)	Valid (stream miles)	Total (stream miles)
Delta	26041	169	0	0	169
Menominee	26109	9	0	324	332
Schoolcraft	26153	2	0	0	2

I.IV.ii.7 Critical Facilities

Critical facilities are the facilities that can impact the delivery of vital services, cause greater damages to other sectors of a community, or put special populations at risk. Hospitals, roads, schools, and shelters are all examples of critical facilities that play a central role in disaster response and recovery. Understanding which facilities are exposed, and the degree of that exposure, can help reduce or eliminate service interruptions and costly redevelopment. Incorporating this information into development planning helps communities get back on their feet faster.

The location of critical facilities within a county or community can be viewed from the NOAA Coastal Services Center, Critical Facilities Flood Exposure Tool at http://www.csc.noaa.gov/criticalfacilities/. Delta County was found to have minimal roads and a hazardous material site within the effective floodplain. Menominee County and Schoolcraft County data was not available.

The assessment of the flood risk posed to critical facilities is an important aspect of a hazard mitigation plan. Information on critical features can be found in the Delta, Menominee, and Schoolcraft County respective hazard mitigation plans (all expired), but were not compiled as part of this report.

I.IV.ii.8 Critically Eroded Beaches and Beach Nourishment/Dune Replacement Projects

According to the Critical Dune Area Maps maintained by MDEQ at http://www.michigan.gov/deq/0,4561,7-135-3311_4114_4236-70207--,00.html (accessed July 2012), critical dunes are located along Schoolcraft County shoreline. Appendix U of the basin-wide Lake Michigan Discovery Report contains an overview map that depicts the location of critical dune areas (Federal Emergency Managment Agency, 2013).

Critically eroded beaches and beach nourishment/dune replacement projects were not identified in Delta, Menominee, and Schoolcraft County during this Discovery process.

I.IV.ii.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 Website https://nid.usace.army.mil/. The Menominee County (All Jurisdictions) FIRM database, effective October 2012, also contains the location of dams within the county.

Two dams, called Scott Paper Company Lower Dam and Scott Paper Company Upper Dam, were found to be located on the Menominee River in Menominee County.

I.IV.ii.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; fire management records are considered partial because of the historical nature of the dataset).

The list of FEMA's disaster declarations is available at http://www.fema.gov/data-feeds and also by county through https://explore.data.gov/Other/FEMA-Disaster-Declarations-Summary/uihf-be6u. Table 11 lists the major disaster declarations that have been declared in Delta, Menominee, and Schoolcraft Counties.

Table 11. Declared Disasters in Delta, Menominee, and Schoolcraft County

Declared County/Area	Disaster Number	Declaration Date	Incident Type	Description
Delta (County)	1028	5/10/1994	Snow	SEVERE DEEP FREEZE
Delta (County)	3035	3/2/1977	Drought	DROUGHT
Delta (County)	3057	1/27/1978	Snow	BLIZZARDS & SNOWSTORMS
Delta (County)	3225	9/7/2005	Hurricane	HURRICANE KATRINA EVACUATION
Menominee (County)	371	4/12/1973	Flood	SEVERE STORMS & FLOODING
Menominee (County)	3035	3/2/1977	Drought	DROUGHT
Menominee (County)	3057	1/27/1978	Snow	BLIZZARDS & SNOWSTORMS
Menominee (County)	3225	9/7/2005	Hurricane	HURRICANE KATRINA EVACUATION
Schoolcraft (County)	1028	5/10/1994	Snow	SEVERE DEEP FREEZE
Schoolcraft (County)	3035	3/2/1977	Drought	DROUGHT
Schoolcraft (County)	3057	1/27/1978	Snow	BLIZZARDS & SNOWSTORMS
Schoolcraft (County)	3225	9/7/2005	Hurricane	HURRICANE KATRINA EVACUATION*

*Refers to the federal disaster aid that was made available to Michigan to supplement its efforts to assist evacuees from areas struck by Hurricane Katrina.

I.IV.ii.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 12 summarizes the numbers and premiums of insurance policies, the total coverage, and the numbers and dollar amounts of paid losses in communities of the Delta, Menominee, and Schoolcraft County project areas. The claim information is not specific to Lake Michigan flooding. The data is based on Community Summary Reports that were extracted from FEMA's CIS website (https://portal.fema.gov/famsVuWeb/home) in December 2012.

Table 12. Summary of Flood Insurance Policies and Claims

County	Community	CID	No. Policies	Total Premium	Total Coverage	Number of claims since 1978	Dollar ($) paid for claims since 1978
Delta	BAY DE NOC, TOWNSHIP OF	260685	2	$ 1,159	$ 245,000	0	$0
Delta	BRAMPTON, TOWNSHIP OF	260386	1	$ 1,285	$210,000	0	$0
Delta	ENSIGN, TOWNSHIP OF	260752	1	$ 1,524	$180,000	0	$0
Delta	ESCANABA, CITY OF	260061	0	$0	$0	3	$1,696
Delta	ESCANABA, TOWNSHIP OF	260387	2	$ 1,373	$ 395,000	1	$0
Delta	FAIRBANKS, TOWNSHIP OF	260804	No Data Found	--	--	--	--
Delta	FORD RIVER, TOWNSHIP OF	260062	9	$ 6,703	$ 1,068,000	2	$11,825
Delta	GARDEN, TOWNSHIP OF	260763	1	$ 1,304	$350,000	0	$0
Delta	GARDEN, VILLAGE OF	260948	1	$ 217	$ 70,000	0	$0
Delta	GLADSTONE, CITY OF	260267	2	$ 515	$ 123,200	2	$4,033
Delta	MASONVILLE, TOWNSHIP OF	260687	19	$ 13,578	$ 2,016,600	1	$466
Delta	NAHMA, TOWNSHIP OF	260688	9	$ 4,523	$ 446,400	1	$0
Delta	WELLS, TOWNSHIP OF	260388	4	$ 2,377	$ 716,100	1	$811
Menominee	CEDARVILLE, TOWNSHIP OF	260659	2	$ 1,048	$ 312,000	0	$0

Table 12. Summary of Flood Insurance Policies and Claims

County	Community	CID	No. Policies	Total Premium	Total Coverage	Number of claims since 1978	Dollar ($) paid for claims since 1978
Menominee	INGALLSON, TOWNSHIP OF	260660	No Data Found	--	--	--	--
Menominee	MENOMINEE, CITY OF	260138	15	$ 16,328	$ 4,227,000	5	$3,603
Menominee	MENOMINEE, TOWNSHIP OF	260702	38	$ 24,471	$ 5,425,000	0	$0
Schoolcraft	MANISTIQUE, CITY OF	260595	2	$ 674	$ 73,000	0	$0
Schoolcraft	THOMPSON, TOWNSHIP OF	260519	0	$0	$0	1	$8,009

CID = Community Identification
Source: FEMA's CIS Summary Report "Insurance Reports"

I.IV.ii.12 Gage Data

The NOAA Coastal Services Center, Digital Coast, hosts a variety of digital coastal data, including gage data, and is located at http://www.csc.noaa.gov/digitalcoast.

Meteorological Stations

The National Data Buoy Center (NDBC) is a part of the NOAA National Weather Service (NWS). 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 to help meet these needs. All stations 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 website http://www.ndbc.noaa.gov/ .

Table 13 shows the meteorological station identification number and location for the gages in Delta, Menominee, and Schoolcraft County project area.

Table 13. NOAA Meteorological Stations on Lake Michigan near Delta, Menominee, and Schoolcraft County Project Area

County	Station ID	Location	Owner	Data	Years of Historical Data
Menominee County	MNMM4	Menominee, MI	NOAA's National Ocean Service	Meteorological Observation	2004-Present
Delta County	FPTM4	Fairport, MI	National Weather Service Central Region	Meteorological Observation	2006-Present
Schoolcraft County (near)	PNLM4	Port Inland, MI	NOAA's National Ocean Service	Meteorological Observation	2004-Present

In addition, the Great Lakes Environmental Research Laboratory is a part of NOAA focused on the Great Lakes. It maintains multiple datasets, including a collection of meteorological data for both the United States and Canada. The datasets can be found online at http://www.glerl.noaa.gov .

Stream Gages

The USGS National Water Information System Web Interface http://waterdata.usgs.gov/nwis (accessed July 2012) provides real-time data for any given stream gage location. Table 14 shows the gage identification numbers and locations for the gages in the study areas of Delta, Menominee, and Schoolcraft Counties. USGS stream gage locations are shown on the Discovery Map.

Table 14. Stream Gage Stations in Delta, Menominee, and Schoolcraft County near study area only

County	Gage ID	Begin Date	End Date	Gage Location
Delta County	04059500	10/01/1954	9/30/2000	Ford River near Hyde, MI
Delta County	040590345	6/01/1988	9/30/1990	Escanaba River at Wells, MI
Delta County	040500345	6/01/1988	9/30/1990	Escanaba River at Wells, MI
Menominee County (nearby)	04067651	6/01/1988	10/31/1995	Menominee River at mouth at Marinette, WI
Schoolcraft County	04057004	10/16/1992	10/31/1995	Manistique River above Manistique, MI

Water Level Station

NOAA's Center for Operational Oceanographic Products and Services (CO-OPS) maintains several water level stations along Lake Michigan. CO-OPS' primary motivation is the collection and dissemination of high quality and accurate measurements of lake level for scientific studies.

Great Lakes water levels constitute one of the longest high quality hydrometeorological data sets in North America with reference gage records beginning about 1860 with sporadic records back to the early 1800's. The station information and water level data are available at NOAA CO-OPS Website: http://tidesandcurrents.noaa.gov/station_retrieve.shtml?type=Great Lakes Water Level Data&state=LakeMichigan . The monthly high and low water level data from the year 1918 to 2011 at Lake Michigan are available at the USACE Website: http://www.lre.usace.army.mil/greatlakes/hh/greatlakeswaterlevels/.

Figure 2 depicts Historic Great Lakes Water Levels from 1918 to 2011 (U.S. Army Corps of Engineers, 2012).

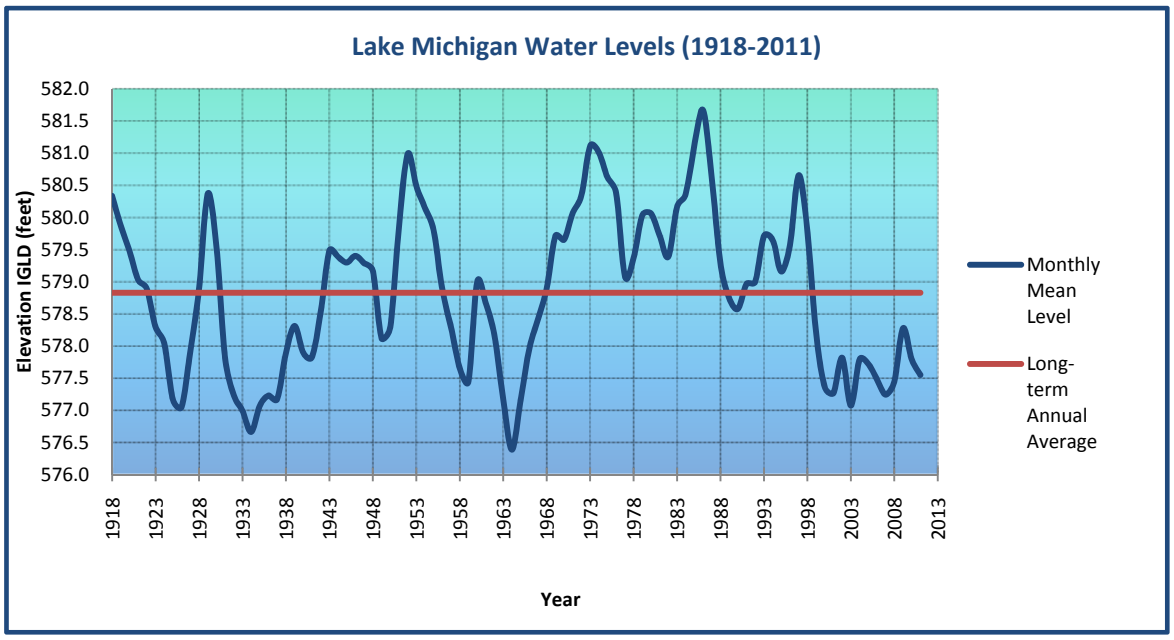


Figure 2: USACE Historic Great Lakes Water Level Data (1918-2011)

The Great Lakes Water Levels Report provides daily mean water levels of Lake Michigan for the past three months. The data are available at the USACE website: http://www.lre.usace.army.mil/greatlakes/hh/greatlakeswaterlevels/currentconditions/great lakes waterlevels/.

Wave Gage/Buoy Stations

The NDBC is a part of the NOAA National Weather Service (NWS). 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 C-MAN stations to help meet these needs. 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 data are available at NDBC website http://www.ndbc.noaa.gov/ .

I.IV.ii.13 Great Lakes Coastal Restoration Grants

The Great Lakes received $475 million for restoration efforts in 2010, as part of the Great Lakes Restoration Initiative, or GLRI. Michigan Sea Grant was awarded more than $1.5 million to help restore particular areas in the region and is leading two projects while assisting on five others. The projects focus on endangered fish, invasive species, beach contamination, water pollution and sound boating and marina operations.

Additional information can be found at Michigan Sea Grant website http://www.miseagrant.umich.edu/explore/restoration/.

I.IV.ii.14 Hazard Mitigation Plans

Hazard mitigation plans are prepared to assist communities to reduce their risk to natural hazard events. The plans are used to develop strategies for risk reduction and to serve as a guide for all mitigation activities in the given county or community.

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 (HMA) grant programs. The status of current hazard mitigation plans is shown in Table 15. The data was obtained from FEMA's Plan Approval Status Report based on Regional reports for the end of June 2012 (Federal Emergency Management Agency, May 2012).

Table 15. Hazard Mitigation Plan Status

JURISDICTION	APPROVAL DATE	EXPIRATION DATE
Delta County (including Garden, Gladstone, and Escanaba)	11/9/2007	11/9/2012
Menominee County (including Cedarville, Ingallston, and Menominee)	4/25/2007	4/25/2012
Schoolcraft County (including Manistique)	11/9/2007	11/9/2012

The Hazard Mitigation Plans for Delta, Menominee, and Schoolcraft Counties have each expired. Grant funding was awarded in 2011 to assist in the update of these plans. Additional information can be found on the CUPPAD website located at http://www.cuppad.org/HazardMigration.html .

I.IV.ii.15 Hazard Mitigation Grant Program

After a major disaster declaration, the Hazard Mitigation Grant Program (HMGP) provides grants to states and local governments to implement long-term hazard mitigation measures. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.

A variety of hazard mitigation projects have been submitted to FEMA's HMGP. A summary of HMGP projects can also be downloaded from https://explore.data.gov/catalog/raw .

I.IV.ii.16 Historical Flooding & High Water Marks

The information in this section has been compiled from local knowledge, FEMA's effective FISs, and the state-level hazard mitigation plan.

As part of this Discovery process, stakeholders identified specific flooding concerns, including ice issues at Sturgeon, Rapid, Ford, and Walton Rivers and general flooding issues in the Village of Garden (Delta County).

The state-level Michigan Hazard Mitigation Plan discusses historic flooding events along the Lake Michigan shoreline. The plan identifies 10 major periods of flooding/erosion that have occurred on the Great Lakes, including along Lake Michigan shoreline, since 1918. This averages to be a period of flooding every 8.3 years along the Great Lakes. The plan can be downloaded from http://www.michigan.gov/.

Short-term causes of flooding include wind, tide, storm surges, barometric changes, and seiching, whereas the primary long-term cause is runoff throughout the Great Lakes Basin.

The Delta County shoreline is subject to severe wind and wave conditions. When lake levels are high and storms occur from the south, shoreline communities located in Delta County are usually subjected to extreme conditions. This combination caused extensive flooding at the head of Little Bay de Noc in January 1975 (Federal Emergency Managment Agency, 1998).

One principal source of flooding in Menominee County is Green Bay when it is at flood stage. Menominee, Michigan (9087088) is the nearest gage currently recording lake water levels. From its establishment in August 2005, the highest recorded water level was 579.69 feet NAVD88 on October 23, 2009. Green Bay, Lake Michigan, Wisconsin (9087078) and Green Bay, Wisconsin (9087079) are two other gages approximately 80 miles south of Menominee County which have been established for longer periods of time and convey similar lake water level tendencies to those in Menominee County. The Green Bay, Lake Michigan, Wisconsin gage was established in July of 1953 and removed in October of 1981. The highest recorded water level was 584.27 feet NAVD88 on April 9, 1973. The Green Bay, Wisconsin gage was established in January of 1980 and has a highest recorded water level of 584.06 feet NAVD88 on December 3, 1990 (Federal Emergency Management Agency, 2012).

In Schoolcraft County, the principal flood problems occur in Manistique when the Manistique River and/or Lake Michigan are at or above flood stage. High runoff causes the Manistique River and other area streams to overflow their banks. The greatest floods recorded at the Manistique River gage near Manistique (located 6 miles northeast of Manistique, and 1 mile downstream of West Branch) occurred during the past 50 years on:

- May 11, 1960 - 16,900 cubic feet per second (cfs) (slightly less than the 100-year flood event)
- April 27, 1939 - 15,400 cfs (about a 50-year flood event)
- April 2, 1938 - 15,000 cfs (slightly less than a 50-year flood event)
- April 22, 1985 - 13,200 cfs (slightly greater than a 20-year flood event)

Shoreline flooding can also occur at Manistique due to high Lake Michigan levels (Federal Emergency Management Agency, 1990).

If local stakeholders have available high water mark data, historical flooding information, or historic flooding photographs they are encouraged to submit them to FEMA Region V Mitigation Division.

I.IV.ii.17 Land Use

Delta, Menominee, and Schoolcraft Counties and local communities utilize land use planning to manage the development of land to help protect natural resources and economic and social conditions, and to ensure best land use options. Each county has a master plan in place to help manage land use. Delta, Menominee, and Schoolcraft communities along the Lake Michigan shoreline also all have floodplain ordinances in

place, which include regulation of development and construction within the effective floodplain.

I.IV.ii.18 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 Website (https://hazards.fema.gov/femaportal/wps/portal) in June 2012.

Table 16 lists the number of LOMCs in the project area per 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 16. Summary of LOMC cases in Delta, Menominee, and Schoolcraft County Project Area

County	Number of Letters of Map Amendments	Number of Letters of Map Revisions – Based on Fill	Number of Letters of Map Revisions – Floodway Removal	Number of Letters of Map Revisions
Delta County	55	2	0	0
Menominee County	65	2	0	0
Schoolcraft County	4	0	1	0

I.IV.ii.19 Locally Identified Mitigation Actions

Local potential mitigation actions and strategies can be viewed within the expired hazard mitigation plans for Delta, Menominee, and Schoolcraft Counties, but were not compiled for this report. Each of these plans is expected to begin the update process in the near future or the update process is already underway as a result of grant funding received in 2011.

The state-level Michigan Hazard Mitigation Plan, updated March 2011, sets forth a State-wide plan for mitigation planning and provides guidance to local communities for identifying mitigation strategies and implementing mitigation actions. While the plan addresses a variety of hazards within the State, the following was captured from the plan regarding flooding (Michigan Department of State Police, Emergency Management and Homeland Security Division, 2011):

In developing mitigation recommendations and implementation strategies for the hazards addressed in this plan, the following general guiding principles have been followed to the extent possible:

- *Non-structural measures have been emphasized over structural measures.*
- *Voluntary measures have been emphasized over mandatory measures.*
- *Education-based compliance and cooperation has been emphasized over legislated mandates.*
- *The least expensive alternative has, in general, been emphasized over more expensive alternatives*

Furthermore, the following additional principles will govern the development and implementation of flood hazard mitigation recommendations:

- *NFIP-participating communities will have priority over non-participating communities.*
- *Communities / sites suffering repetitive losses will have greater emphasis.*
- *Flood mitigation projects will, to the extent possible, be implemented in the following order of priority:*
  1. *Acquisition and relocation or elevation of flood prone structures.*
  2. *Drainage projects (culverts, channels, retention / detention ponds, etc.).*
  3. *Wet and dry flood proofing of structures.*
  4. *Structural measures (floodwalls, dikes, jetties, etc.).*

The State of Michigan has issued a comprehensive document listing Hazard Mitigation Success Stories. This may be a good resource for communities looking for mitigation action ideas that address their local risk concerns. The document was prepared by the Emergency Management and Homeland Security Division, Michigan Department of State Police and Michigan Citizen-Community Emergency Response Coordinating Council (MCCERCC) and was issued in 2011. Michigan Hazard Mitigation Success Stories can be downloaded from http://www.michigan.gov/documents/msp/Michigan_Hazard_Mitigation_Success_Stories_May_2011_Final_Edition_web_355580_7.pdf

During this Discovery process, Areas of Mitigation Interest (AoMI) were identified by the local stakeholders and should be considered for future mitigation actions and incorporation into Hazard Mitigation Plan updates. This includes:

- Ice issues at mouths of the Sturgeon, Rapid, Ford, and Walton Rivers
- Flooding issues identified in the Village of Garden (Delta County)
- Erosion and critical dunes, as identified in a state-wide erosion study

I.IV.ii.20 Ordinances

Local 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) describes the NFIP floodplain ordinance levels and provides 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. Ordinance levels are shown in the table below:

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 information for Delta, Menominee, and Schoolcraft County communities within the project area is shown in Table 17. The information was compiled from FEMA's Community Information System (CIS) in December 2012. CIS did not contain information on ordinance level for all Delta, Menominee, and Schoolcraft County communities in the project area and therefore complete data could not be compiled for this Discovery Report.

Table 17. Program Status and Ordinance Level

County	Community	CID	FIRM Date	Program Status	Ordinance Level
Delta	BAY DE NOC, TOWNSHIP OF	260685	06/08/1998	Participating	N/A
Delta	BRAMPTON, TOWNSHIP OF	260386	06/08/1998	Participating	N/A
Delta	ENSIGN, TOWNSHIP OF	260752	06/08/1998	Participating	N/A
Delta	ESCANABA, CITY OF	260061	06/08/1998	Participating	N/A
Delta	ESCANABA, TOWNSHIP OF	260387	06/08/1998	Participating	N/A
Delta	FAIRBANKS, TOWNSHIP OF	260804	06/08/1998	Participating	N/A
Delta	FORD RIVER, TOWNSHIP OF	260062	06/08/1998	Participating	N/A
Delta	GARDEN, TOWNSHIP OF	260763	06/08/1998	Participating	N/A
Delta	GARDEN, VILLAGE OF	260948	06/08/1998	Participating	C
Delta	GLADSTONE, CITY OF	260267	06/08/1998	Participating	N/A

Table 17. Program Status and Ordinance Level

County	Community	CID	FIRM Date	Program Status	Ordinance Level
Delta	MASONVILLE, TOWNSHIP OF	260687	06/08/1998	Participating	N/A
Delta	NAHMA, TOWNSHIP OF	260688	06/08/1998	Participating	N/A
Delta	WELLS, TOWNSHIP OF	260388	06/08/1998	Participating	N/A
Menominee	CEDARVILLE, TOWNSHIP OF	260659	10/16/2012	Suspended*	N/A
Menominee	INGALLSTON, TOWNSHIP OF	260660	10/16/2012	Participating	D
Menominee	MENOMINEE, CITY OF	260138	10/16/2012	Participating	D
Menominee	MENOMINEE, TOWNSHIP OF	260702	10/16/2012	Participating	D
Schoolcraft	MANISTIQUE, CITY OF	260595	12/05/1990	Participating	N/A
Schoolcraft	THOMPSON, TOWNSHIP OF	260519	No published FIRM – NSFHA	Participating	N/A

CID = community identification
NSFHA – No Special Flood Hazard Areas identified
*Additional information on community suspension from the NFIP can be found by visiting http://www.fema.gov/national-flood-insurance-program-2/suspension

I.IV.ii.21 Proposed Draft Transects

Transects are profiles along which coastal flooding analysis is performed. Transects are used to transform offshore conditions to the shoreline and are used to define coastal flood risks inland of the shoreline. They are placed to define representative profiles for a shoreline reach. 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. The base maps listed earlier in this section (i.e. LiDAR, bathymetry) were reviewed, or will be reviewed once available, to determine revisions to the draft placement for hazard modeling transects along the Lake Michigan shoreline.

The originally proposed draft transect layout is shown on the draft Discovery Map for Delta, Menominee, and Schoolcraft County (Attachment C) and includes an identification number per transect. Note that these identification numbers will change as the draft transects are revised in the future.

Stakeholders were provided with the proposed draft transect shapefiles (GIS digital data) upon request, and the proposed draft transects (Attachment D) were also reviewed by stakeholders during and after the Discovery Meeting. Input from local officials was requested regarding the placement and the number of transects. The detailed comments collected can be found in Attachment E, Stakeholder Comments from Discovery Meeting.

The ID numbers in this table correspond to the location of the comment, which is shown on the Final Discovery Maps in Appendix R of the basin-wide Lake Michigan Discovery Report (Federal Emergency Managment Agency, 2013).

Below is a summary of the comments received during the Discovery Meeting and their impact on revisions to the proposed draft transects along the Lake Michigan shoreline in Delta, Menominee, and Schoolcraft County:

- Delta County: Stakeholders noted several areas of erosion and flooding concern along the shoreline. In these areas, draft transects had already been placed so there was minimal change from the originally proposed draft transects.
- Menominee County: Stakeholders noted areas of flooding concerns, but no specific comments on transect placement or removal. Overall, transects were relocated to sufficiently cover the area where the stakeholder noted considerable flooding.
- Schoolcraft County: Stakeholders identified locations of erosion concern and a critical dune area. Draft transects already existed in these areas in the original draft transect layout so transects were not revised for these areas.

All comments were reviewed and incorporated where possible and a revised proposed draft transect layout was created. This revised transect layout can be found on the Final Discovery Maps in Appendix R of the Lake Michigan basin-wide report (Federal Emergency Managment Agency, 2013). It should be noted that these transects remain subject to change pending future coastal analysis.

I.IV.ii.22 Pre-Disaster Mitigation Program

The Pre-Disaster Mitigation (PDM) program is a nation-wide competitive grant program that was created to assist State and local governments, including Indian Tribe governments, with the funding to implement cost-effective hazard mitigation activities prior to disasters. The intent of this program is to reduce overall risk to people and property, while also minimizing the cost of disaster recovery. Grants awarded during past fiscal years can be downloaded from the Pre-Disaster Mitigation Archives at http://www.fema.gov/pre-disaster-mitigation-grant-program/pre-disaster-mitigation-archives .

I.IV.ii.23 Public Assistance (PA) Grant Program

The mission of FEMA's Public Assistance (PA) Grant Program is to provide assistance to State, Tribal and local governments, and certain types of Private Nonprofit organizations so that communities can quickly respond to and recover from declared disasters or emergencies.

Through the PA Program, FEMA provides supplemental Federal disaster grant assistance for debris removal, emergency protective measures, and the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain Private Non-Profit (PNP) organizations. The PA Program also encourages protection of

these damaged facilities from future events by providing assistance for hazard mitigation measures during the recovery process.

Detailed project descriptions for completed PA projects can be downloaded from https://explore.data.gov/catalog/raw .

I.IV.ii.24 Regulatory Mapping

The effective mapping status for communities in the Delta, Menominee, and Schoolcraft County project area is listed in Table 18.

Table 18. Effective Mapping Status

County	Community	CID	FIRM Date	Program Status
Delta	BAY DE NOC, TOWNSHIP OF	260685	6/8/1998	Participating
Delta	BRAMPTON, TOWNSHIP OF	260386	6/8/1998	Participating
Delta	ENSIGN, TOWNSHIP OF	260752	6/8/1998	Participating
Delta	ESCANABA, CITY OF	260061	6/8/1998	Participating
Delta	ESCANABA, TOWNSHIP OF	260387	6/8/1998	Participating
Delta	FAIRBANKS, TOWNSHIP OF	260804	6/8/1998	Participating
Delta	FORD RIVER, TOWNSHIP OF	260062	6/8/1998	Participating
Delta	GARDEN, TOWNSHIP OF	260763	6/8/1998	Participating
Delta	GARDEN, VILLAGE OF	260948	6/8/1998	Participating
Delta	GLADSTONE, CITY OF	260267	6/8/1998	Participating
Delta	MASONVILLE, TOWNSHIP OF	260687	6/8/1998	Participating
Delta	NAHMA, TOWNSHIP OF	260688	6/8/1998	Participating
Delta	WELLS, TOWNSHIP OF	260388	6/8/1998	Participating
Menominee	CEDARVILLE, TOWNSHIP OF	260659	10/16/2012	Suspended*
Menominee	INGALLSTON, TOWNSHIP OF	260660	10/16/2012	Participating
Menominee	MENOMINEE, CITY OF	260138	10/16/2012	Participating
Menominee	MENOMINEE, TOWNSHIP OF	260702	10/16/2012	Participating
Schoolcraft	MANISTIQUE, CITY OF	260595	12/5/1990	Participating
Schoolcraft	THOMPSON, TOWNSHIP OF	260519	NSFHA	Participating

CID = community identification
NSFHA = No Special Flood Hazard Areas identified
*Additional information on community suspension from the NFIP can be found by visiting http://www.fema.gov/national-flood-insurance-program-2/suspension

Effective FIRMs and FISs can be downloaded from FEMA's Map Service Center (MSC) at https://msc.fema.gov .

I.IV.ii.25 Repetitive Loss/Severe Repetitive Loss

A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling ten-year period, since 1978. A RL property may or may not be currently insured by the NFIP. There are currently over 122,000 repetitive loss properties nationwide.

Structures that flood frequently strain the National Flood Insurance Fund. In fact, the RL properties are the biggest draw on the Fund. FEMA has paid almost $3.5 billion dollars in claims for RL properties. RL properties not only increase the NFIPs annual losses and the need for borrowing funds from Congress, they drain funds needed to prepare for catastrophic events. Community leaders and residents are also concerned with the RL problem because residents' lives are disrupted and may be threatened by the continual flooding.

Over the years, there have been a number of efforts aimed at addressing repetitive losses. Depending on individual circumstances, appropriate mitigation measures commonly include elevating buildings above the level of the base flood, demolishing buildings, and removing buildings from the SFHA as part of a flood control project. Sometimes, mitigation takes the form of a local drainage-improvement project that meets NFIP standards and removes a property or properties from RL or Repetitive Loss Target Group (RLTG) status.

The Repetitive Flood Claims (RFC) grant program was authorized by the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004 (P.L. 108–264), which amended the National Flood Insurance Act (NFIA) of 1968 (42 U.S.C. 4001, et al). Up to $10 million is available annually for FEMA to provide RFC funds to assist states and communities reduce flood damages to insured properties that have had one or more claims to the NFIP. Additional information on this program and other related programs is available at http://www.fema.gov/hazard-mitigation-assistance.

Repetitive losses were reviewed in FEMA's CIS "Community Disaster Detail – Flood Insurance" report. Repetitive losses were not found in Delta or Schoolcraft Counties. In the Township of Menominee in Menominee County, there was one repetitive loss structure identified with a total repetitive loss payment of $6,665.

I.IV.ii.26 Socio-Economic Analysis

In Delta, Menominee, and Schoolcraft County, tourism has become the main industry in recent decades. These Upper Peninsula counties have extensive coastline on Lake Michigan and ample areas of state and national forests, which contribute to the tourism opportunities.

In Delta County, in 2009, lake-related businesses provided 8.4 percent of the total jobs in the County. This accounted just over 1,100 jobs, $12 million in wages, and $24 million in goods & services. This represents a 5 percent decrease in lake jobs since 2005 (National Oceanic & Atmospheric Administration, 2009).

In Menominee County, lake-related businesses provided 5.9 percent of the total jobs in the County in 2009. This accounted for just over 400 jobs, $3 million in wages, and $7 million in goods & services. This represents a 13 percent increase in lake jobs since 2005 (National Oceanic & Atmospheric Administration, 2009).

In Schoolcraft County, in 2009, lake-related businesses provided 5 percent of the total jobs in the County. This accounted for 140 jobs, $1 million in wages, and $3 million in goods & services. This represents a 35 percent decrease in lake jobs since 2005 (National Oceanic & Atmospheric Administration, 2009).

The more homes and people located in a floodplain, the greater the potential for harm from flooding. Impacts are likely to be even greater when additional risk factors (age, income, capabilities) are involved, since people at greatest flood risk may have difficulty evacuating or taking action to reduce potential damage. Delta County has approximately 6 percent of the population located within the floodplain (National Oceanic & Atmospheric Administration, 2009). Data was not available for Menominee or Schoolcraft County.

I.IV.ii.27 State-level Datasets, Programs, and Information

The information in this section was compiled by the project team throughout this Discovery process based on research of the project area and discussions with local and regional stakeholders.

Michigan Coastal Zone Enhancement Program Assessment and Strategy (2011-2016):

Every five years, the Coastal Zone Management Act encourages states and territories to conduct self-evaluations of their coastal management programs to assess significant changes in the state's coastal resources and management practices, identify critical needs, and prioritize areas for enhancement under the Coastal Zone Enhancement Program. More information on this program can be found at http://coastalmanagement.noaa.gov/enhanc.html. The Coastal Zone Enhancement Program Assessment and Strategy can be downloaded at http://coastalmanagement.noaa.gov/mystate/docs/mi3092011.pdf .

The Michigan Coastal Management Program website, located at www.mi.gov/coastalmanagement provides information on the Program including information on its permitting, coastal planning, and technical assistance programs. Michigan's Coastal Management Program was developed under the federal Coastal Zone Management Act and approved in 1978. Since then, the Program has assisted organizations in protecting and enhancing their coastal areas, funded studies related to coastal

management, and helped to increase recreational opportunities in Michigan's Great Lakes coastal area.

Coastal Zone Boundary maps can be downloaded at
http://www.michigan.gov/deq/0,4561,7-135-3313_3677_3696-90802--,00.html

A list of previously awarded coastal management grants can be found here:
http://www.michigan.gov/deq/0,4561,7-135-3313_3677_3696-171451--,00.html

V. Risk MAP Projects and Needs

This section provides information about the planned next steps for the Lake Michigan GLCFS, including information about the upcoming coastal analysis, potential for mitigation technical assistance within the project area, potential for changes in compliance as a result of the coastal flood study, future communications, and how unmet needs will be addressed.

i. Future Coastal Study

Information and data collected as part of this Discovery effort and provided in this report will be utilized in the upcoming coastal flood study for Lake Michigan.

A summary of the GLCFS project, as well as project updates, can be found at http://www.greatlakescoast.org/ under the "Great Lakes Coastal Analysis & Mapping" section.

The following work is expected to be performed for Lake Michigan as part of the GLCFS, pending congressional funding. The scope of work described in this section is therefore subject to change and may not be performed within all Lake Michigan communities.

All engineering and mapping analysis performed as part of this study will follow guidance provided within FEMA's Draft *Guidelines and Specifications for Coastal Studies Along the Great Lakes*, issued on May 8, 2012 (Federal Emergency Management Agency, 2012). 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 assessment product development. A summary is provided below and additional detail may be found in FEMA's basin-wide Lake Michigan Discovery Report (Federal Emergency Managment Agency, 2013).

Engineering & Mapping:
Coastal flood hazard analyses for the coastal communities of the United States located along the Lake Michigan shoreline will be performed. This analysis will include the creation of bathymetric and topographic map data inventory, base map acquisition, and coastal flood hazard analysis.

Draft coastal flood maps (or workmaps) will be produced for the study area. The workmaps will include the 1-percent- and 0.2-percent-annual chance flood hazard areas, Coastal High Hazard (VE Zone) and Coastal A Zone (AE Zone), Base Flood Elevations (BFEs), and Limit of Moderate Wave Action (LiMWA) boundary. The LiMWA boundary identifies the 1.5-foot wave height line and alerts property owners that although their property is in a Zone AE area, it may also be affected by waves 1.5 feet or higher. Communities will be provided with an opportunity to review the workmaps after the coastal analysis is complete and prior to FIRM production.

National Flood Insurance Program Integration:
Regulatory FIRM files may be updated through the FEMA's Physical Map Revision (PMR) process using the results from the work performed in the Engineering and Mapping task described above.

The final production and distribution of updated FIRMs will be dependent on the results of the coastal analysis, discussions with the communities, and congressional funding. Therefore, it cannot be identified at this time the exact communities that will receive updated FIRMs that may require adoption. The risk assessment products and their distribution, discussed below, are also dependent on the results of the coastal analysis and further community discussions and are subject to change.

Risk Assessment Products:
Depending on available data, results of coastal analysis, local needs identified, local partnerships, and fiscal year funding, the coastal flood risk products such as Flood Risk Map, Flood Risk Report, Changes Since Last FIRM (CSLF), Flood Depth and Analysis Grids, and Hazus-MH analyses may be generated for identified coastal communities. Optional Flood Risk Assessment products such as coastal wave height grids, erosion risk determination, and wave hazard severity area datasets have not yet been funded. Table 19 summarizes the products projected for the coastal communities in this project area.

Table 19. Potential Flood Risk Products

County	State	Flood Risk Map and Flood Risk Report	Changes Since Last FIRM	Flood Depth and Analysis Grids	Optional Flood Risk Assessment Products
Delta	MI	✓	-	✓	Not yet funded
Menominee	MI	✓	✓	✓	Not yet funded
Schoolcraft	MI	✓	-	✓	Not yet funded

ii. Potential for Mitigation Assistance

As part of a Risk MAP project, Mitigation Planning Technical Assistance (MPTA) may be available to help communities plan for and reduce risks by providing communities with specialized assistance. MPTA includes risk assessment, mitigation planning, and traditional hazard identification (flood mapping) activities. Technical assistance through MTPA can be performed at any time during the hazard mitigation planning process.

Determining which communities receive MPTA is dependent on identification of a need, the willingness of a community to partner with FEMA, local resources and data availability, and federal funding availability. Unfortunately, not every community will be able to receive MPTA as part of a Risk MAP project. Forming a partnership between FEMA and a local community is an essential part of initiating a MPTA project. Assistance will be prioritized after all data and information is collected and assessed by FEMA in coordination with the local communities to determine where MPTA resources would be beneficial. Communities should alert FEMA of any resources that are available at the local level, and of actions they are interested in implementing in partnership with FEMA. Technical assistance activities should be based on the needs of the community and assist with already established capabilities.

Some technical assistance activities could include (but are not limited to):

- Advising in the creation of initial Hazard Mitigation Plans
- Advising in the update of existing Hazard Mitigation Plans
- Training to improve a community's capabilities for reducing risk
- Assistance in incorporating flood risk datasets and products into potential and effective community legislation, guidance, regulations, procedures, etc.
- Assistance with the creation, acquisition and incorporation of GIS data into potential and effective maps, planning mechanisms, emergency management procedures, etc.
- Facilitating the identification of data gaps and interpret technical data to identify risk reduction definiencies that should be corrected.

Stakeholders noted during this Discovery process that local hazard mitigation plans have expired and efforts are underway to update the plans. It is recommended additional discussion occur between FEMA and these stakeholders as this coastal flood study moves forward to see if MPTA would be an appropriate and beneficial supplemental option.

Continued discussion regarding FEMA partnership with local communities to assist in developing new mitigation actions and moving those actions forward will be essential as this coastal project moves forwards.

iii. Compliance

FEMA uses a number of tools to determine a community's compliance with the minimum regulations of the NFIP. Among them are Community Assisted Contacts (CACs), Community Assistance Visits (CAVs), the Letter of Map Change (LOMC) process, and Submit-for-Rates. These tools help assess a community's implementation of their flood damage reduction regulations and identify any floodplain management deficiencies and violations.

If administrative problems or potential violations are identified, the community will be notified and given the opportunity to correct those administrative procedures and remedy the violations to the maximum extent possible within established deadlines. FEMA or the state will work with the community to help them bring their program into compliance with NFIP requirements. In extreme cases where the community does not take action to bring itself into compliance, FEMA may initiate an enforcement action against the community.

After coastal analysis is completed for this study, communities may be faced with adopting new regulations related to coastal high hazard areas. An understanding of regulations associated with coastal areas will be important so that communities remain compliant. During this Discovery process, stakeholders were provided with information regarding NFIP requirements that are associated with coastal hazard zones, as well as information about new FEMA guidance related to moderate wave action.

These compliance topics, including coastal Special Flood Hazard Areas (SFHAs), building requirements in VE Zones, and Limit of Moderate Wave Action (LiMWA), are discussed in detail at http://www.greatlakescoast.org and in the basin-wide Lake Michigan Discovery Report (Federal Emergency Managment Agency, 2013).

iv. Communication

Throughout this Discovery process, community representatives and local stakeholders indicated the need to be kept informed about the results of Discovery, the upcoming coastal flood study, and opportunities for public input throughout the study process.

Throughout this study process, Federal, State, and local stakeholders will be kept informed via email, phone calls, letters, newsletters, and meetings as appropriate. A dedicated email account was created (GreatLakesFloodStudy@STARR-Team.com) to distribute project information, meeting reminders, and summaries.

Stakeholder involvement will continue to be important through the remainder of the project. The GLCFS website 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 flood study projects, data collection, upcoming meetings, new technical reports, the latest methodologies, factsheets, and additional information.

FEMA encourages stakeholders to remain involved throughout the study process and will seek to identify partnership opportunities during the study process.

v. Unmet Needs

During this Discovery process, stakeholders provided FEMA with a wide variety of information. Some of the information, while valuable, may not be able to be utilized in the upcoming coastal study. In addition, some questions may be unresolved as of the end of this Discovery process. This section seeks to summarize those unmet needs and to provide the steps that may be taken to address them in the future.

During the Discovery Meetings and throughout the Discovery process, Lake Michigan stakeholders were concerned about what to expect in terms of extent of new SFHA boundaries, the possible introduction of VE Zones, the number of property owners who would be affected, and the additional NFIP requirements and flood insurance costs that may go along with a flood map revision. FEMA acknowledged this concern, adding that upcoming engineering and mapping tasks include the distribution of workmaps and other flood risk products designed to give local stakeholders an opportunity to review and comment on flood risk data before the data is carried into NFIP FIRM maps.

In addition, comments related to the proposed draft transects were provided during the Discovery Meeting by local stakeholders. Those comments were incorporated into an updated draft transect layout where possible. However, it should be noted that the draft transects proposed in this report remain subject to change pending future coastal analysis. Stakeholders will be made aware of revised transect locations via the future workmaps that will be provided to local communities for review as the study moves forward.

VI. Close

Federal, State, and local stakeholders that were involved in this Discovery process contributed valuable information about Lake Michigan, including information and data that may be utilized in the upcoming Lake Michigan coastal flood study. The data and opportunities presented in this report will be considered as the study process moves forward and will assist the project team as the Lake Michigan coastal flood study proceeds. FEMA encourages continued participation and engagement from stakeholders throughout this coastal flood study.

The ultimate goal of this Discovery process and the future coastal flood study is to provide updated flood risk information to local stakeholders and to increase awareness of those flood risks, which in turn leads to actions that reduce risk.

VII. References

Central Upper Peninsula Planning & Development Regional Commission. (2012). *Menominee County Master Plan*. Retrieved January 2013, from http://www.menomineecounty.com/i_menominee/d/menominee_county_master_plan.final.10.4.12.pdf

Federal Emergency Management Agency. (2012, May). *FEMA Great Lakes Coastal Guidelines, Appendix D.3 Update DRAFT.* Retrieved September 2012, from FEMA: http://www.fema.gov/library/viewRecord.do?id=5912

Federal Emergency Management Agency. (1990). *Flood Insurance Study, City of Manistique, Michigan.* FEMA.

Federal Emergency Management Agency. (2012). *Flood Insurance Study, Menominee County, Michigan (All Jurisdictions).* FEMA.

Federal Emergency Management Agency. (May 2012). *Mitigation Planning Report with Transmittal Memo.*

Federal Emergency Managment Agency. (2010). *Coordinated Needs Managment Strategy*. Retrieved July 2012, from Coordinated Needs Managment Strategy: http://cnms.riskmapcds.com/HelpCNMS.html

Federal Emergency Managment Agency. (2013). *Discovery Report, Great Lakes Coastal Flood Study, Lake Michigan.*

Federal Emergency Managment Agency. (1998). *Flood Insurance Study, Delta County, Michigan (All Jurisdictions).* FEMA.

Federal Emergency Managment Agency. (2003). *Guildelines and Specifications for Flood Hazard Mapping Partners.*

Federal Emergency Managment Agency. (2011). *HAZUS Flood Average Annualized Loss Usability Analysis.*

Indiana Natural Resources Commission (NRC). (2012). *Coastal Dynamics*. Retrieved October 8, 2012, from http://www.state.in.us/nrc_dnr/lakemichigan/coadyn/coadyna.html

Michigan Department of State Police, Emergency Management and Homeland Security Division. (2011). *Michigan Hazard Mitigation Plan.*

Michigan State Climatologist's Office, Port Huron Station 6680. (2009, June 15). *Michigan State Climatologist's Office*. Retrieved 2010, from Michigan State Climatologist's Office: http://climate.geo.msu.edu

Midwestern Regional Climate Center. (2000). *Climate of the Midwest, 1971-2000*. Retrieved March 31, 2012, from Midwestern Regional Climate Center: http://mcc.sws.uiuc.edu/

National Oceanic & Atmospheric Administration. (2009). *Ocean and Great Lakes Jobs Snapshot*. Retrieved August 2012, from Coastal County Snapshots: www.csc.noaa.gov/snapshots/

U.S. Army Corps of Engineers. (2012, March 23). *Historic Data.* Retrieved August 2012, from U.S. Army Corps of Engineers - Detroit District: http://www.lre.usace.army.mil/greatlakes/hh/greatlakeswaterlevels/historicdata/

U.S. Army Corps of Engineers. (2005). *John Glenn Great Lakes Basin Program Strategic Plan.* United States Army Corps of Engineers.

U.S. Army Corps of Engineers. (2012). Shoreline Feature Dataset. Detroit District, MI.

U.S. Army Corps of Engineers. (October 2012). *Wave Height and Water Level Variability on Lakes Michigan and St. Clair.*

U.S. Census Bureau. (2010). *State and County Quick Facts*. Retrieved July 30, 2012, from http://quickfacts.census.gov

U.S. Environmental Protection Agency. (2012, June 25). *Great Lakes*. Retrieved September 2012, from U.S. Environmental Protection Agency: http://www.epa.gov/glnpo/atlas/gl-fact1.html

U.S. Environmental Protection Agency. (2012a, June 25). *Great Lakes*. Retrieved October 2012, from Lakewide Management Plans: http://www.epa.gov/lakemich/

U.S. Environmental Protection Agency. (2012). *Great Lakes Factsheet No. 1 Physical Features and Population*. Retrieved October 12, 2012, from The Great Lakes: An Environmental Atlas and Resource Book: http://www.epa.gov/glnpo/atlas/gl-fact1.html

VIII. Attachments

Discovery data and information, as well as this report and appendices, have been stored digitally on FEMA's Mapping Information Platform (MIP) Discovery Data Repository at J:\FEMA\DISCOVERY_DATA_REPOSITORY\R05_DATA\ and can be accessed by FEMA authorized users. The MIP can be accessed from https://hazards.fema.gov/. A username and password is required to access certain data within the MIP.

The final Discovery Report and appendices are also available for download from http://www.greatlakescoast.org/.

Attachments in this report include:

Attachment A. Coastal Data Request Form
Attachment B. Delta, Menominee, and Schoolcraft County Pre-Meeting Correspondence
Attachment C. Draft Discovery Maps
Attachment D. Proposed Draft Transect Figures
Attachment E. Stakeholder Comments from Discovery Meeting
Attachment F. Delta, Menominee, and Schoolcraft County Discovery Meeting Documents
Attachment G. Coastal Data Request Form Compilation

ATTACHMENT A

COASTAL DATA REQUEST FORM

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605
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: GreatLakesFloodStudy@starr-team.com
By mail: Scott Banjavcic
CDM Smith/STARR
125 S. Wacker Drive, Suite 600
Chicago, IL 60606

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

Laura Keating, Laura.Keating@starr-team.com, 925-296-8048

Contact Information	
Community/Organization	
Name:	
Title:	
Address:	
E-mail:	
Phone:	
Contact Preference	☐ Email ☐ Phone ☐ Mail

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605
FEMA

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

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605
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:	☐ yes ☐ 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?	☐ yes ☐ no	If yes, please describe:
Does your community have other risk assessment data?	☐ yes ☐ no	If yes, please describe:

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605
FEMA

Flood Mitigation Information		
Does your community have a hazard mitigation plan?	☐ yes ☐ no	If yes, what is the status of the hazard mitigation plan? ☐ being reviewed ☐ it has been adopted ☐ it is currently being updated ☐ it is planned for updates
Does the plan reflect any coastal flood hazards?	☐ yes ☐ 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?	☐ yes ☐ 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.	☐ yes ☐ no	If yes, please describe the projects and their locations:

Any specific coastal mitigation projects?	☐ yes ☐ no	If yes, please explain:
Does your community have experience with coastal flood disasters and flood disaster recovery?	☐ yes ☐ 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?	☐ yes ☐ no	If yes, please explain:

Have you had any prior proactive mitigation actions and planning efforts that resulted in reduced losses? If possible, any coastal specific?	☐ yes ☐ no	If yes, please describe:
Has your community applied and granted Individual Assistance/Public Assistance grants for declared disasters?	☐ yes ☐ no	If yes, please describe and provide the locations of these grants projects:
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?	☐ yes ☐ no	If yes, please describe and provide the locations of on-going/planned/finished grants projects/structures:

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605
FEMA

How would you rank the community's ability to implement mitigation actions and to communicate flood risk to citizens?		☐ high ☐ medium ☐ low
Community Plans and Projects		
Does your community have a comprehensive plan?	☐ yes ☐ no	If you answered yes and you have a hazard mitigation plan, was your hazard mitigation plan coordinated with the comprehensive plan? ☐ yes ☐ no
Does your community's comprehensive plan have a special consideration for coastal areas?	☐ yes ☐ no	If yes, please explain elements/regulations that affect coastal area development.
Does your community have a coastal zone management plan?	☐ yes ☐ no	If yes, please provide a digital or hard copy of the plan.
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?	☐ yes ☐ no	If yes, please explain this group's role in floodplain management and provide examples of the types of programs in place:

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605
FEMA

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):	☐ yes ☐ no	If yes, please describe:
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.)	☐ yes ☐ no	If yes, please describe:
Any other comments/concerns based on local knowledge:		

ATTACHMENT B

DETLA, MENOMINEE, AND SCHOOLCRAFT COUNTY

PRE-MEETING CORRESPONDENCE

Core Stakeholder Pre-Meeting Documents

Information Exchange Session Documents

CEO/FPA Mailing List

Hard Copy Discovery Meeting Invitations

Email Discovery Meeting Invitation

Keating, Laura

Subject:	FEMA Invitation to Lake Michigan/Lake St. Clair Discovery Kickoff Meeting WebEx for Michigan Core Stakeholders
Location:	NEW Phone: (877) 537-6647 Conference ID: 31578 and NEW WebEx
Start:	Thu 6/21/2012 11:00 AM
End:	Thu 6/21/2012 12:30 PM
Show Time As:	Tentative
Recurrence:	(none)
Meeting Status:	Not yet responded
Organizer:	Keating, Laura
Required Attendees:	'Alan Lulloff'; 'Byron Lane (MDEQ)'; 'Catrina Covino'; 'Eric Kuklewski'; 'Erin Maloney'; 'Ernie Sarkipato (MDEQ)'; 'Greg Mausolf (USACE)'; 'Heather Stirratt (NOAA)'; Hillier, Timothy; 'Holly Davis'; 'Jennifer Day (NOAA)'; 'Jerry Fulcher (MI CZM)'; 'Joel Pepper'; 'Julie Tochor'; Keating, Laura; 'Ken Hinterlong'; 'Les Thomas (MDEQ)'; 'Linda Burke (MDEQ)'; 'Maria Zingas (MDEQ)'; 'Mary Weidel (USACE)'; 'Matt Occhipinti (MDEQ)'; 'Matt Schnepp'; 'Michelle Hohn'; 'Mike Hanke'; 'Patrick Durack (MDEQ)'; Randhawa, Jaspreet; 'Richard Foody'; 'Sheila Meier (MDEQ)'; 'Stephen Aichele (USGS)'; 'Susan Conradson (MDEQ)'; 'Tom Smith'; 'Wayne Lasch'; breederl@msu.edu; 'Roberts, Stacey'; Denick, Roger (Roger.Denick@stantec.com); jread@glos.us
Optional Attendees:	Luce, Janet K; Breederland, Mark; Tabar, Jeffrey R

Good Afternoon,

In preparation for this call tomorrow at 1pm CT/2pm ET, please find attached the agenda, as well as a couple handouts that we will discuss during the call.

Michigan_Core_Stakeholder_preD... LCFS_ LiMWA Fact Sheet.pdf MAF-Form.pdf

Also, please note the updated WebEx and call-in number:

WebEx information:

Participant Join URL: https://atkinsglobalna.webex.com/atkinsglobalna/j.php?J=652104155

Meeting Number: 652 104 155
Meeting Password: This meeting does not require a password.

Audio Conference information:
Phone: (877) 537-6647
Conference ID: 31578

Thanks,
Laura Keating

Good Afternoon,

Please note the date change that was made to better accommodate schedules.

As you may know, the Federal Emergency Management Agency (FEMA), in cooperation with the U.S Army Corps of Engineers (USACE), the Association of State Floodplain Managers (ASFPM), and other partners, is conducting a comprehensive study of flood hazards for Lake Michigan coastal communities and along the United States shoreline in other areas of the Great Lakes system. Data from this study will eventually be used to revise Flood Insurance Rate Maps (FIRMs) for coastal communities throughout the region.

As part of the Great Lakes Coastal Flood Mapping and Outreach initiative, STARR (which stands for Strategic Alliance for Risk Reduction) has been contracted by FEMA to perform Discovery for all Lake Michigan coastal communities within Wisconsin, Illinois, Indiana, and Michigan. In addition, STARR will perform Discovery for St. Clair, Macomb and Wayne Counties along Lake St. Clair in Michigan. The Discovery process allows us to engage the communities and other local stakeholders to initiate risk discussions and increase visibility of flood risk information.

You have been identified as a Core Stakeholder for the Lake Michigan and Lake St. Clair Discovery Projects in the State of Michigan. FEMA and STARR would like to hold a one-hour Kickoff Meeting via WebEx/conference call to introduce you to the Discovery process, including identifying Discovery goals and objectives for the Lake Michigan and Lake St. Clair coastal communities in the State of Michigan. We will also review the Lake Michigan and Lake St. Clair Discovery Meeting Plan and discuss State-specific requirements.

You may have recently received a similar Discovery Kickoff Meeting invitation for another State. Although some of the information presented at the other WebEx meetings will be the same, we will be discussing items specific to those counties in Michigan and request that you attend this WebEx as well.

In the past few months, STARR may have already contacted you to participate in a Lake Michigan or Lake St. Clair Technical Workshops. Discovery is another part of the project, and we require your input and feedback to ensure study success. The community-based Discovery Meetings are held following Technical Workshops. Below are the tentative Lake Michigan and Lake St. Clair Discovery Meeting dates for the State of Michigan:

Lake Michigan:

Counties	Venue	Address	Date, Time
Vanburen Berrien	Berrien County Administrative Building	701 Main Street St. Joseph, MI 49085	Monday 09/10/2012 3:00 - 5:00 pm
Ottawa Allegan	Ottawa County Fillmore Street Complex Board Room	12220 Fillmore Street, Rm 310 West Olive, MI 49460	Tuesday 09/11/2012 3:30 - 5:30 pm
Oceana Muskegon	Louis A. McMurray Conference and	2624 Sixth Street Muskegon Heights, MI	Wednesday 09/12/2012 9:00 - 11:00 am

	Transportation Center	49444	
Manistee Mason	Community Room	400 S. Harrison Street Ludington, MI 49431	Wednesday 09/12/2012 3:00 - 5:00 pm
Grand Traverse Benzie Leelanau	Training Room	400 Boardman Avenue Traverse City, MI 49684	Thursday 09/13/2012 1:00 - 3:00 pm
Antrim Charlevoix Emmet	Bellaire Community Hall	202 North Bridge Street Bellaire, MI	Friday 09/14/2012 9:00 - 11:00 am
Mackinac	TBD	TBD	Tentatively planned - Monday 08/13/2012; 3:00 - 5:00 pm
Delta Schoolcraft Menominee	Bay de Noc Community College, Rooms 958 & 962, Escanaba, MI	2001 N. Lincoln Road, Escanaba, MI 49829	Tuesday 08/14/20012; 3:00 - 5:00 PM

Lake St. Clair

Counties	Venue	Address	Date, Time
St. Clair	TBD	TBD	Tentatively planned - 8/20/2012; 9:00 - 11:00 AM
Macomb	Macomb County Verkuilen Building - Tentative as of 3/27/2012	21885 Dunham Rd., Clinton Twp, MI 48036	8/20/2012; 3:00 - 5:00 PM
Wayne	TBD	TBD	Tentatively planned - 8/21/2012; 9:00 - 11:00 AM

Please let me know if the proposed time on this meeting invitation **(1pm CDT/2pm EDT)** is acceptable. We are trying to determine the best time for everyone to participate in the Lake Michigan and Lake St. Clair Discovery Kickoff Meeting WebEx for the State of Michigan.

We look forward to discussing this project with you during the call. Please do not hesitate to contact me if you have any questions.

Sincerely,

Laura Keating, CFM
STARR

Laura.Keating@starr-team.com
Phone/fax: 925-296-8048

NEW WebEx information:

Participant Join URL: https://atkinsglobalna.webex.com/atkinsglobalna/j.php?J=652104155

Meeting Number: 652 104 155
Meeting Password: This meeting does not require a password.

Project Name:	Lake Michigan/Lake St. Clair Discovery Project
Meeting:	Lake Michigan/Lake St. Clair Pre-Discovery Kickoff Meeting for Michigan Core Stakeholders
Date and Time:	Thursday, June 21, 2012 at 1pm CDT/2pm EDT
Place:	**Audio Conference information:** Phone: (877) 537-6647 Conference ID: 31578 Participant Join URL: https://atkinsglobalna.webex.com/atkinsglobalna/j.php?J=652104155 Meeting Number: 652 104 155 Meeting Password: This meeting does not require a password.
Facilitator:	FEMA, STARR

Core Stakeholder Pre-Discovery Kickoff Meeting Agenda

Great Lakes Coastal Flood Study Overview

- Objectives
- Status
- Schedule

Hazard Mitigation Resources, Strategies, and Actions

- Improving Mitigation Strategies
- Introduction to Mitigation Action Form

Discovery Process Overview

- Scope and Schedule
- Discovery Meeting Outcomes
- Introduction to Discovery-phase Data Collection Activities
- Final Discovery Products

Coastal Focus – Information to be Aware Of

- Coastal Flood Risk Datasets
- Transects
- Erosion and Erosion Control Revetments
- LiMWA
- Coastal Zone Mapping

Next Steps

- Community contact lists, draft transects, meeting minutes
- Stakeholder Input

Questions/Comments?

Keating, Laura

Subject:	FEMA's Great Lakes Coastal Flood Study: Discovery Information Exchange Session for Delta, Schoolcraft, and Menominee Counties
Location:	Call in number: 1-866-398-2885 Participant Code: 197462 and WebEx
Start:	Thu 7/26/2012 7:00 AM
End:	Thu 7/26/2012 8:00 AM
Show Time As:	Tentative
Recurrence:	(none)
Meeting Status:	Not yet responded
Organizer:	Keating, Laura
Required Attendees:	Hinterlong, Ken; Keating, Laura; clerk@schoolcraftcounty.us
Optional Attendees:	levans@escanaba.org; sinbradshaw@gmail.com; dhunter@gladstonemi.com; rbarron@gladstonemi.com; vgarden@centurylink.net; townshipgarden@yahoo.com; hollygarden@centurylink.net; beauchampp@yahoo.com; dmaufort@charter.net; tracy@deltacountymi.org; clerk@deltacountymi.org; dandkpeterson@charter.net; assessor@cityofmanistique.org; theresalind@gmail.com; cpand@alpha.comm.net; keefer@ez-net.com; dmenacher@menomineeco.com; krabida@menomineeco.com; Randhawa, Jaspreet; Holly.Davis@atkinsglobal.com

Good Afternoon,

You are receiving this meeting invitation because you have been identified as a ***Lake Michigan*** local community stakeholder. You should have recently received an invitation in the mail from the Federal Emergency Management Agency (FEMA), regarding the ***Great Lakes Coastal Flood Study*** effort, inviting you to attend a Discovery Meeting in August, as well as this information exchange session, scheduled for **Thursday, July 26th at 10am ET**. More information about the ***Great Lakes Coastal Flood Study*** may be found at http://www.greatlakescoast.org.

While the WebEx and call-in information was provided in the letter, I wanted to also provide this information to you via email to serve as a reminder. Below is the call-in and WebEx information:

Date/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

This informal session will begin the process of learning about your available local coastal data, hazard mitigation strategies, and what the critical flooding issues are in your community so that we can then work with you to determine how to utilize that information during FEMA's Great Lakes study. A data request form is attached to help facilitate the discussion. We encourage open discussions throughout this meeting and will use the information to better cater our upcoming Discovery Meetings as well. Attendees of this conference call, as well as the Discovery Meetings, may include, but certainly are not limited to, community leaders, emergency managers, GIS specialists, engineers, outreach specialists, and local planners.

We look forward to speaking with you on Thursday, and appreciate your participation in this process. If you have any questions, or are not able to attend this session but would like to learn more, please do not hesitate to contact me directly. My information can be found below.

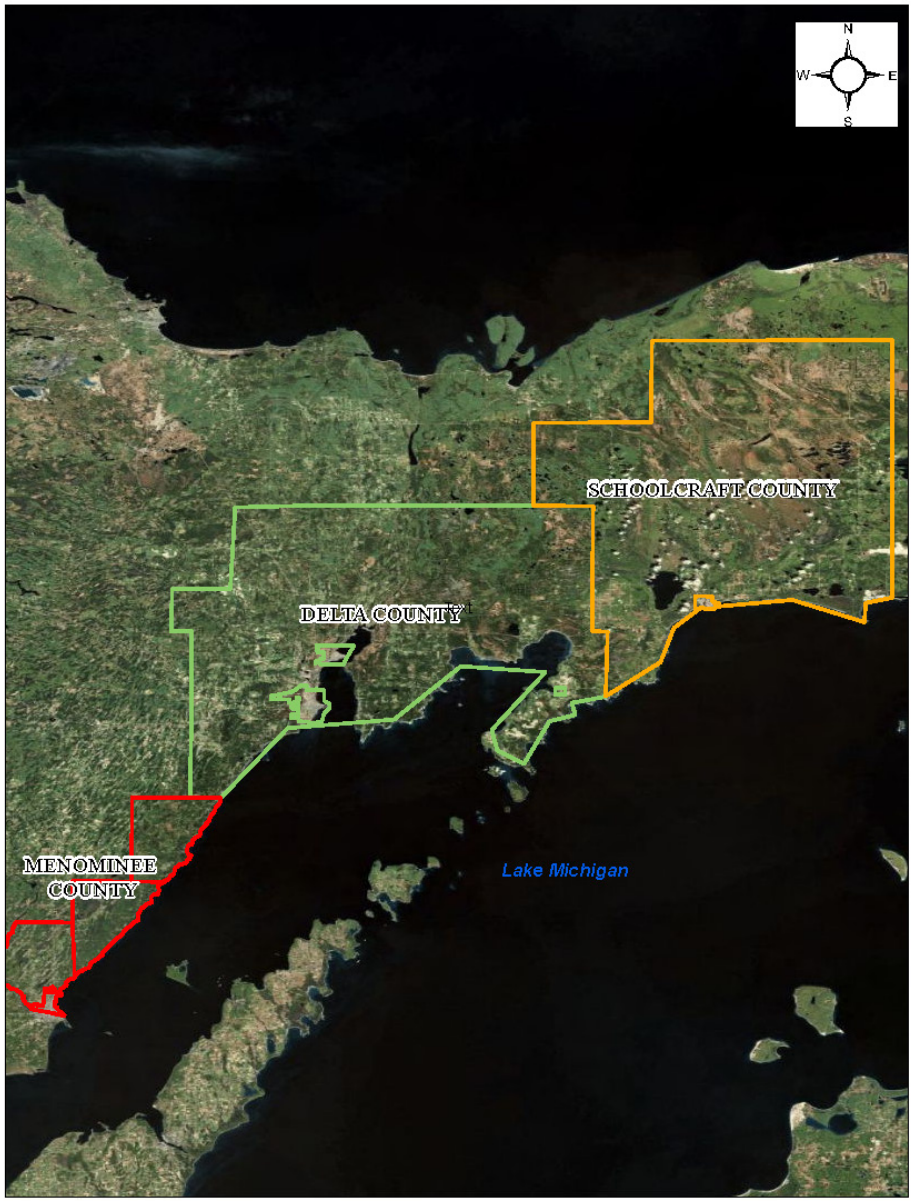
LAKE MICHIGAN
Discovery Coasta...

Thanks,
Laura

Laura Keating, CFM
STARR
direct/fax: 925-296-8048
cell: 617-319-2472

FEMA

Information Exchange Session for Lake Michigan Discovery



Delta, Menominee, and Schoolcraft Counties

July 26, 2012

10am – 11am

RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study

Lake Michigan Discovery Report Appendix D - Delta, Schoolcraft, and Menominee

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

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

Overview of Great Lakes Coastal Flood Study

FEMA

- 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

Hazard Mitigation Resources, Strategies & Actions

FEMA

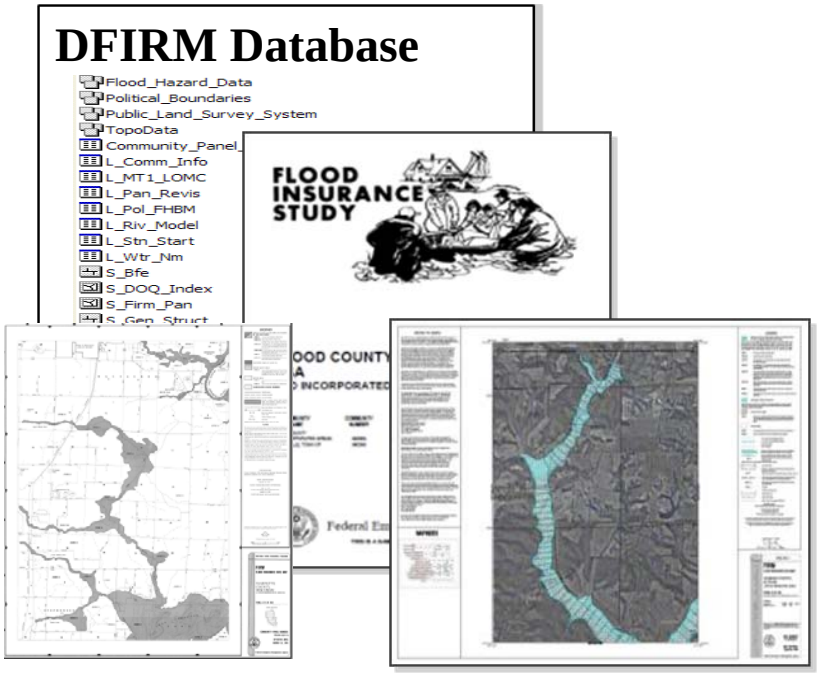
- Recent community hazard mitigation experiences?
  - *Public Works*
  - *Building Standards*
  - *Community Planning and Hazard Mitigation Plan Update*
  - *Communication Processes, GIS, etc.*
- New option to document ideas and actions through the FEMA Mitigation Action Form

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

Products and Datasets: Regulatory and Non-regulatory

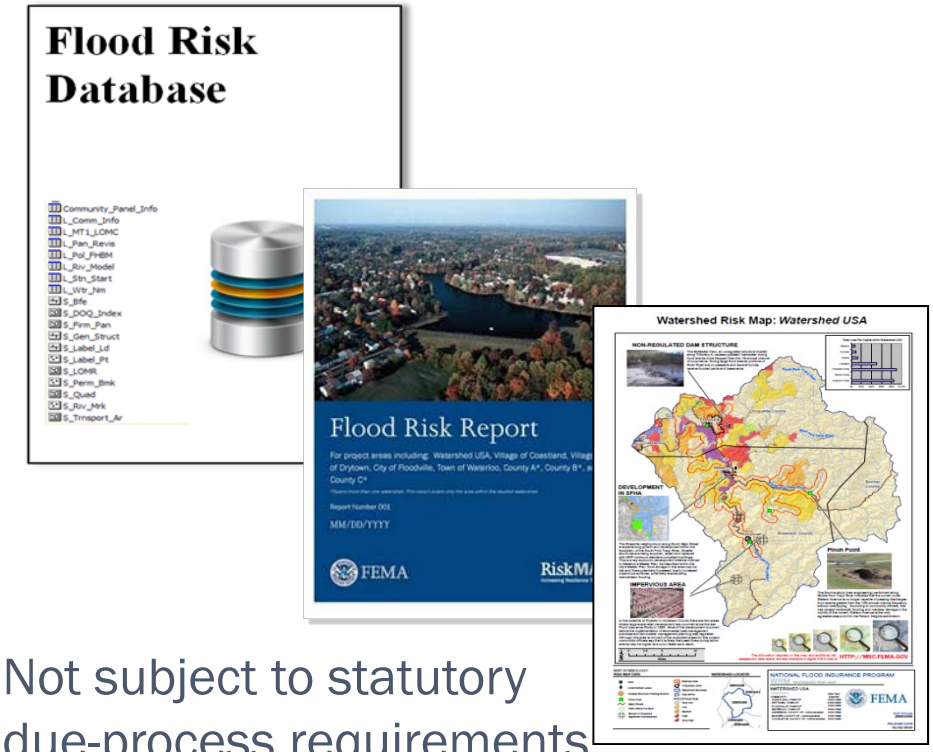
FEMA

Traditional Regulatory Products



Subject to statutory due-process requirements

Non-Regulatory Products



Not subject to statutory due-process requirements

Products and Datasets: Coastal Products in Development

FEMA

Erosion

Red Lantern Restaurant, Lake Michigan, IN

Lake Levels

Lake Michigan Shoreline
Reference

Shoreline Feature Dataset

Upper Peninsula Shoreline
Reference

Risk MAP Overview: Shoreline Features Database

Shoreline Material
Sand
Cohesive
Cobble
Diamicton*
Shingle
Bedrock
Artificial

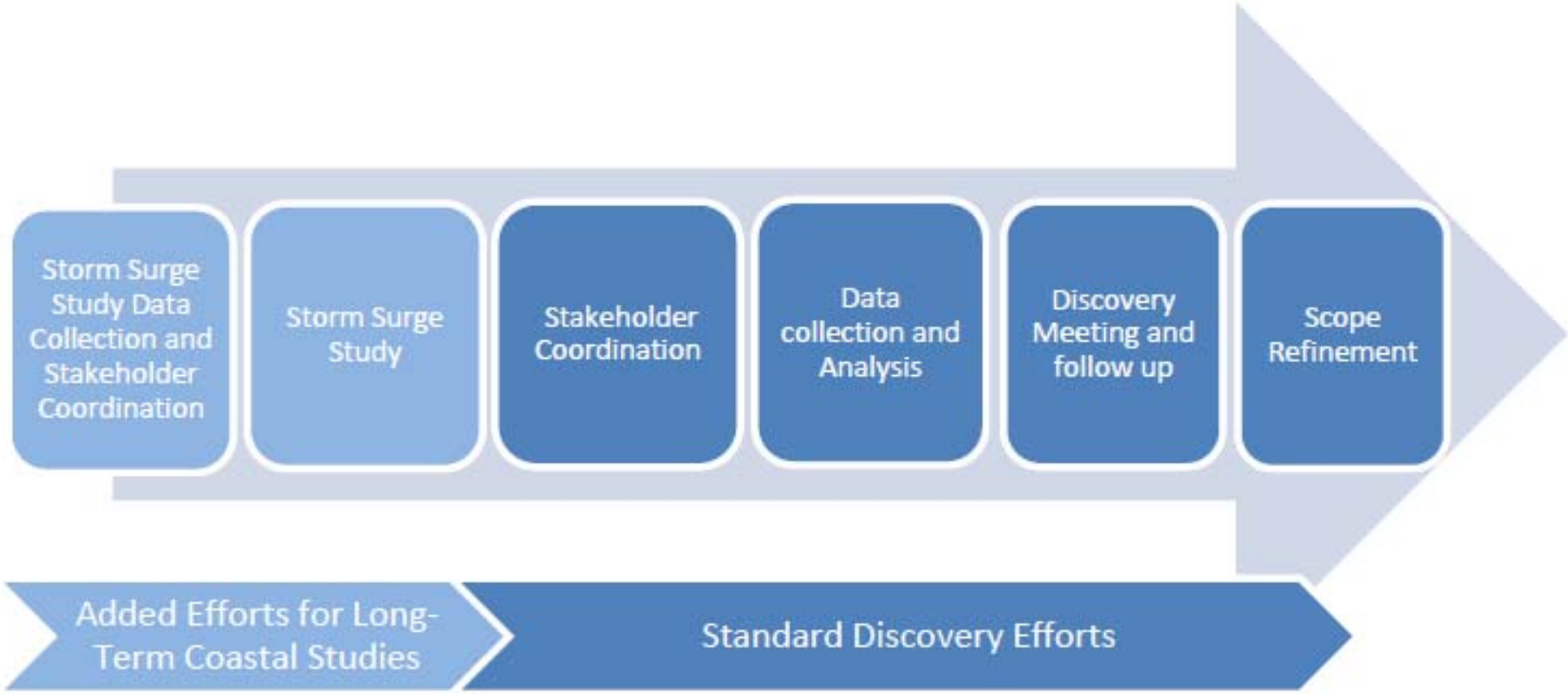
Primary Land Use
High Density Residential
Moderate Density Residential
Low Density Residential
Commercial/Industrial
Park Land
Farm Land
Forested

Primary Coast Type
High Dune, 10'+
Dune, 2' - 10'
High Bluff, 10'+
Bluff, 2' - 10'
Coastal Wetland
Flat Coast

Primary Vegetation
None
High Density Shrubs/Trees
Moderate Density Shrubs/Trees
Low Density Shrubs/Trees
Manicured Lawn
Native Vegetation

- 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

Great Lakes Coastal Flood Study
Discovery Process Overview



Great Lakes Coastal Flood Study
Discovery Meeting

Discovery Meeting Venue	Discovery Meeting Address	Discovery Meeting Date, Time
Bay de Noc Community College, Rooms 958 & 962	2001 N. Lincoln Road, Escanaba, MI 49829	Tuesday 08/14/20012; 2:00 - 4:00 PM ET

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.

Great Lakes Coastal Flood Study
Discovery Products

- **Final Discovery Report**
  - Single, comprehensive report for all of Lake Michigan, with appendices for each coastal community by county
  - 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

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

Great Lakes Coastal Flood Study
Discovery Study Area

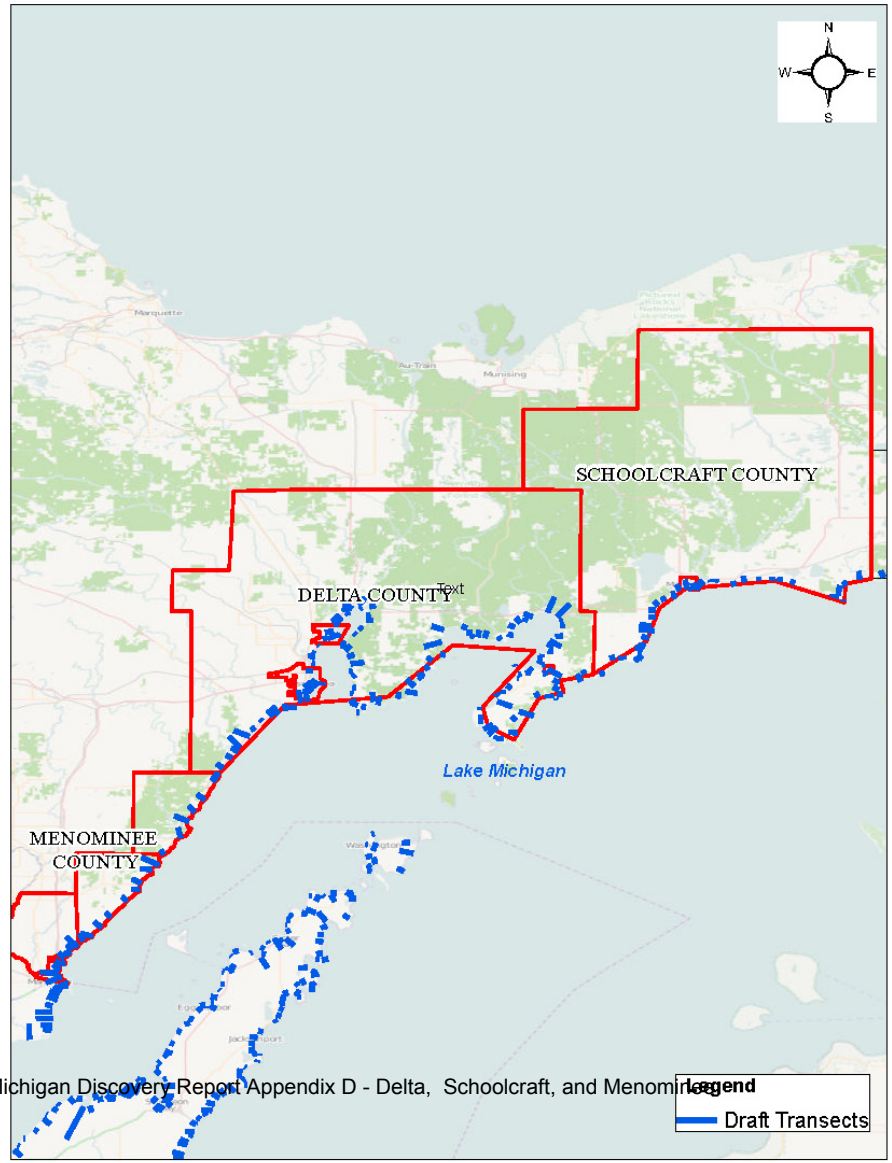
FEMA

Lake Michigan coastal communities in Delta, Menominee, and Schoolcraft Counties:

Delta County
Escanaba (City and Township)
Garden
Gladstone
Bay de Noc
Brampton
Ensign
Fairbanks
Ford River
Garden (Township and Village)
Masonville
Nahma
Wells

Menominee County
Menominee (City and Township)
Cedarville
Ingallston

Schoolcraft County
Manistique
Thompson



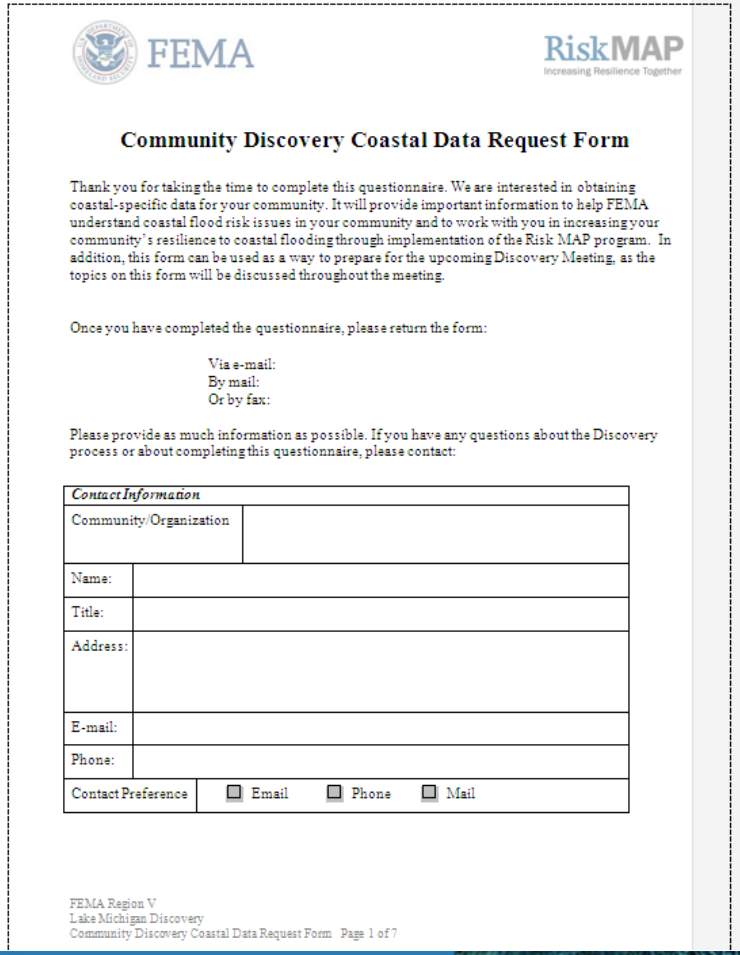
Lake Michigan Discovery Report Appendix D - Delta, Schoolcraft, and Menominee

RiskMAP
Increasing Resilience Together

Great Lakes Coastal

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



FEMA

RiskMAP
Increasing Resilience Together

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:
By mail:
Or by fax:

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

Contact Information	
Community/Organization	
Name:	
Title:	
Address:	
E-mail:	
Phone:	
Contact Preference	☐ Email ☐ Phone ☐ Mail

FEMA Region V
Lake Michigan Discovery
Community Discovery Coastal Data Request Form Page 1 of 7

Review of Data Collected To Date

- Draft Transects
- Shoreline Classification Dataset
- Hazard Mitigation Plans
- Hazard Mitigation Grants Program (HMGP) projects
- Pre-Disaster Mitigation Program projects
- Declared Disasters
- Repetitive loss claims by community

Incident Type	Incident Begin Date	Incident End Date	Declared County/Area
Flood	4/12/1973	4/12/1973	Menominee (County)

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!

Who to Contact

- For more information: http://www.greatlakescoast.org/
- Send completed questionnaires to:
  - GreatLakesFloodStudy@starr-team.com
- FEMA Region V
  - Ken Hinterlong @ ken.hinterlong@fema.dhs.gov
  - Erin Maloney @ Erin.Maloney@fema.dhs.gov
- STARR
  - Laura Keating @ laura.keating@starr-team.com
  - Jaspreet Randhawa @ Jaspreet.Randhawa@starr-team.com

Questions?

Community CEO/FPA List - Menominee County, Michigan - July 2012

County/City/Township	First/ Last Name	Title	Address	ZIP	Phone	Email
Menominee, Township	Ken Goffin	Supervisor	N4561 County Road 577, Wallace, MI	49893	(906) 863-9770	none
Menominee, City	Jean Stegeman	Mayor	2511 10th Street, Menominee, MI	49858	(906) 863-2656	
	Thomas Lesperance	Building Inspector (FPA)	2511 10th Street, Menominee, MI	49858	(906) 863-2656	
Ingallston, Township	Paul Anderson	Supervisor (FPA)	W3790 Town Hall Lane, Number 13.5, Wallace, MI	49893	(906) 788-4487 - home	cpand@alpha.comm.net
	Kay Keefer	Clerk	W3701 County Road 338, Wallace, MI (this is Kay's home address)	49893	906.863.2885 - home	keefer@ez-net.com
Cedarville, Township	Linda E. Peterson	Supervisor	N10663 Co. Rd. 551, Cedar River, MI	49887	(906) 280-2443	
Menominee, County	James Furlong	County Board Chair	4208 North Shore Drive, Menominee, MI	49858	(715) 587-7288	
	Trina Rabida	Emergency Management Director	S904 US Highway 41, Stephenson, MI	49887	(906) 753-6343	dmenacher@menomineeco.com
	Daniel Menacher	Building Inspector	839 10th Avenue, Menominee, MI	49858	(906) 863-9817	krabida@menomineeco.com

Community CEO/FPA List - Delta County, Michigan - July 2012

County/City/Township	First/ Last Name	Title	Address	Address	ZIP	Phone	Email
Escanaba, City	Leo J. Evans	Mayor	City Hall	410 Ludington Street,	49829	(906) 786-9402	levans@escanaba.org
	Terry Flower	Assistant City Engineer (FPA)	City Hall	1715 Sheridan Road, Escanaba, MI	49829	906.789.3795	tflower@escanaba.org
Wells, Township	William Farley	Supervisor		6436 N. 8th St., P.O. Box 188,	49894	(906) 786-0839	none
Nahma, Township	Cindy Bradshaw	Supervisor		9751 EE.25 Road, Rapid River, MI	49878	(906) 420-1790	sinbradshaw@gmail.com
	Glenn Lamberg	Recreation Coordinator					
Masonville, Township	Peter R. Brock	Supervisor, Assessor		10697 S.75 Rd., Rapid River, MI	49878	(906) 474-6554	
Gladstone, City	Darin S. Hunter	Mayor		P.O. Box 32, Gladstone	49837	(906) 428-2311	dhunter@gladstonemi.com
	Renee Barron	Community Development Director (FPA)		P.O. Box 32, Gladstone	49837	(906) 428-4586	rbarron@gladstonemi.com
Garden, Village	Connie Wilson	Village President	Village Hall	Post Office Box 147/15951 Garden Avenue, Garden, MI	49835	906.644.2398	vgarden@centurylink.net
Garden, Township	Morgan Tatrow	Supervisor (FPA)	Township Hall	Post Office Box 224/6313 State Street, Garden, MI	49835		townshipgarden@yahoo.com
Ford River, Township	Charlie Detiege	Supervisor		2125 H Road, Bark River, MI	49807	(906) 399-6411	none
Fairbanks, Township	Ron Collins	Supervisor	Township Hall	11th Road, Garden, MI (no mail)	49835		no email address for him
	Kathryn Denholm	Clerk		2676 II Road, Garden, MI	49835		
	Linda Ranquette	Treasurer					hollygarden@centurylink.net
Escanaba, Township	Kevin P. Dubord	Supervisor and Assessor	Township Hall	They do not receive mail there.		(906) 786-3437	beauchampp@yahoo.com
	Patricia Beauchamp	Clerk		7893 County 416 J Road, Gladstone, MI	49873	906.789.9050	beauchampp@yahoo.com
Ensign, Township	John Wolf	Supervisor and Assessor (FPA)		9332 County 511 W.5 Road, Rapid River, MI	49878		
	Lynn Forhart	Treasurer		8501 Schaawe Lake 24th Lane, Rapid River, MI	49878		
Brampton, Township	Dennis Maufort	Supervisor		6737 Oak Bluff 23.7 Drive, Gladstone, MI	49837	(906) 428-1005	dmaufort@charter.net

Community CEO/FPA List - Delta County, Michigan - July 2012

County/City/Township	First/ Last Name	Title	Address	Address	ZIP	Phone	Email
Bay De Noc, Township	Ginny Dahlin	Supervisor and Assessor	Township Hall	5870 County 513 T Road, Rapid River, MI	49878		
	Emma L. Sundstrom	Clerk	Township Hall	5870 County 513 T Road, Rapid River, MI	49878		
Delta, County	Tracy Lantagne	Commissioner's Office		310 Ludington Street, Escanaba, MI	49829	(906) 789-5100	tracy@deltacountymi.org
	Nancy Kolich	County Clerk		310 Ludington Street,	49829	(906) 789-5105	clerk@deltacountymi.org

Community CEO/FPA List - Schoolcraft County, Michigan - July 2012

County/City/Township	First/ Last Name	Title	Address	Address	ZIP	Phone	Email
Manistique, City	David C. Peterson	Mayor	City Hall	Post Office Box 515/300 North Maple Street, Manistique, MI	49854	(906) 341-2290	dandkpeterson@charter.net
	Fred Peterson	City Tax Assessor	City Hall	Post Office Box 515/300 North Maple Street, Manistique, MI	49854	(906) 341-5564	assessor@cityofmanistique.org
Thompson, Township	Theresa Lund	Supervisor, Township Board	Township Hall	Post Office Box 174/Pine Street US 2, Manistique, MI	49854	906.341.5761	theresalind@gmail.com
Schoolcraft, County	Allen Grimm	County Board Chair		300 Main St., Manistique, MI	49854	(906) 341-6405	
	Robert Madden	Emergency Management Director		300 Main St., Manistique, MI	49854	(906) 341-2122	

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Ms. Ginny Dahlin
Supervisor and Assessor, Bay De Noc Township
Township Hall
5870 County 513 T Road
Rapid River, Michigan 49878

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Ms. Dahlin:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Emma Sundstrom, Clerk, Bay De Noc Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Dennis Maufort
Supervisor, Brampton Township
6737 Oak Bluff 23.7 Drive
Gladstone, Michigan 49837

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Maufort:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:

Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

The Honorable Leo Evans
Mayor, City of Escanaba
City Hall
410 Ludington Street
Escanaba, Michigan 49829

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mayor Evans:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

The Honorable Darin Hunter
Mayor, City of Gladstone
P.O. Box 32
Gladstone, Michigan 49837

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mayor Hunter:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Renee Barron, Community Development Director, City of Gladstone
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Ms. Tracy Lantagne
Commissioner's Office, Delta County
310 Ludington Street
Escanaba, Michigan 49829

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Ms. Lantagne:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Nancy Kolich, County Clerk, Delta County
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. John Wolf
Supervisor and Assessor, Ensign Towship
9332 County 511 W.5 Road
Rapid River, Michigan 49878

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Wolf:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Lynn Forhart, Treasurer, Ensign Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Kevin Dubord
Supervisor and Assessor, Escanaba Township
7893 County 416 J Road
Gladstone, Michigan 49873

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Dubord:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Patricia Beauchamp, Clerk, Escanaba Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Ron Collins
Supervisor, Fairbanks Township
Township Hall
11th Road
Garden, Michigan 49835

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Collins:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Kathryn Denholm, Clerk, Fairbanks Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Charlie Detiege
Supervisor, Ford River Township
2125 H Road
Bark River, Michigan 49807

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Detiege:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:

Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605
FEMA

July 12, 2012

Mr. Morgan Tatrow
Supervisor, Garden Township
Township Hall
6313 State Street
Post Office Box 224
Garden, Michigan 49835

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Tatrow:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Peter Brock
Supervisor, Assessor, Masonville Township
10697 S.75 Road
Rapid River, Michigan 49878

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Brock:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:

Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Ms. Cindy Bradshaw
Supervisor, Nahma Township
9751 EE.25 Road
Rapid River, Michigan 49787

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Ms. Bradshaw:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:

Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Ms. Connie Wilson
Village President, Village of Garden
Village Hall
15951 Garden Avenue
Post Office Box 147
Garden, Michigan 49835

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Ms. Wilson:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. William Farley
Supervisor, Wells Township
6436 North 8th Street
P.O. Box 188
Wells, Michigan 49894

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Farley:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Brent Sharpe
Supervisor, Bois Blanc Township
Township Hall
Post Office Box 895
Pointe Aux Pins, Michigan 49775

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Sharpe:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Joan Schroka, Township Clerk, Bois Blanc Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

The Honorable Margaret Doud
Mayor, City of Mackinac Island
City Hall
Post Office Box 455
Mackinac, Michigan 49757

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mayor Doud:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Dennis Dombroski, Building Inspector, City of Mackinac Island
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605
FEMA

July 12, 2012

The Honorable Paul Grondin
Mayor, City of St. Ignace
City Hall
396 North State Street
Saint Ignace, Michigan 49781

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mayor Grondin:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Les Therrian, City Manager, City of St. Ignace
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Gerald Hill
Supervisor, Clark Township
Township Hall
Post Office Box 367
Cedarville, Michigan 49719

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Hill:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Ken Waybrant, Building Inspector, Clark Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Cleo Smith
Supervisor, Garfield Township
Township Hall
Post Office Box 148
Engadine, Michigan 49827

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Smith:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: David Kovar, Building Inspector, Garfield Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Russell Nelson
Supervisor, Hendricks Township
6051 West US 2
Naubinway, Michigan 49762

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Nelson:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Barbara Price, Clerk, Hendricks Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Al Garavagalia
Supervisor, Hudson Township
W7803 Hiawatha Trail
Naubinway, Michigan 49762

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Garavagalia:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: David Kovar, Building inspector, Hudson Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Ms. Mary Kay Tamlyn
Chief Deputy Clerk, Mackinac County
100 South Marley
Room 10
Saint Ignace, Michigan 49781

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Ms. Tamlyn:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. John Kronemeyer
Supervisor, Marquette Township
Township Hall
7177 East James Street
Pickford, Michigan 49774

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Kronemeyer:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Frank Sims, Building Inspector, Marquette Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Patrick Durm
Supervisor, Moran Township
Township Hall
West 362 US 2
Post Office Box 364
Saint Ignace, Michigan 49781

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Durm:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Mark Spencer, Zoning Administrator, Moran Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Bob Brotherton
Supervisor, Newton Township
Township Hall
N6164 South Gould City Road
Gould, Michigan 49838

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Brotherton:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Monday, August 13, 2012; 1:00 - 3:00 pm ET
Location:	Saint Ignace Public Library
Address:	110 West Spruce Street Saint Ignace, Michigan 49781

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Wednesday, July 25, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Richard Oliver, Building Inspector, Newton Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Ms. Linda Peterson
Supervisor, Cedarville Township
N10663 County Road 551
Cedar River, Michigan 49887

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Ms. Peterson:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:

Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

The Honorable Jean Stegeman
Mayor, City of Menominee
2511 10th Street
Menominee, Michigan 49858

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mayor Stegeman:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Thomas Lesperance, Building Inspector, City of Menominee
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605
FEMA

July 12, 2012

The Honorable Paul Anderson
Supervisor, Ingallston Township
Township Hall
W3790 Town Hall Lane
Number 13.5
Wallace, Michigan 49893

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mayor Anderson:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Kay Keefer, Clerk, Ingallston Township
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. James Furlong
County Board Chair, Menominee County
4208 North Shore Drive
Menominee, Michigan 49858

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Furlong:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Daniel Menacher, Building Inspector, Menominee County
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Ken Goffin
Supervisor, Menominee Township
N4561 County Road 577
Wallace, Michigan 49893

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Goffin:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:

Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

The Honorable David Peterson
Mayor, City of Manistique
City Hall
300 North Maple Street
Post Office Box 515
Manistique, Michigan 49854

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mayor Peterson:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Fred Peterson, City Tax Assessor, City of Manistique
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Mr. Allen Grimm
County Board Chair, Schoolcraft County
300 Main Street
Manistique, Michigan 49854

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Mr. Grimm:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc: Robert Madden, Emergency Management Director, Schoolcraft County
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605

FEMA

July 12, 2012

Ms. Theresa Lund
Township Board Supervisor, Thompson Township
Township Hall
Pine Street US 2
Post Office Box 174
Manistique, Michigan 49854

Re: Invitation to Attend Community Meetings Regarding Lake Michigan Coastal Flood Risk

Dear Ms. Lund:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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 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/Time:	Tuesday, August 14, 2012; 2:00 - 4:00 pm ET
Location:	Bay de Noc Community College, Rooms 958 & 962
Address:	2001 North Lincoln Road Escanaba, Michigan 49829

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 contractor (STARR) Scott

Banjavcic at (312) 780-7755 or email to GreatLakesFloodStudy@starr-team.com no later than **August 3, 2012.** Please reference the Discovery Meeting date and time in your RSVP.

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, 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/Time:	Thursday, July 26, 2012; 10:00 - 11:00 am ET
Link to WebEx:	http://e-meetings.verizonbusiness.com/nc/join.php
Meeting Number:	445288484
Call in number:	1-866-398-2885
Participant Code:	197462

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 **August 3, 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:	GreatLakesFloodStudy@starr-team.com
By mail:	Scott Banjavcic CDM Smith/STARR 125 S. Wacker Drive, Suite 600 Chicago, Illinois 60606

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 Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@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

Christine Stack
Division Director
Mitigation Division, FEMA Region V

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

cc:
Linda Burke, Michigan Department of Environmental Quality
Les Thomas, Michigan Department of Environmental Quality
Byron Lane, Michigan Department of Environmental Quality

Keating, Laura

From: Banjavcic, Scott
Sent: Tuesday, August 07, 2012 9:13 AM
To: Keating, Laura
Subject: FW: Test Message - Text Format:Invitation to Michigan Community Meetings Re: Lake Michigan Coastal Flood Risk

-----Original Message-----
From: Great Lakes Coastal Flood Study [mailto:Great_Lakes_Coastal_Flood_Study@mail.vresp.com]
Sent: Friday, July 27, 2012 1:55 PM
To: Banjavcic, Scott
Subject: Test Message - Text Format:Invitation to Michigan Community Meetings Re: Lake Michigan Coastal Flood Risk

Dear State of Michigan Lake Michigan Coastal Flood Study
Stakeholders:

The Federal Emergency Management Agency (FEMA) is conducting a comprehensive study of flood hazards for Lake Michigan 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. More information about the Great Lakes Coastal Flood Study may be found at http://cts.vresp.com/c/?OPP/1877897f4f/TEST/d963a8f31e .

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 actions that local stakeholders can take to reduce natural hazard risks. For additional information on the Risk MAP Program, please visit
http://cts.vresp.com/c/?OPP/1877897f4f/TEST/c2cd6b8fb3 .

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

We would like to invite you to attend one of the following Discovery Meetings being held in Michigan for Lake Michigan. Although each Discovery Meeting will give the same overall message, each meeting will be catered to the coastal communities within the counties listed
below:

Vanburen County and Berrien County (Discovery Meeting) Monday, September 10, 2012 2:00 - 4:00 pm Berrien County Administrative Building
701 Main Street
St. Joseph, MI 49085

Ottawa County and Allegan County (Discovery Meeting) Tuesday, September 11, 2012 9:00 - 11:00 am Ottawa County Fillmore Street Complex Board Room 12220 Fillmore Street, Room 310 West Olive, MI 49460

Oceana County and Muskegon County (Discovery Meeting) Wednesday, September 12, 2012 9:00 - 11:00 am Louis A. McMurray Conference and Transportation Center
2624 Sixth Street
Muskegon Heights, MI 49444

Manistee County and Mason County (Discovery Meeting) Wednesday, September 12, 2012 3:00 - 5:00 pm Community Room 400 S. Harrison Street Ludington, MI 49431

Grand Traverse County, Benzie County and Leelanau County (Discovery Meeting)
Thursday, September 13, 2012
1:00 - 3:00 pm
Training Room
400 Boardman Avenue
Traverse City, MI 49684

Antrim County, Charlevoix County and Emmet County (Discovery Meeting) Friday, September 14, 2012 9:00 - 11:00 am Bellaire Community Hall
202 North Bridge Street
Bellaire, MI

Mackinac County (Discovery Meeting)
Monday, August 13, 2012
1:00 - 3:00 pm
St. Ignace Public Library
110 W. Spruce Street,
St. Ignace, MI 49781

Delta County, Schoolcraft County and Menominee County (Discovery Meeting)
Tuesday, August 14, 2012
2:00 - 4:00 pm
Bay de Noc Community College, Rooms 958 & 962
2001 N. Lincoln Road
Escanaba, MI 49829

Please save this date on your calendar. At the meetings, we will review the coastal flood risk data we have gathered to date and discuss local coastal floodplains, mitigation plan and projects, coastal flood risk concerns, and coastal floodplain management activities. This discussion will allow us to better identify local 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.
Please RSVP to FEMA's study contractor (STARR) Holly Davis at (904) 363-8451 or email to GreatLakesFloodStudy@starr-team.com no later than one week prior to the meeting you are attending. Please reference the Discovery Meeting date and time in your RSVP.

A Community Coastal Data Request Form was recently mailed to local community officials, along with the Discovery Meeting invitation.
This form is also available online at:
http://cts.vresp.com/c/?OPP/1877897f4f/TEST/f62289beff .

If you have data or information that you would like to provide to FEMA or discuss with us in advance of the Discovery Meetings, please also contact Holly Davis of STARR at (904) 363-8451 or by email at GreatLakesFloodStudy@starr-team.com .

We look forward to working with you to reduce the risks associated with coastal flooding and increase resiliency for the long term. To learn more about Discovery, please visit http://cts.vresp.com/c/?OPP/1877897f4f/TEST/a06a5a30cc and search keywords "Discovery brochure" or contact Ken Hinterlong, FEMA Region V Senior Engineer, at (312) 408-5529, or by email at ken.hinterlong@fema.dhs.gov . We look forward to seeing you at the upcoming Discovery Meeting.

For additional information on the Great Lakes Coastal Flood Study, please visit:
http://cts.vresp.com/c/?OPP/1877897f4f/TEST/84afb74985 .

- http://cts.vresp.com/c/?OPP/1877897f4f/TEST/ed8183944d
Follow GreatLakesCoast on Twitter | -
http://cts.vresp.com/c/?OPP/1877897f4f/TEST/38e5050317
Like GreatLakesCoast on Facebook

Click to view this email in a browser
http://hosted.verticalresponse.com/290205/1877897f4f/TEST/TEST/

If you want to "Unsubscribe" from this list and no longer receive emails regarding the Great Lakes Coastal Flood Study, please click on the following link:

http://cts.vresp.com/u?1877897f4f/TEST/TEST

This message was sent by Great Lakes Coastal Flood Study using VerticalResponse

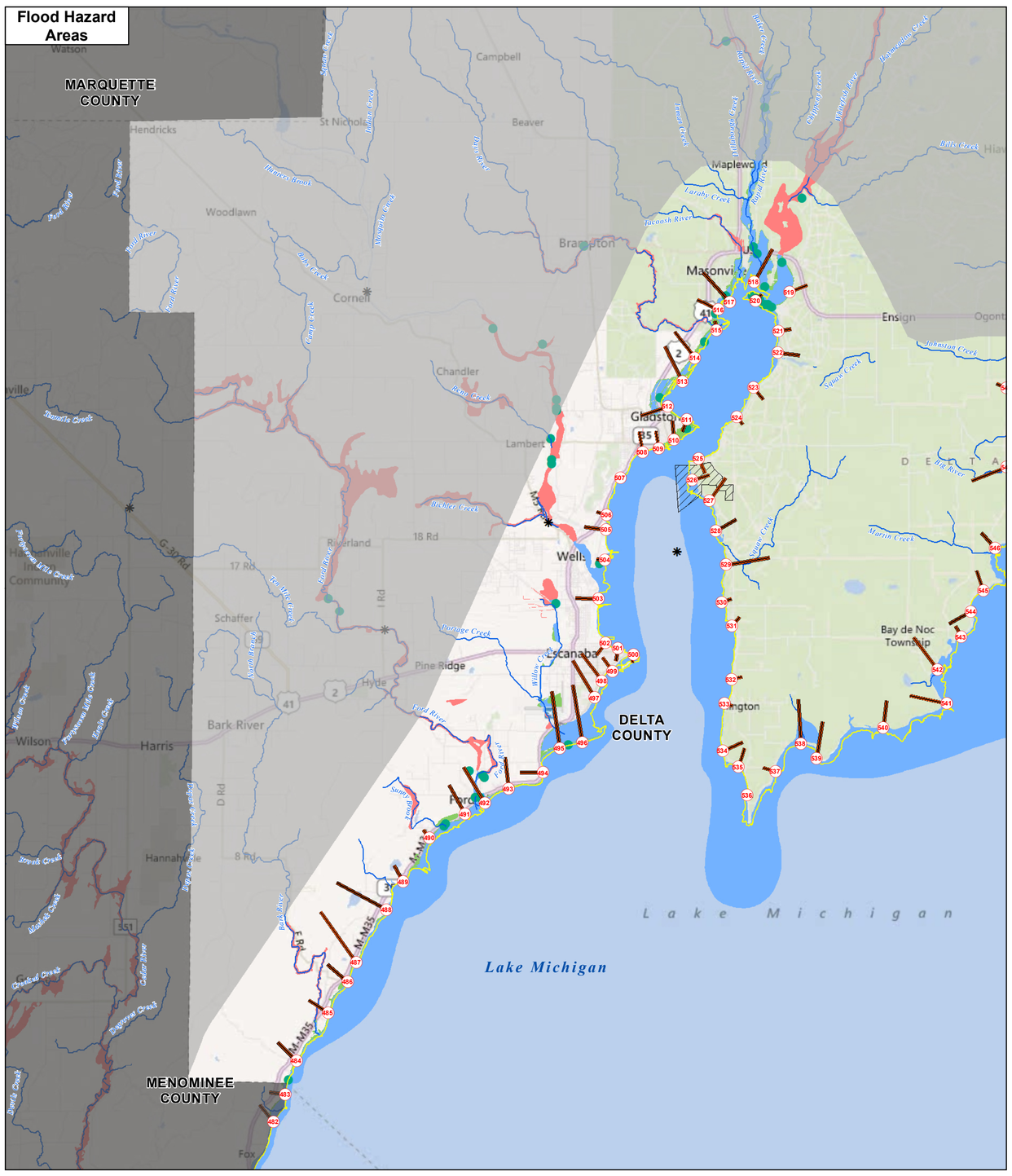
Great Lakes Coastal Flood Study
2809 Fish Hatchery Road, Suite 204
Madison, WI 53713
US

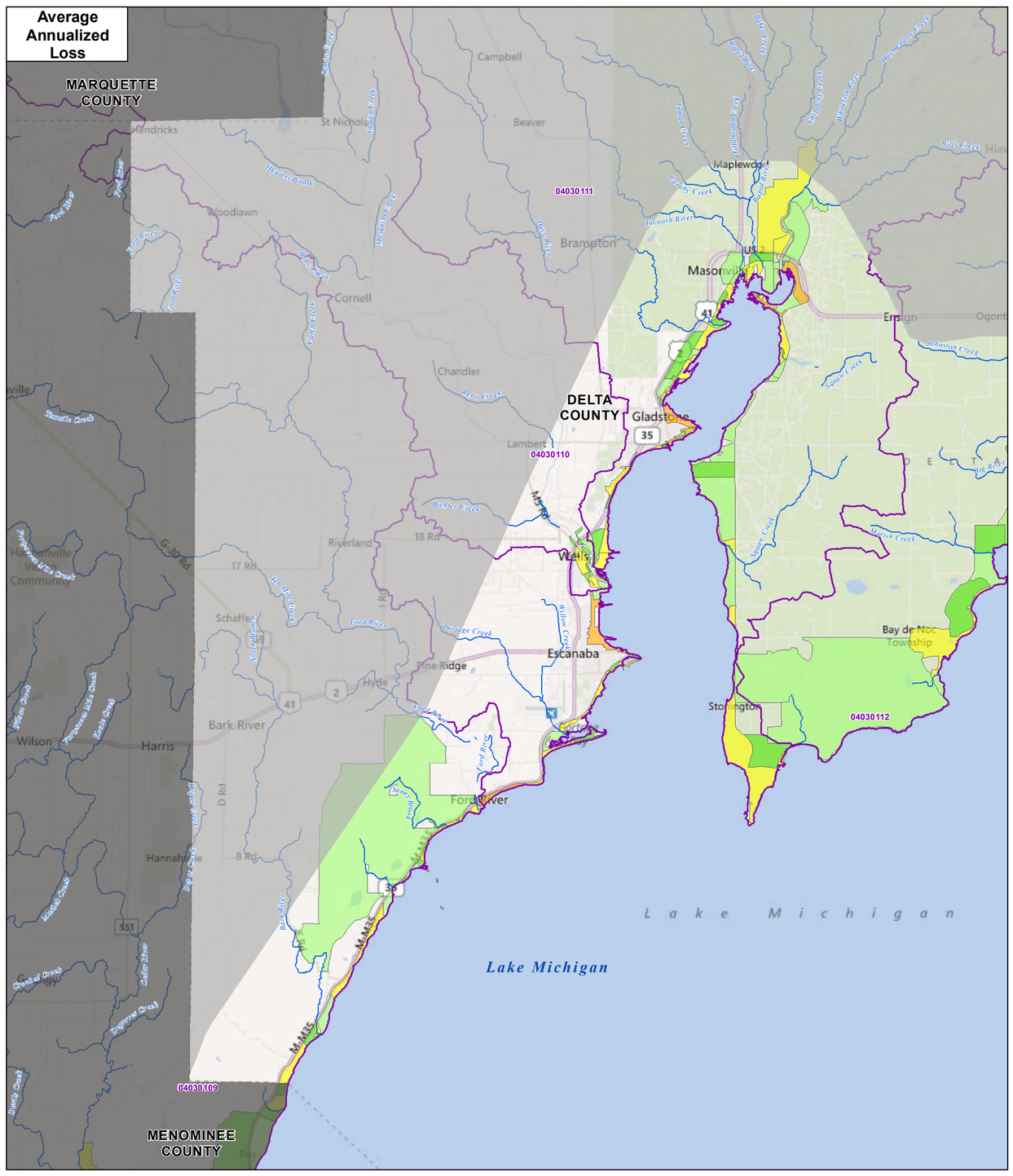
Read the VerticalResponse marketing policy:
http://www.verticalresponse.com/content/pm_policy.html

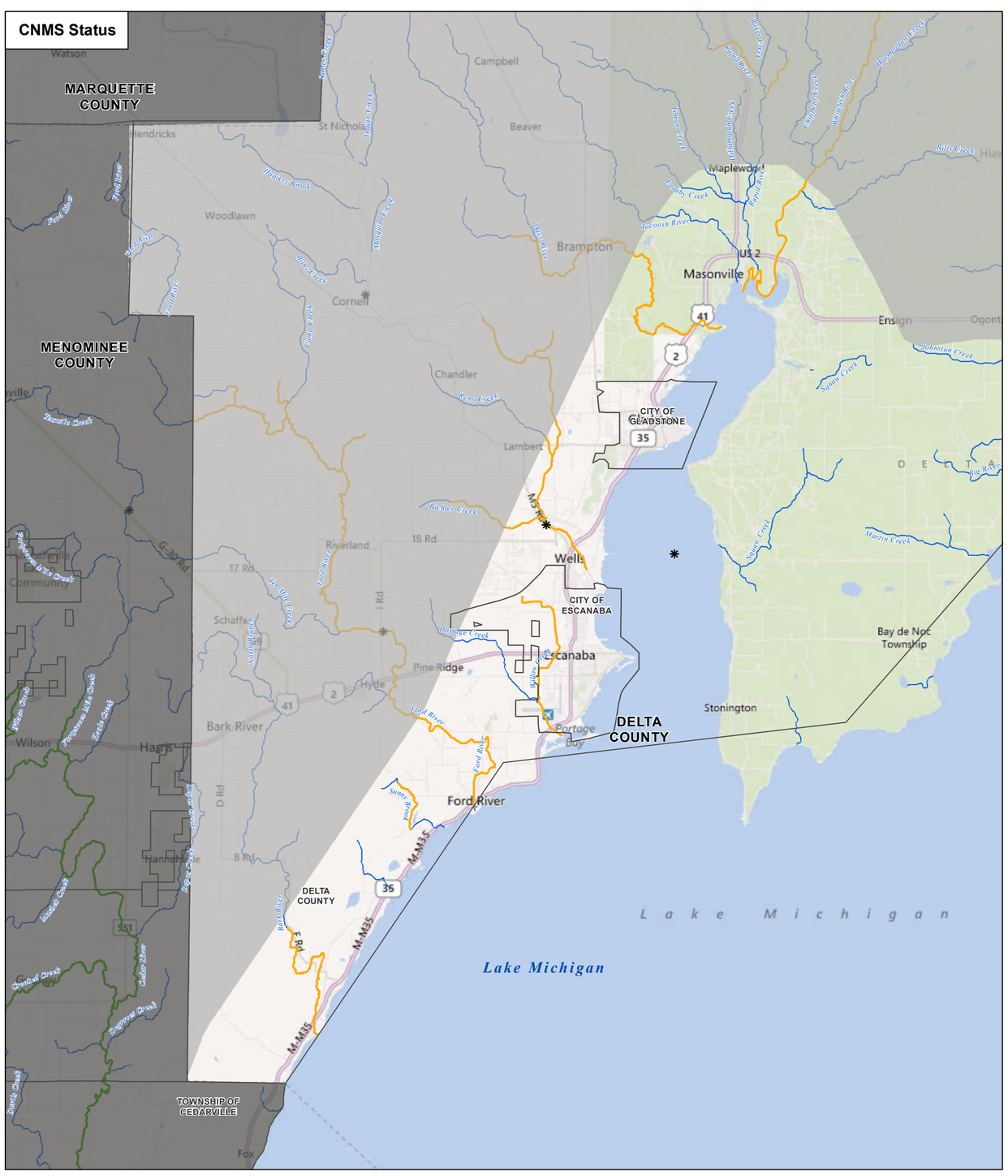
ATTACHMENT C

DELTA, MENOMINEE, AND SCHOOLCRAFT COUNTY

DRAFT DISCOVERY MAPS







Declared Disasters

Lake	State	Declared County/Area	Declaration Date	Disaster Type	Incident Type	Description
Lake Michigan	MI	Delta (County)	5/10/1994	DR	Snow	SEVERE DEEP FREEZE
Lake Michigan	MI	Delta (County)	3/2/1977	EM	Drought	DROUGHT
Lake Michigan	MI	Delta (County)	1/27/1978	EM	Snow	BLIZZARDS & SNOWSTORMS
Lake Michigan	MI	Delta (County)	9/7/2005	EM	Hurricane	HURRICANE KATRINA EVACUATION

Summary of Flood Insurance Policies and Claims

Lake	State	County	Community	CID	No. Policies	Total Premium	Total Coverage	Number of claims since 1978	Dollar ($) paid for claims since 1978
Lake Michigan	MI	Delta	Bay de Noc, Township of	260685	3	$1,442	$423,000	0	$0
Lake Michigan	MI	Delta	Brampton, Township of	260386	1	$1,221	$210,000	0	$0
Lake Michigan	MI	Delta	Ensign, Township of	260752	1	$1,646	$180,000	0	$0
Lake Michigan	MI	Delta	Escanaba, City of	260061	0	$0	$0	3	$1,696
Lake Michigan	MI	Delta	Escanaba, Township of	260387	2	$1,588	$424,800	1	$0
Lake Michigan	MI	Delta	Fairbanks, Township of	260804	No Data	$0	$0	0	$0
Lake Michigan	MI	Delta	Ford River, Township of	260062	9	$6,545	$1,069,900	2	$11,825
Lake Michigan	MI	Delta	Garden, Township of	260763	1	$1,172	$300,000	0	$0
Lake Michigan	MI	Delta	Garden, Village of	260948	1	$211	$70,000	0	$0
Lake Michigan	MI	Delta	Gladstone, City of	260267	2	$515	$123,200	2	$4,033
Lake Michigan	MI	Delta	Masonville, Township of	260687	23	$16,720	$2,607,700	1	$466
Lake Michigan	MI	Delta	Nahma, Township of	260688	8	$3,435	$574,000	1	$0
Lake Michigan	MI	Delta	Wells, Township of	260388	4	$2,377	$716,100	1	$811

Mitigation Action

Name of Plan	Plan Expiration Date	Identified Hazard Mitigation Action
Delta County	11/9/2012	N/A
City of Escanaba	11/9/2012	N/A
City of Gardne	11/9/2012	N/A
City of Gladstone	11/9/2012	N/A

Summary of Shoreline Type

Total Shoreline (mile)	Artificial Shoreline (mile)	Boulders, Bedrock (mile)	Cohesive Clays and Silts (mile)	Sand (mile)	Shingles, Pebbles, Cobbles (Mile)	Other (mile)
235.0	14.3	89.2	0.0	97.8	33.7	0.0

Summary of Shoreline Coverage

Total Shoreline (mile)	Bluff 2'-10' (mile)	Coastal Wetland	Dune 2'-10' (mile)	Flat Coast (mile)	High Bluff 10'+ (mile)	High Dune 10'+ (mile)	Other (mile)
235.0	13.1	3.1	23.3	182.5	12.4	0.6	0.0

N

0 5 10 20 Miles

MAP SYMBOLOGY

LEGEND

- Dams
- LOMCs
- USGS Gages
- Transects
- Shoreline
- Streams
- Watersheds (HUC 8)
- Coastal Barrier Resource System
- Coastal Discovery Areas
- Surrounding Counties
- Municipal Boundaries

EFFECTIVE SFHA

- A
- AE
- 0.2% PCT ANNUAL CHANCE FLOOD

AAL DATA
Total Average Annualized Losses per Census Block

- Less than $10,000
- $10,001 - $100,000
- $100,001 - $1,000,000
- $1,000,001 - $5,000,000
- Greater than $5,000,000

Coordinated Needs Management Strategy (CNMS)
Validation Status

- Unverified
- Unknown
- Valid

COASTAL STUDY LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM
Discovery Map

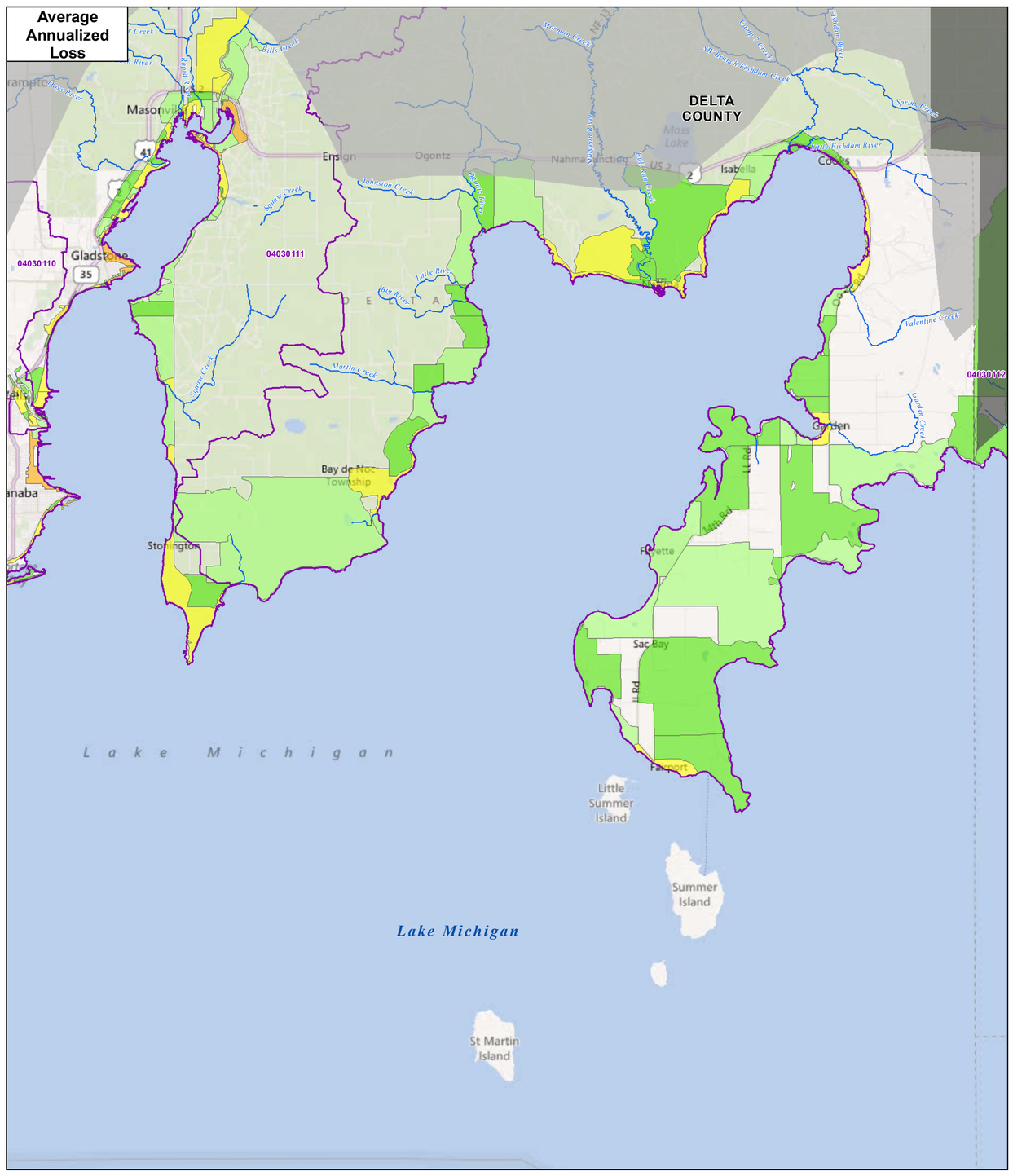
LAKE MICHIGAN COASTAL STUDY

DELTA COUNTY, MICHIGAN COASTAL STUDY COMMUNITIES
PAGE 1 of 2

Delta County
Bay de Noc, Township of
Brampton, Township of
Ensign, Township of
Escanaba, City of
Escanaba, Township of
Fairbanks, Township of
Ford River, Township of
Garden, Township of
Garden, Village of
Gladstone, City of
Masonville, Township of
Nahma, Township of
Wells, Township of

STARR

FEMA



Declared Disasters

Lake	State	Declared County/Area	Declaration Date	Disaster Type	Incident Type	Description
Lake Michigan	MI	Delta (County)	5/10/1994	DR	Snow	SEVERE DEEP FREEZE
Lake Michigan	MI	Delta (County)	3/2/1977	EM	Drought	DROUGHT
Lake Michigan	MI	Delta (County)	1/27/1978	EM	Snow	BLIZZARDS & SNOWSTORMS
Lake Michigan	MI	Delta (County)	9/7/2005	EM	Hurricane	HURRICANE KATRINA EVACUATION

Summary of Flood Insurance Policies and Claims

Lake	State	County	Community	CID	No. Policies	Total Premium	Total Coverage	Number of claims since 1978	Dollar ($) paid for claims since 1978
Lake Michigan	MI	Delta	Bay de Noc, Township of	260685	3	$1,442	$423,000	0	$0
Lake Michigan	MI	Delta	Brampton, Township of	260386	1	$1,221	$210,000	0	$0
Lake Michigan	MI	Delta	Ensign, Township of	260752	1	$1,646	$180,000	0	$0
Lake Michigan	MI	Delta	Escanaba, City of	260061	0	$0	$0	3	$1,696
Lake Michigan	MI	Delta	Escanaba, Township of	260387	2	$1,588	$424,800	1	$0
Lake Michigan	MI	Delta	Fairbanks, Township of	260804	No Data	$0	$0	0	$0
Lake Michigan	MI	Delta	Ford River, Township of	260062	9	$6,545	$1,069,900	2	$11,825
Lake Michigan	MI	Delta	Garden, Township of	260763	1	$1,172	$300,000	0	$0
Lake Michigan	MI	Delta	Garden, Village of	260948	1	$211	$70,000	0	$0
Lake Michigan	MI	Delta	Gladstone, City of	260267	2	$515	$123,200	2	$4,033
Lake Michigan	MI	Delta	Masonville, Township of	260687	23	$16,720	$2,607,700	1	$466
Lake Michigan	MI	Delta	Nahma, Township of	260688	8	$3,435	$574,000	1	$0
Lake Michigan	MI	Delta	Wells, Township of	260388	4	$2,377	$716,100	1	$811

Mitigation Action

Name of Plan	Plan Expiration Date	Identified Hazard Mitigation Action
Delta County	11/9/2012	N/A
City of Escanaba	11/9/2012	N/A
City of Gardne	11/9/2012	N/A
City of Gladstone	11/9/2012	N/A

Summary of Shoreline Type

Total Shoreline (mile)	Artificial Shoreline (mile)	Boulders, Bedrock (mile)	Cohesive Clays and Silts (mile)	Sand (mile)	Shingles, Pebbles, Cobbles (Mile)	Other (mile)
235.0	14.3	89.2	0.0	97.8	33.7	0.0

Summary of Shoreline Coverage

Total Shoreline (mile)	Bluff 2'-10' (mile)	Coastal Wetland	Dune 2'-10' (mile)	Flat Coast (mile)	High Bluff 10'+ (mile)	High Dune 10'+ (mile)	Other (mile)
235.0	13.1	3.1	23.3	182.5	12.4	0.6	0.0

N

0 5 10 20 Miles

MAP SYMBOLOGY

LEGEND

- Dams
- LOMCs
- USGS Gages
- Transects
- Shoreline
- Streams
- Watersheds (HUC 8)
- Coastal Barrier Resource System
- Coastal Discovery Areas
- Surrounding Counties
- Municipal Boundaries

EFFECTIVE SFHA

- A
- AE
- 0.2% PCT ANNUAL CHANCE FLOOD

AAL DATA
Total Average Annualized Losses per Census Block

- Less than $10,000
- $10,001 - $100,000
- $100,001 - $1,000,000
- $1,000,001 - $5,000,000
- Greater than $5,000,000

Coordinated Needs Management Strategy (CNMS)
Validation Status

- Unverified
- Unknown
- Valid

COASTAL STUDY LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM
Discovery Map

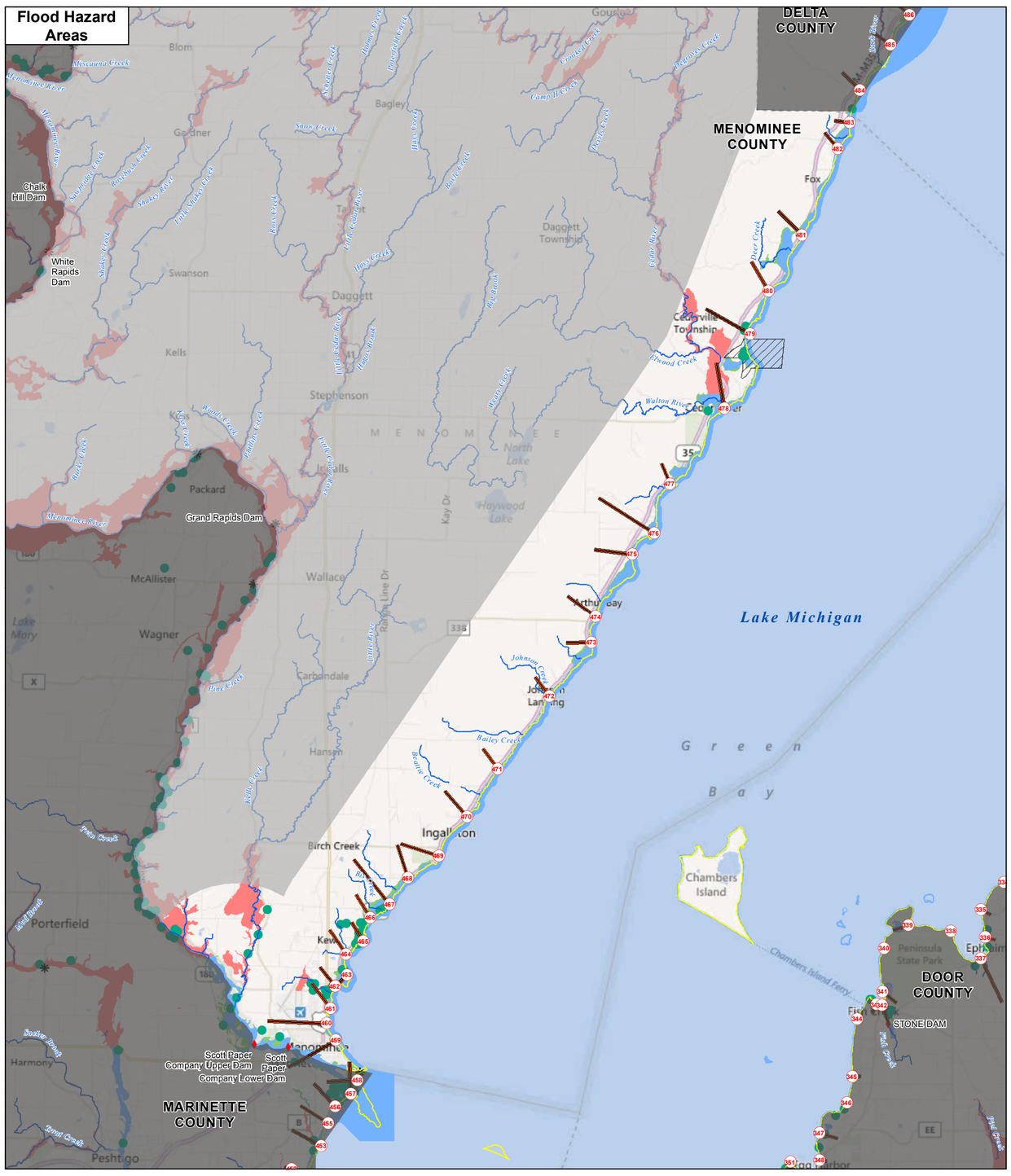
LAKE MICHIGAN COASTAL STUDY

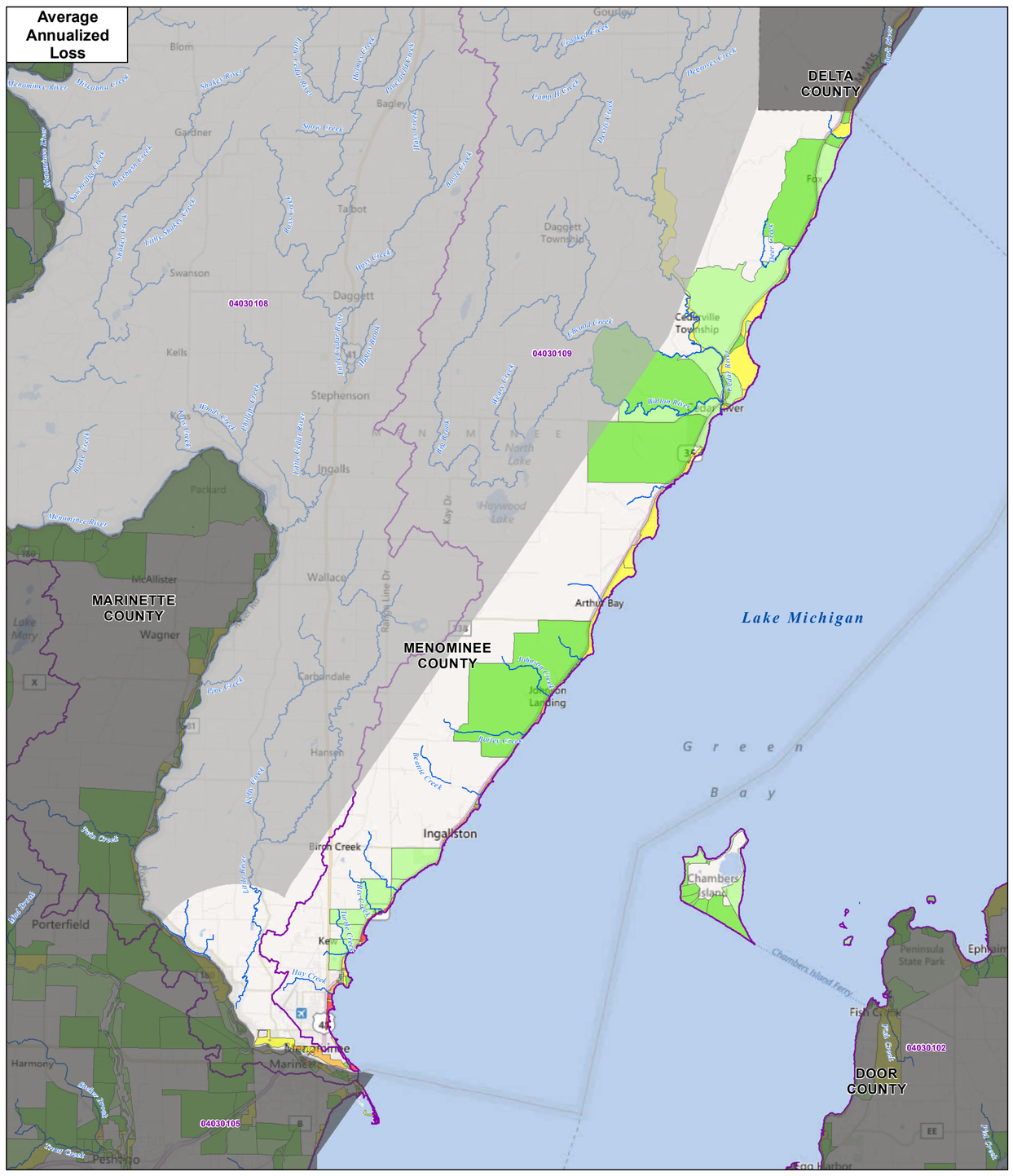
DELTA COUNTY, MICHIGAN COASTAL STUDY COMMUNITIES
PAGE 2 of 2

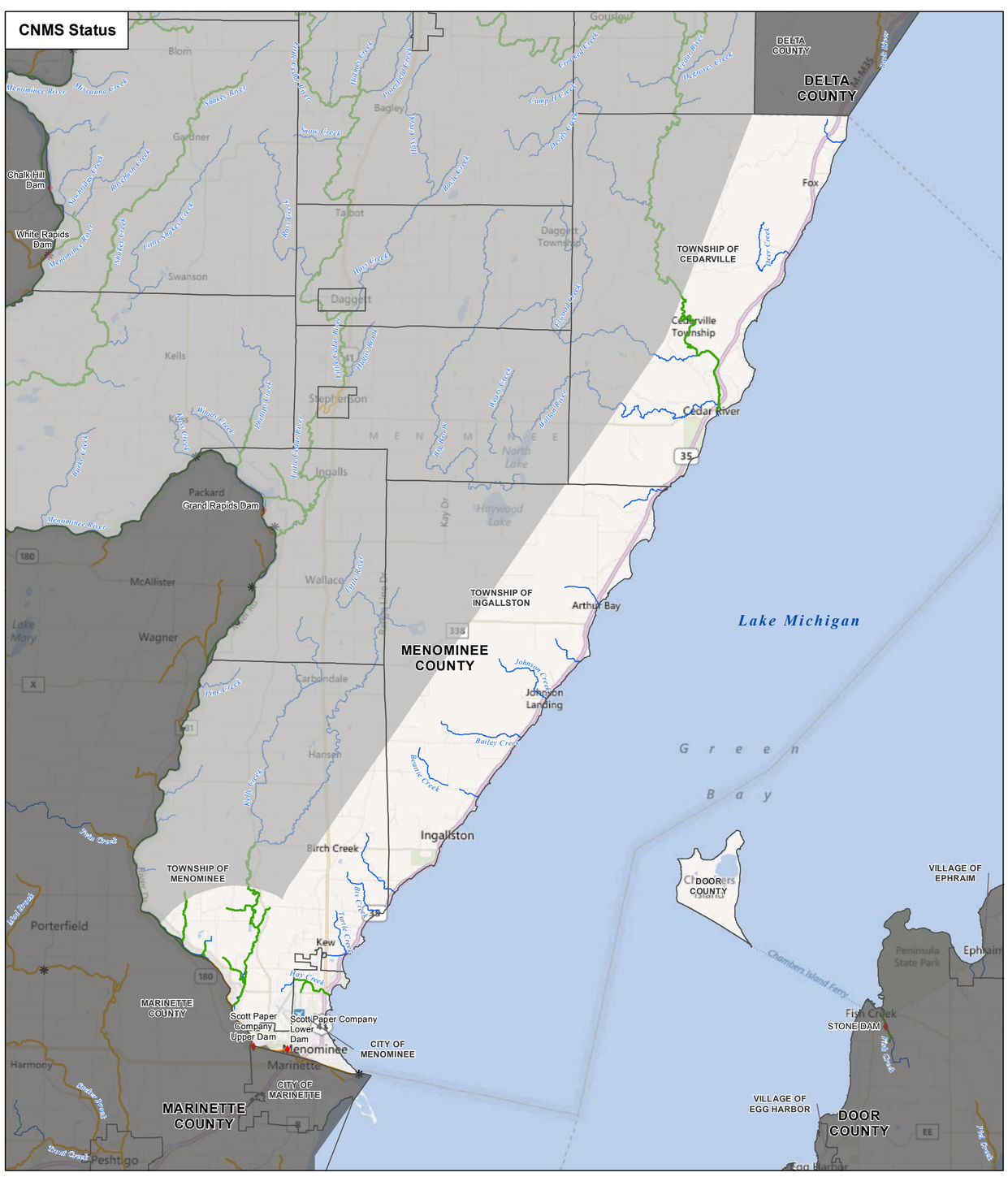
Delta County
Bay de Noc, Township of
Brampton, Township of
Ensign, Township of
Escanaba, City of
Escanaba, Township of
Fairbanks, Township of
Ford River, Township of
Garden, Township of
Garden, Village of
Gladstone, City of
Masonville, Township of
Nahma, Township of
Wells, Township of

STARR

FEMA







Declared Disasters

Lake	State	Declared County/Area	Declaration Date	Disaster Type	Incident Type	Description
Lake Michigan	MI	Menominee (County)	4/12/1973	DR	Flood	SEVERE STORMS & FLOODING
Lake Michigan	MI	Menominee (County)	3/2/1977	EM	Drought	DROUGHT
Lake Michigan	MI	Menominee (County)	1/27/1978	EM	Snow	BLIZZARDS & SNOWSTORMS
Lake Michigan	MI	Menominee (County)	9/7/2005	EM	Hurricane	HURRICANE KATRINA EVACUATION
Lake Michigan	WI	Menominee (County)	7/2/1993	DR	Severe Storm(s)	SEVERE STORMS, TORNADOES & FLOODING
Lake Michigan	WI	Menominee (County)	6/17/1976	EM	Drought	DROUGHT
Lake Michigan	WI	Menominee (County)	7/10/1984	EM	Flood	SEVERE STORMS & FLOODING
Lake Michigan	WI	Menominee (County)	9/13/2005	EM	Hurricane	HURRICANE KATRINA EVACUATION

Summary of Flood Insurance Policies and Claims

Lake	State	County	Community	CID	No. Policies	Total Premium	Total Coverage	Number of claims since 1978	Dollar ($) paid for claims since 1978
Lake Michigan	MI	Menominee	Cedarville, Township of	260659	3	$1,207	$325,500	0	$0
Lake Michigan	MI	Menominee	Ingallston, Township of	260660	No Data	$0	$0	0	$0
Lake Michigan	MI	Menominee	Menominee, City of	260138	12	$13,145	$3,735,600	5	$3,603
Lake Michigan	MI	Menominee	Menominee, Township of	260702	36	$22,450	$5,042,000	0	$0

Mitigation Action

Name of Plan	Plan Expiration Date	Identified Hazard Mitigation Action
City of Menominee	4/25/2012	N/A
Township of Cedarville	4/25/2012	N/A
Township of Ingallston	4/25/2012	N/A
Township of Menominee	4/25/2012	N/A

Summary of Shoreline Type

Total Shoreline (mile)	Artificial Shoreline (mile)	Boulders, Bedrock (mile)	Cohesive Clays and Silts (mile)	Sand (mile)	Shingles, Pebbles, Cobbles (Mile)	Other (mile)
47.1	7.4	5.6	0.6	21.6	11.8	0.0

Summary of Shoreline Coverage

Total Shoreline (mile)	Bluff 2'-10' (mile)	Coastal Wetland	Dune 2'-10' (mile)	Flat Coast (mile)	High Bluff 10'+ (mile)	High Dune 10'+ (mile)	Other (mile)
47.1	6.2	1.2	7.9	31.7	0.0	0.0	0.0

MAP SYMBOLOGY

LEGEND

- Dams
- LOMCs
- USGS Gages
- Transects
- Shoreline
- Streams
- Watersheds (HUC 8)
- Coastal Barrier Resource System
- Coastal Discovery Area
- Surrounding Counties
- Municipal Boundaries

EFFECTIVE SFHA

- A
- AE
- 0.2% PCT ANNUAL CHANCE FLOOD

AAL DATA
Total Average Annualized Losses per Census Block

- Less than $10,000
- $10,001 - $100,000
- $100,001 - $1,000,000
- $1,000,001 - $5,000,000
- Greater than $5,000,000

Coordinated Needs Management Strategy (CNMS)
Validation Status

- Unverified
- Unknown
- Valid

COASTAL STUDY LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM
Discovery Map

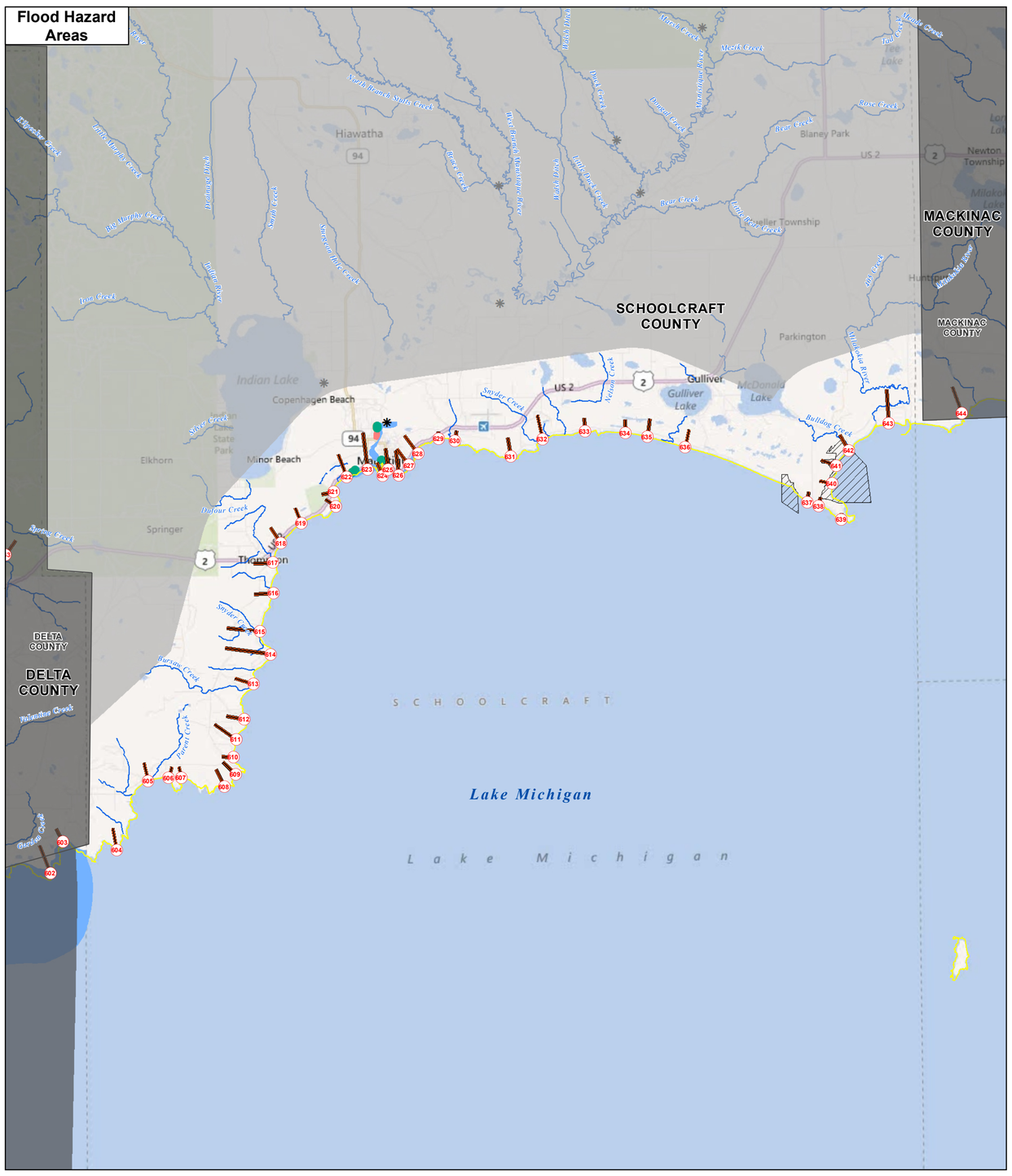
LAKE MICHIGAN COASTAL STUDY

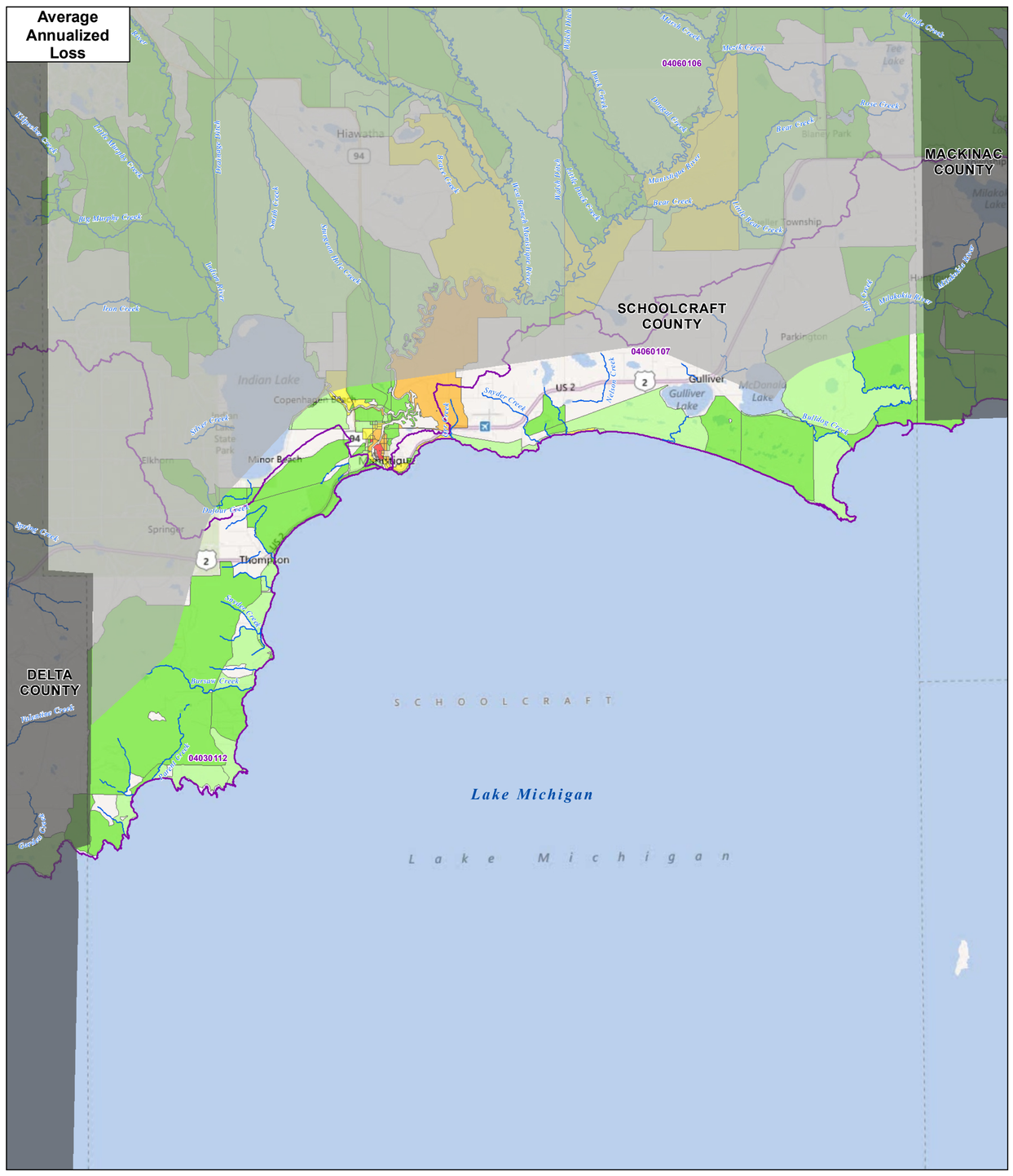
MENOMINEE COUNTY, MICHIGAN COASTAL STUDY COMMUNITIES

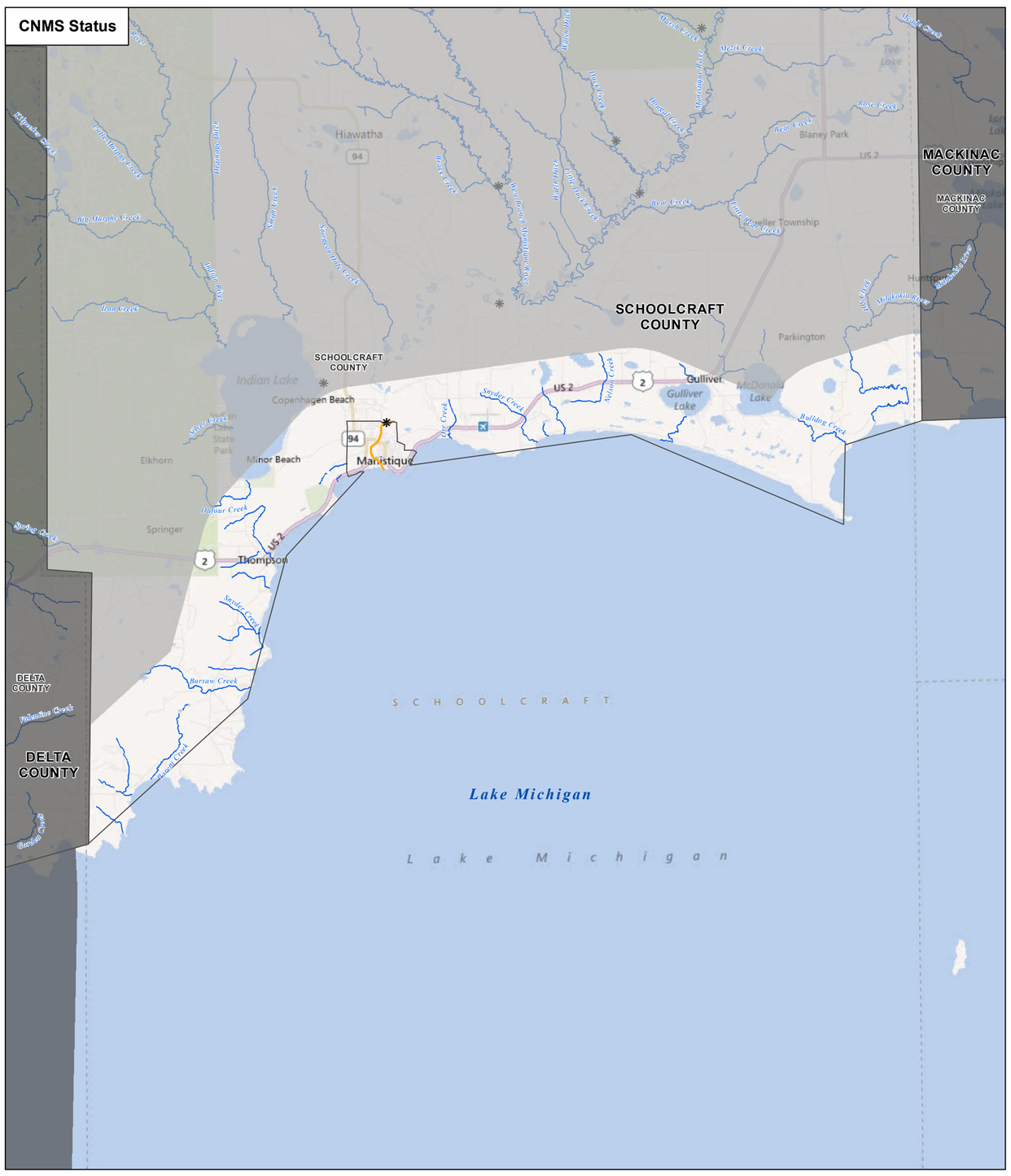
Cedarville, Township of
Ingallston, Township of
Menominee, City of
Menominee, Township of

STARR

FEMA







Declared Disasters

Lake	State	Declared County/Area	Declaration Date	Disaster Type	Incident Type	Description
Lake Michigan	MI	Schoolcraft (County)	5/10/1994	DR	Snow	SEVERE DEEP FREEZE
Lake Michigan	MI	Schoolcraft (County)	3/2/1977	EM	Drought	DROUGHT
Lake Michigan	MI	Schoolcraft (County)	1/27/1978	EM	Snow	BLIZZARDS & SNOWSTORMS
Lake Michigan	MI	Schoolcraft (County)	9/7/2005	EM	Hurricane	HURRICANE KATRINA EVACUATION

Summary of Flood Insurance Policies and Claims

Lake	State	County	Community	CID	No. Policies	Total Premium	Total Coverage	Number of claims since 1978	Dollar ($) paid for claims since 1978
Lake Michigan	MI	Schoolcraft	Manistique, City of	260595	1	$397	$45,000	0	$0
Lake Michigan	MI	Schoolcraft	Thompson, Township of	260519	0	$0	$0	1	$8,009

Mitigation Action

Name of Plan	Plan Expiration Date	Identified Hazard Mitigation Action
City of Manistique	11/9/2012	N/A

Summary of Shoreline Type

Total Shoreline (mile)	Artificial Shoreline (mile)	Boulders, Bedrock (mile)	Cohesive Clays and Silts (mile)	Sand (mile)	Shingles, Pebbles, Cobbles (Mile)	Other (mile)
57.3	4.4	22.4	0.0	23.3	7.2	0.0

Summary of Shoreline Coverage

Total Shoreline (mile)	Bluff 2'-10' (mile)	Coastal Wetland	Dune 2'-10' (mile)	Flat Coast (mile)	High Bluff 10'+ (mile)	High Dune 10'+ (mile)	Other (mile)
57.3	0.0	0.0	27.0	30.2	0.0	0.0	0.0

N

0 5 10 20 Miles

MAP SYMBOLOGY

LEGEND

- Dams
- LOMCs
- USGS Gages
- Transects
- Shoreline
- Streams
- Watersheds (HUC 8)
- Coastal Barrier Resource System
- Coastal Discovery Area
- Surrounding Counties
- Municipal Boundaries

EFFECTIVE SFHA

- A
- AE
- 0.2% PCT ANNUAL CHANCE FLOOD

AAL DATA
Total Average Annualized Losses per Census Block

- Less than $10,000
- $10,001 - $100,000
- $100,001 - $1,000,000
- $1,000,001 - $5,000,000
- Greater than $5,000,000

Coordinated Needs Management Strategy (CNMS)
Validation Status

- Unverified
- Unknown
- Valid

COASTAL STUDY LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM

Discovery Map

LAKE MICHIGAN COASTAL STUDY

SCHOOLCRAFT COUNTY, MICHIGAN COASTAL STUDY COMMUNITIES

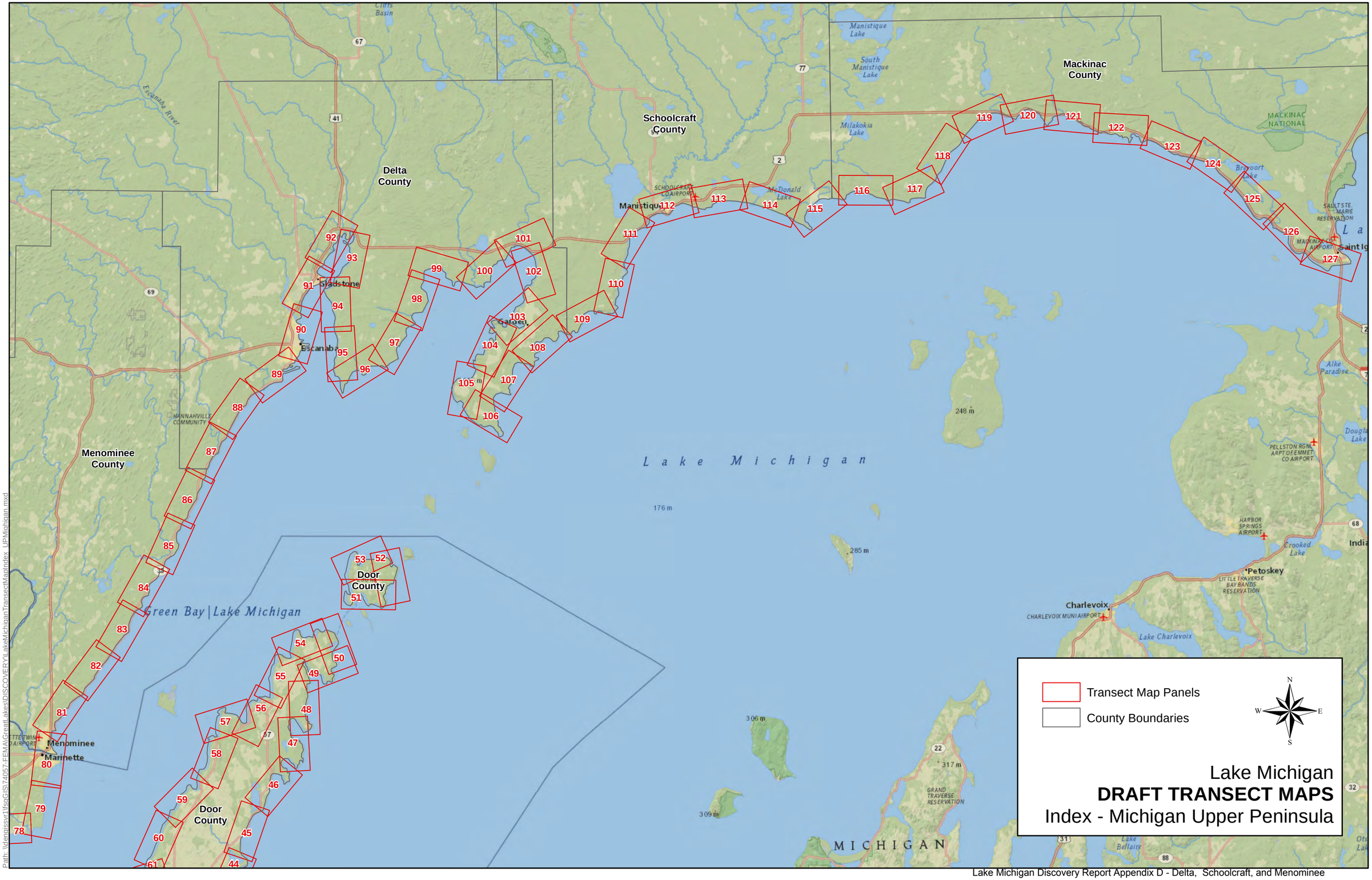
Schoolcraft County
Manistique, City of
Thompson, Township of

STARR

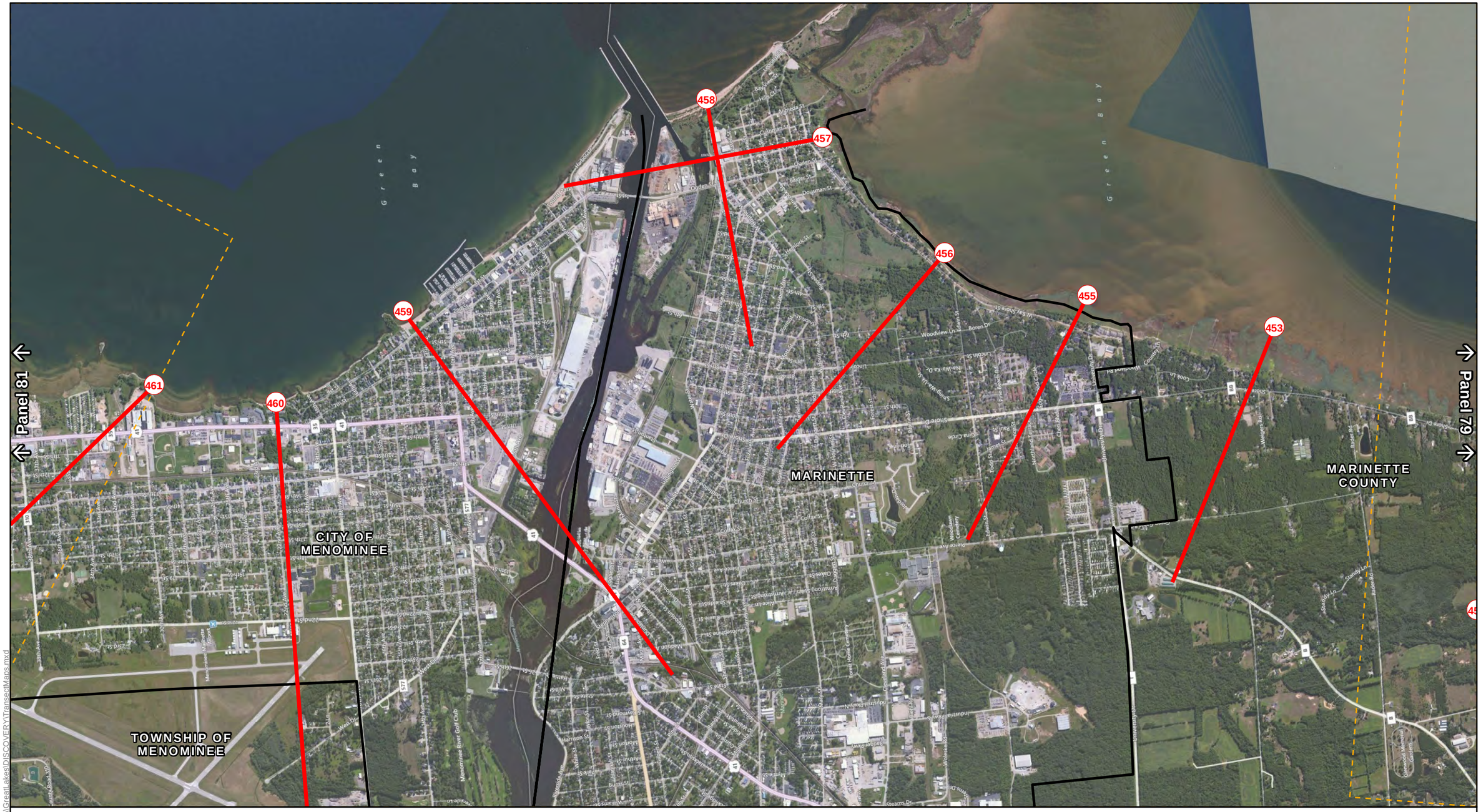
FEMA

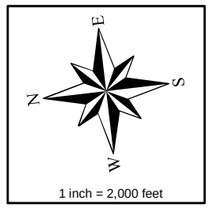
ATTACHMENT D

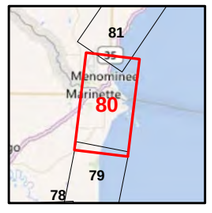
PROPOSED DRAFT TRANSECTS FIGURES



Path: \\denvgissvr1\vsp\GIS\740S7-FEMA\Great lakes\DISCOVERY\LakeMichigan\Transect\MapIndex_UPMichigan.mxd







Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

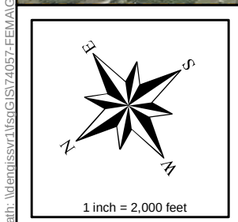
MARINETTE COUNTY
MENOMINEE COUNTY

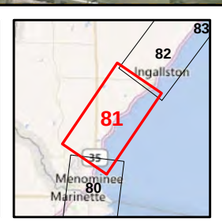
COMMUNITIES

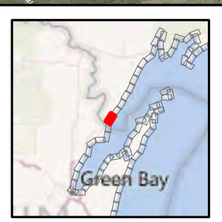
CITY OF MENOMINEE
MARINETTE
TOWNSHIP OF MENOMINEE

Lake Michigan
DRAFT TRANSECTS
Panel 80 of 127

Path: \\engissvr1\fsg\GIS\74057-FEMA\Great Lakes\DISCOVERY\Transect\Maps.mxd







Transects

Adjoining Panel Edge

Political Boundary

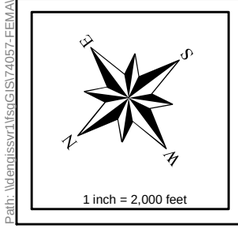
Basemap Source: Microsoft BING map service

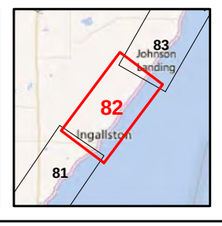
COUNTIES
MENOMINEE COUNTY

COMMUNITIES
CITY OF MENOMINEE
TOWNSHIP OF INGALLSTON
TOWNSHIP OF MENOMINEE

Lake Michigan
DRAFT TRANSECTS
Panel 81 of 127

Path: \\engissvr1\fsgGIS\7405\7-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES
MENOMINEE COUNTY

COMMUNITIES
TOWNSHIP OF INGALLSTON
TOWNSHIP OF MENOMINEE

Lake Michigan
DRAFT TRANSECTS
Panel 82 of 127

Green Bay

Green Bay

Panel 84

Panel 82

473

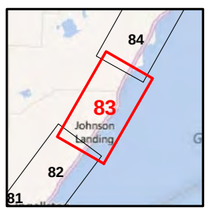
474

472

TOWNSHIP OF INGALLSTON

Path: \\denvissvr1\Sql\GIS\74057-FEMA\Great_Lakes\DISCOVERY\TransectMaps.mxd

1 inch = 2,000 feet



Transects

Adjoining Panel Edge

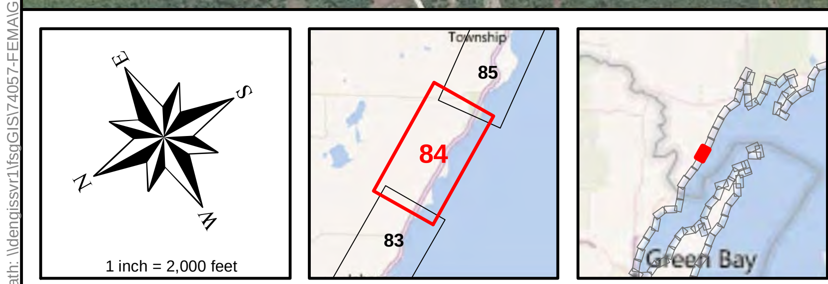
Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES
MENOMINEE COUNTY

COMMUNITIES
TOWNSHIP OF INGALLSTON

Lake Michigan
DRAFT TRANSECTS
Panel 83 of 127



Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

MENOMINEE COUNTY

COMMUNITIES

TOWNSHIP OF CEDARVILLE

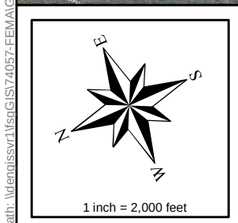
TOWNSHIP OF INGALLSTON

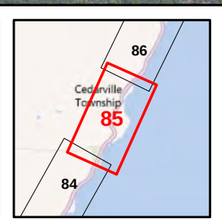
Lake Michigan

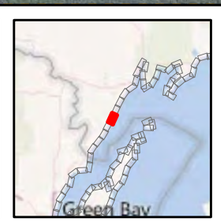
DRAFT TRANSECTS

Panel 84 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd







Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES
MENOMINEE COUNTY

COMMUNITIES
TOWNSHIP OF CEDARVILLE

Lake Michigan
DRAFT TRANSECTS
Panel 85 of 127

Path: \\denjissvr1\fsq\GIS\74057-FEMA\Great lakes\DISCOVERY\TransectMaps.mxd

482

481

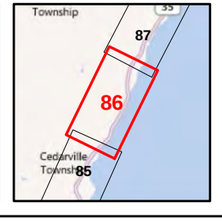
480

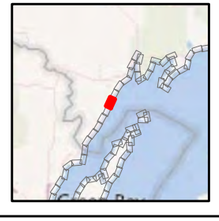
Panel 87

Panel 85

TOWNSHIP OF
CEDARVILLE

1 inch = 2,000 feet





Transects

Adjoining Panel Edge

Political Boundary

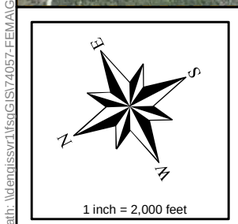
Basemap Source: Microsoft BING map service

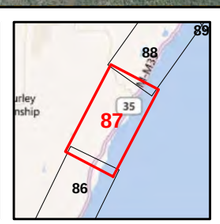
COUNTIES
MENOMINEE COUNTY

COMMUNITIES
TOWNSHIP OF CEDARVILLE

Lake Michigan
DRAFT TRANSECTS
Panel 86 of 127

Path: \\denqissvr1\Isq\GIS\74057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

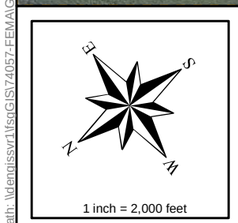
Basemap Source: Microsoft BING map service

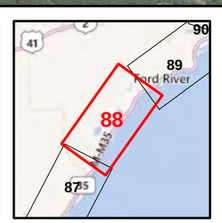
COUNTIES
DELTA COUNTY
MENOMINEE COUNTY

COMMUNITIES
TOWNSHIP OF CEDARVILLE

Lake Michigan
DRAFT TRANSECTS
Panel 87 of 127

Path: \\engissvr1\fsp\GIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

DELTA COUNTY

COMMUNITIES

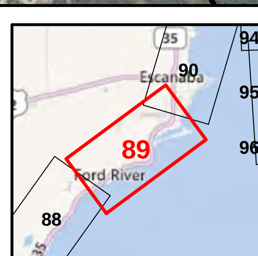
Lake Michigan

DRAFT TRANSECTS

Panel 88 of 127

Path: \\denqissvr1\Isq\GIS\74057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd

1 inch = 2,000 feet



Transects
Adjoining Panel Edge
Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES
DELTA COUNTY

COMMUNITIES
ESCANABA

Lake Michigan
DRAFT TRANSECTS
Panel 89 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd

Lake Michigan

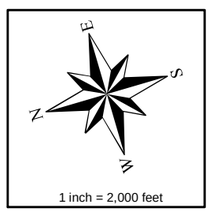
DELTA COUNTY

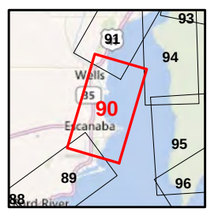
ESCANABA

Panel 91

Panel 89

500 501 502 503 504 505 497 498 499





Transects

Adjoining Panel Edge

Political Boundary

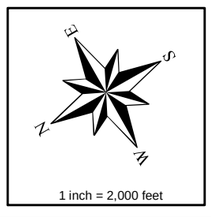
Basemap Source: Microsoft BING map service

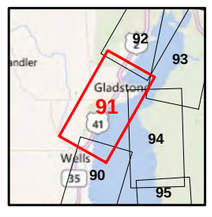
COUNTIES
DELTA COUNTY

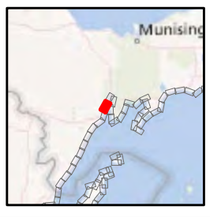
COMMUNITIES
ESCANABA

Lake Michigan
DRAFT TRANSECTS
Panel 90 of 127

Path: \\dengisvr1\fsg\GIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd







Transects

Adjoining Panel Edge

Political Boundary

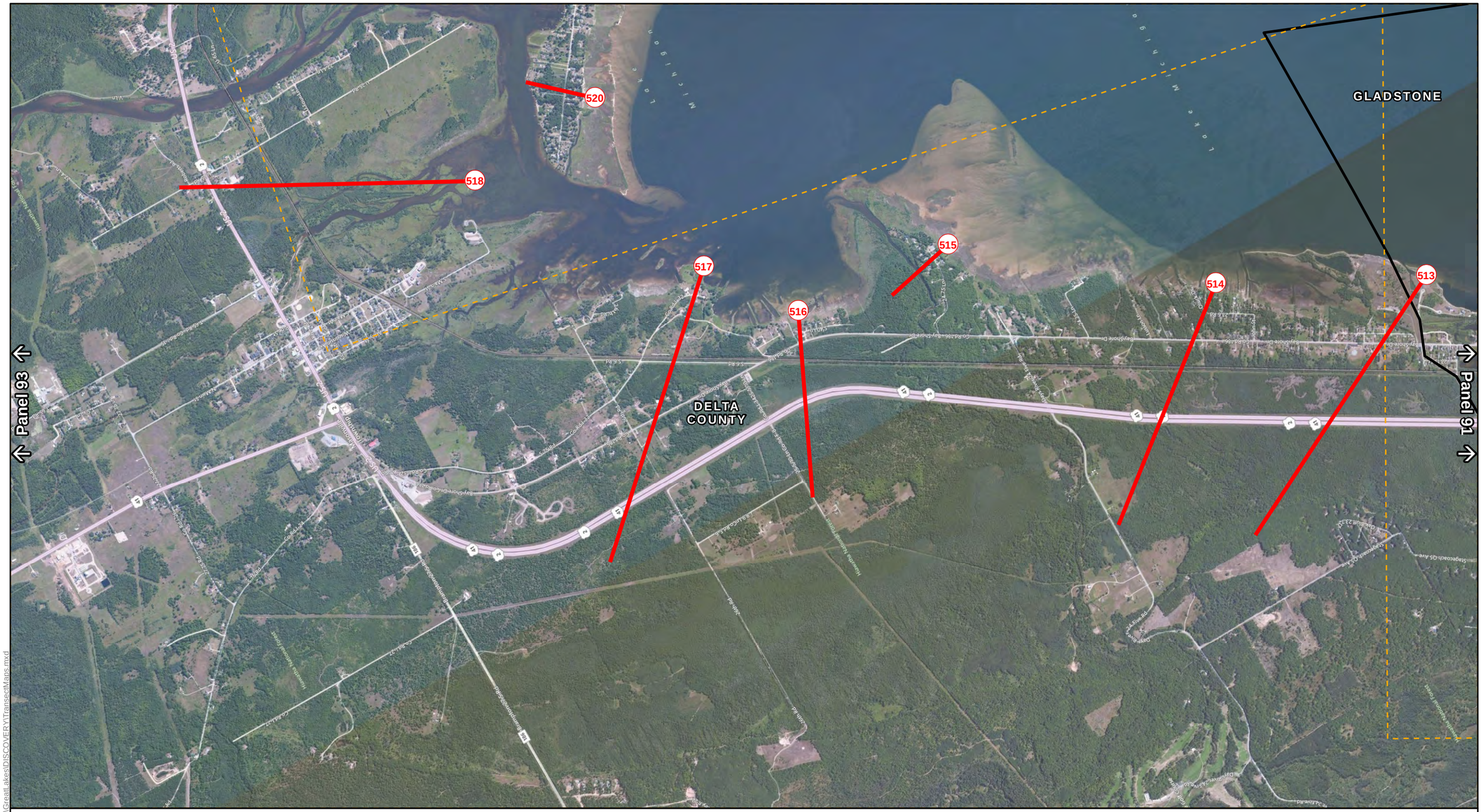
Basemap Source: Microsoft BING map service

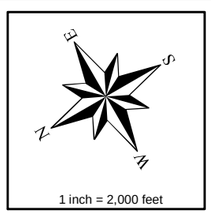
COUNTIES
DELTA COUNTY

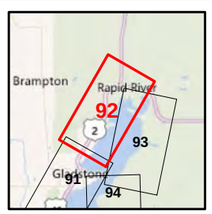
COMMUNITIES
GLADSTONE

Lake Michigan
DRAFT TRANSECTS
Panel 91 of 127

Path: \\denvissvr1\fsp\GIS\74057-FEMA\Great_lakes\DISCOVERY\TransectMaps.mxd







Transects

Adjoining Panel Edge

Political Boundary

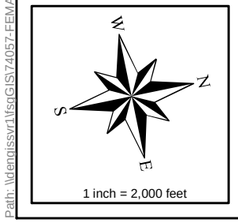
Basemap Source: Microsoft BING map service

COUNTIES
DELTA COUNTY

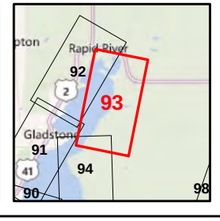
COMMUNITIES
GLADSTONE

Lake Michigan
DRAFT TRANSECTS
Panel 92 of 127

Path: \\denvissvr1\fsp\GIS\74057-FEMA\Great_lakes\DISCOVERY\TransectMaps.mxd



1 inch = 2,000 feet



Transects

Adjoining Panel Edge

Political Boundary

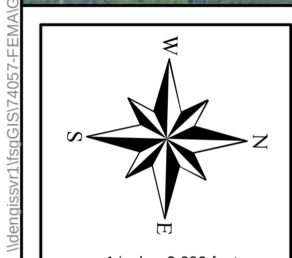
Basemap Source: Microsoft BING map service

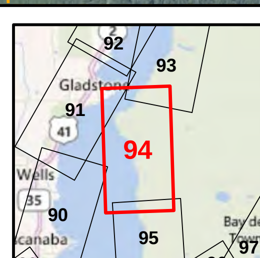
COUNTIES
DELTA COUNTY

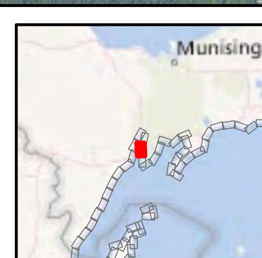
COMMUNITIES
GLADSTONE

Lake Michigan
DRAFT TRANSECTS
Panel 93 of 127

Path: \\denissvr1\fsp\GIS\74057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd







Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES
DELTA COUNTY

COMMUNITIES
GLADSTONE

Lake Michigan
DRAFT TRANSECTS
Panel 94 of 127

1 inch = 2,000 feet

Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

DELTA COUNTY

COMMUNITIES

Lake Michigan

DRAFT TRANSECTS

Panel 95 of 127

Path: \\denjissvr1\lsp\GIS\74057-FEMA\Great_lakes\DISCOVERY\TransectMaps.mxd

1 inch = 2,000 feet

Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

DELTA COUNTY

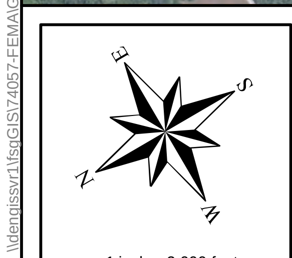
COMMUNITIES

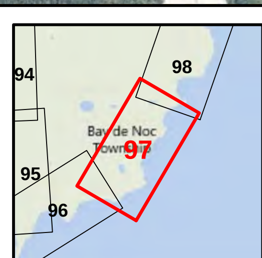
Lake Michigan

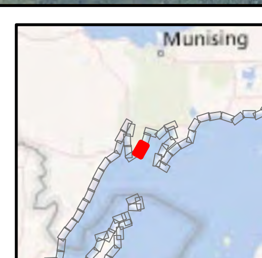
DRAFT TRANSECTS

Panel 96 of 127

Path: \\dennissvr1\Isp\GIS\74057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd







Transects

Adjoining Panel Edge

Political Boundary

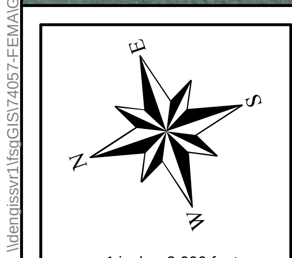
Basemap Source: Microsoft BING map service

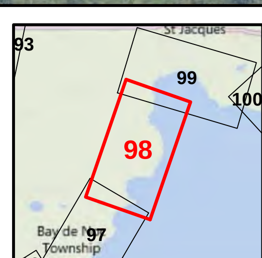
COUNTIES
DELTA COUNTY

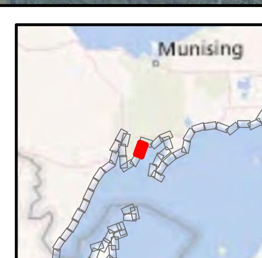
COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 97 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd







Transects

Adjoining Panel Edge

Political Boundary

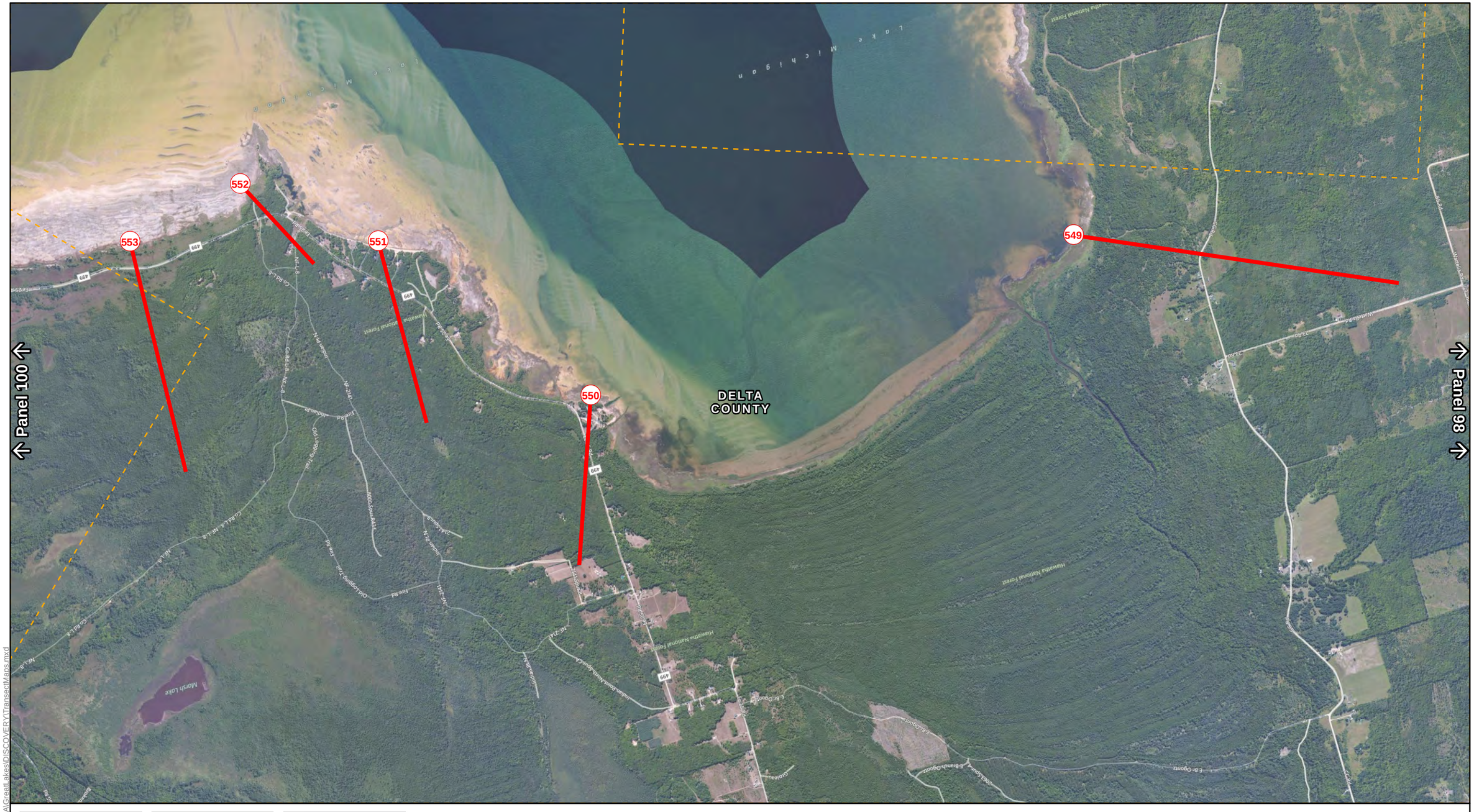
Basemap Source: Microsoft BING map service

COUNTIES
DELTA COUNTY

COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 98 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd



Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

DELTA COUNTY

COMMUNITIES

Lake Michigan

DRAFT TRANSECTS

Panel 99 of 127

1 inch = 2,000 feet

Path: \\dengisvr1\Isp\GIS\74057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd

1 inch = 2,000 feet

Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

DELTA COUNTY

COMMUNITIES

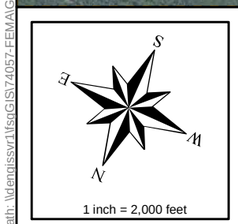
Lake Michigan

DRAFT TRANSECTS

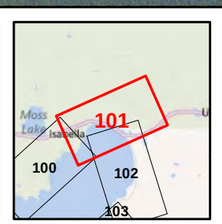
Panel 100 of 127

Path: \\denqissvr1\fsp\GIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd

563
562
561
Panel 102
Panel 100
DELTA COUNTY
Lake Michigan
US-2
N-32
Garden Corners
Isabella
Hiawatha National Forest
Spring Creek
Sand Ridge Rd
Coop Rd
Old US-2
Lake Michigan



1 inch = 2,000 feet



Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

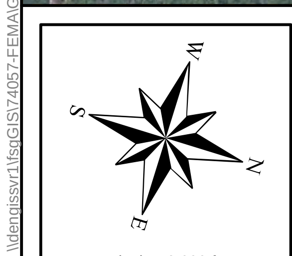
COUNTIES

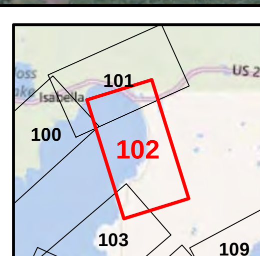
DELTA COUNTY
SCHOOLCRAFT COUNTY

COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 101 of 127

Path: \\denissvr1\fsp\GIS\74057-FEEMA\Great Lakes\DISCOVERY\TransectMaps.mxd





Transects
Adjoining Panel Edge
Political Boundary

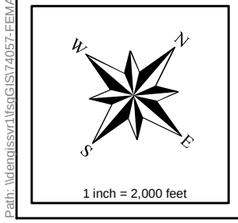
Basemap Source: Microsoft BING map service

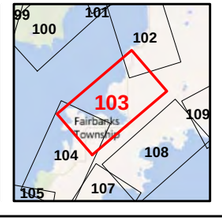
COUNTIES
DELTA COUNTY

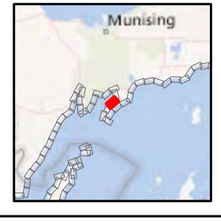
COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 102 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd







Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES
DELTA COUNTY

COMMUNITIES
GARDEN

Lake Michigan
DRAFT TRANSECTS
Panel 103 of 127

Path: \\denissvr1\fsq\GIS\74057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd

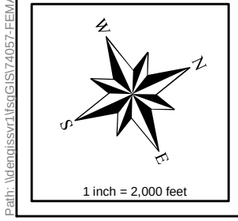
Lake Michigan

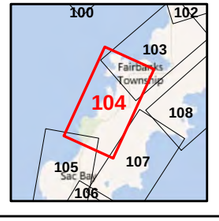
DELTA COUNTY

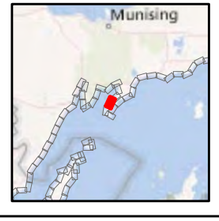
584 583 582 581 580 579 578 577 576

← Panel 105

Panel 103 →







Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

DELTA COUNTY

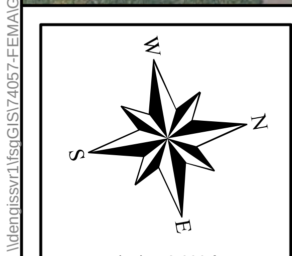
COMMUNITIES

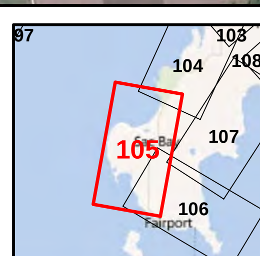
Lake Michigan

DRAFT TRANSECTS

Panel 104 of 127

Path: \\denissvr1\lsq\GIS\740572-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

DELTA COUNTY

COMMUNITIES

Lake Michigan

DRAFT TRANSECTS

Panel 105 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd

DELTA COUNTY

Lake Michigan

592

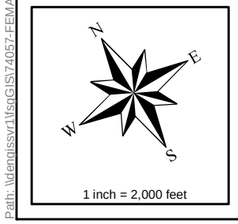
591

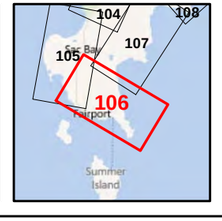
590

589

← Panel 107

Panel 105 →





Transects

Adjoining Panel Edge

Political Boundary

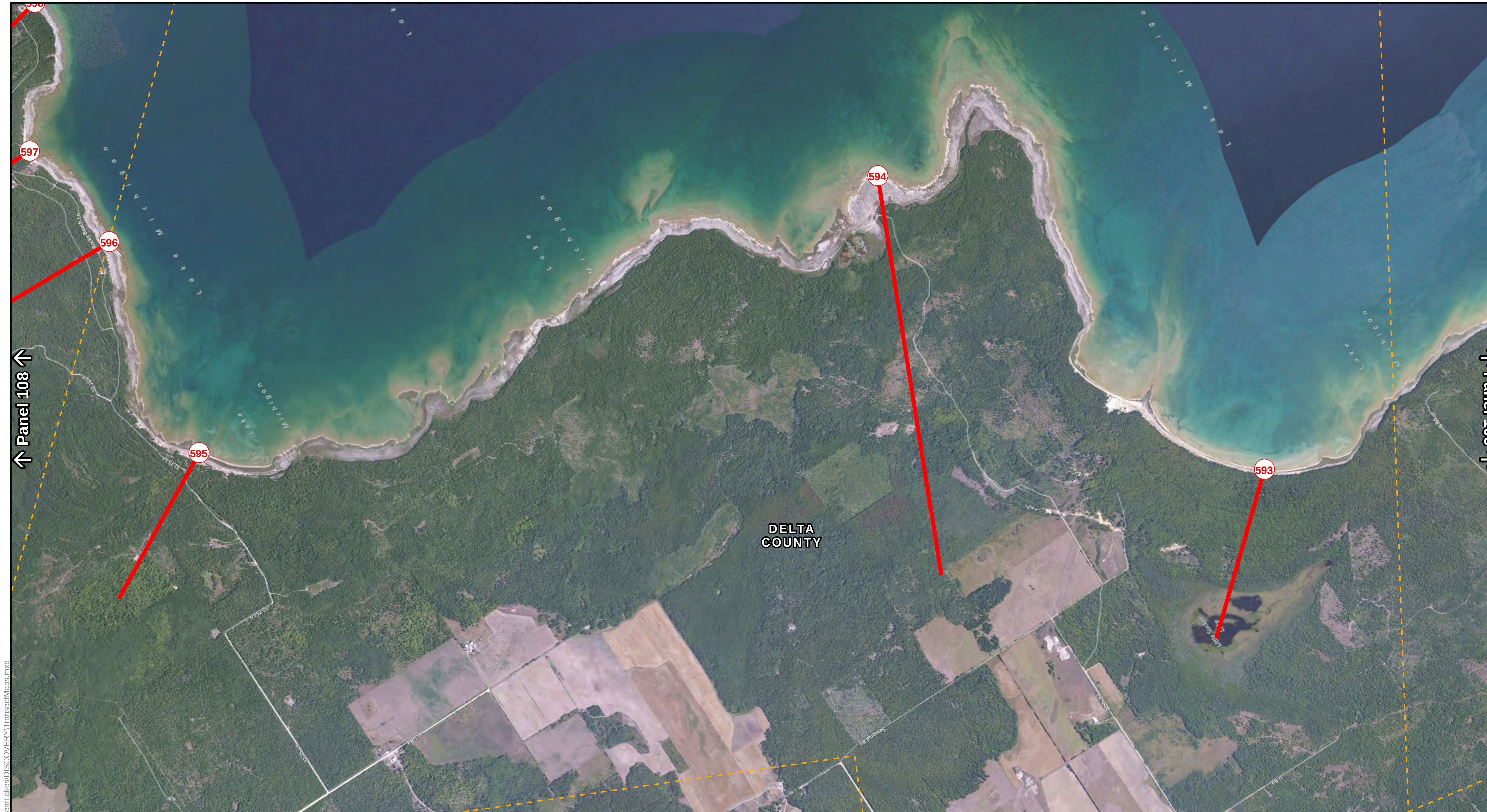
Basemap Source: Microsoft BING map service

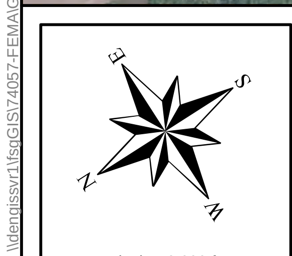
COUNTIES
DELTA COUNTY

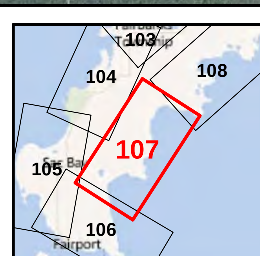
COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 106 of 127

Path: \\dengisvr1\fsn\GIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd







Transects
Adjoining Panel Edge
Political Boundary

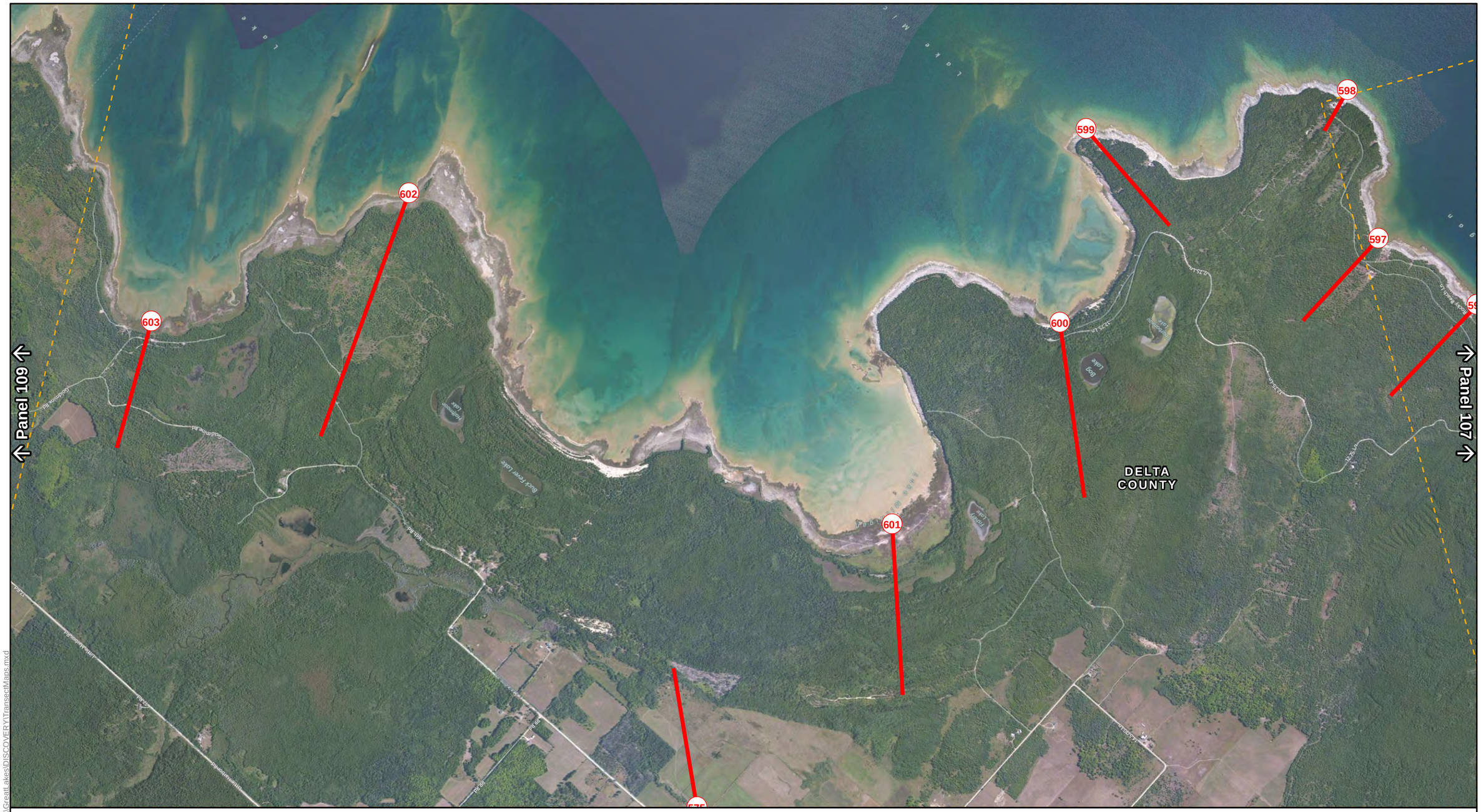
Basemap Source: Microsoft BING map service

COUNTIES
DELTA COUNTY

COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 107 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd



1 inch = 2,000 feet

Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

DELTA COUNTY

COMMUNITIES

Lake Michigan

DRAFT TRANSECTS

Panel 108 of 127

Path: \\denalissvr1\lsq\GIS\Y4057-FEMA\Great_lakes\DISCOVERY\TransectMaps.mxd

Lake Michigan

608

604

607

606

605

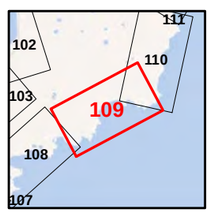
Panel 110

Panel 108

SCHOOLCRAFT COUNTY

DELTA COUNTY

1 inch = 2,000 feet



Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

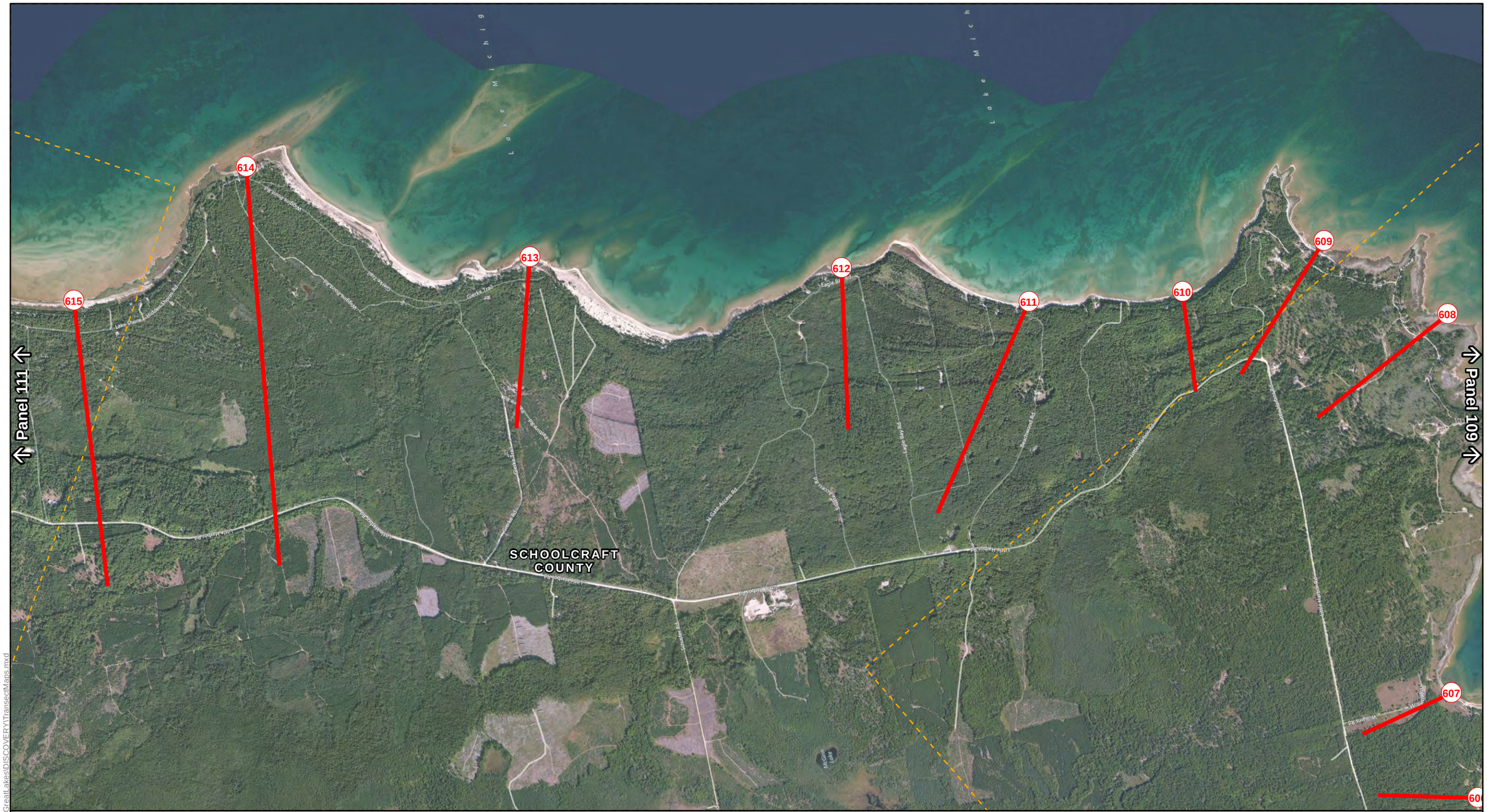
COUNTIES

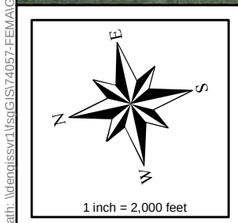
DELTA COUNTY
SCHOOLCRAFT COUNTY

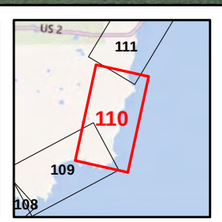
COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 109 of 127

Path: \\denolssvr1\lsp\GIS\74057-FEMA\Great_lakes\DISCOVERY\TransectMaps.mxd







Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

SCHOOLCRAFT COUNTY

COMMUNITIES

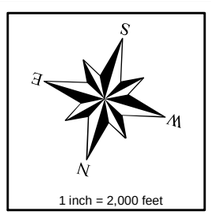
Lake Michigan

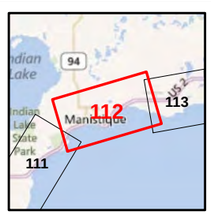
DRAFT TRANSECTS

Panel 110 of 127

Path: \\denqtissvr1\Esri\GIS\T4057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd

620
621
619
618
617
616
615
Panel 112
Panel 110
SCHOOLCRAFT COUNTY
1 inch = 2,000 feet
Elkhorn
Indian Lake State Park
Manistique
112
111
110
109
US 2
Munising
Transects
Adjoining Panel Edge
Political Boundary
Basemap Source: Microsoft BING map service
COUNTIES
SCHOOLCRAFT COUNTY
COMMUNITIES
Lake Michigan
DRAFT TRANSECTS
Panel 111 of 127
Path: \\denqtissvr1\fsrg\GIS\T40S7-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

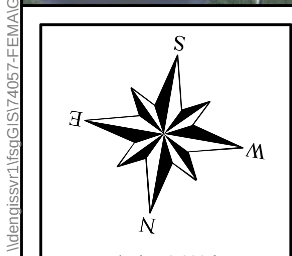
Basemap Source: Microsoft BING map service

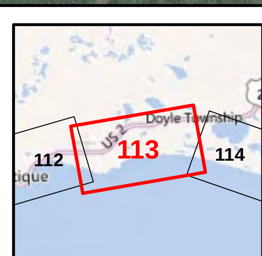
COUNTIES
SCHOOLCRAFT COUNTY

COMMUNITIES
MANISTIQUE

Lake Michigan
DRAFT TRANSECTS
Panel 112 of 127

Path: \\denjissvr1\lsd\GIS\74057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

SCHOOLCRAFT COUNTY

COMMUNITIES

Lake Michigan

DRAFT TRANSECTS

Panel 113 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd

Lake Michigan

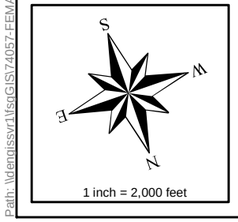
636

635

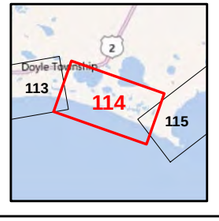
Panel 115

Panel 113

SCHOOLCRAFT COUNTY



1 inch = 2,000 feet



Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

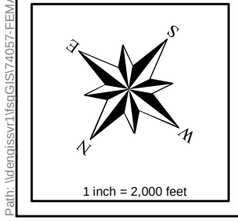
COUNTIES

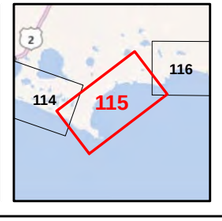
SCHOOLCRAFT COUNTY

COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 114 of 127

Path: \\engissvr1\fsp\GIS\74057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

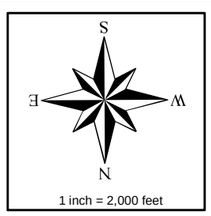
COUNTIES

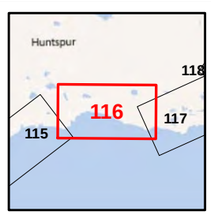
MACKINAC COUNTY
SCHOOLCRAFT COUNTY

COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 115 of 127

Path: \\denqtissvr1\fsq\GIS\74057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

MACKINAC COUNTY

COMMUNITIES

Lake Michigan

DRAFT TRANSECTS

Panel 116 of 127

Path: \\engissvr1\fsp\GIS\Y2057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd

649

650

648

647

Panel 118

Panel 116

MACKINAC COUNTY

Stone Lake

Brown's Lake

Island Lake

Bruders Lake

Lewallen Rd

Lewallen Rd

Lewallen Rd

Lewallen Rd

Lewallen Rd

1 inch = 2,000 feet

119

118

116

117

Munising

Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

MACKINAC COUNTY

COMMUNITIES

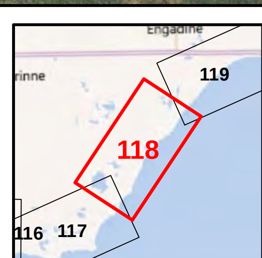
Lake Michigan

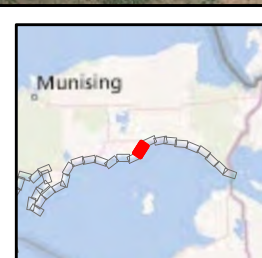
DRAFT TRANSECTS

Panel 117 of 127

Path: \\dengisvr1\tsg\GIS\74057-FEMA\GreatLakes\DISCOVERY\Transect\Maps.mxd

1 inch = 2,000 feet





Transects
Adjoining Panel Edge
Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES
MACKINAC COUNTY

COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 118 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd

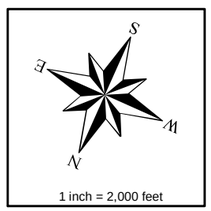
Lake Michigan

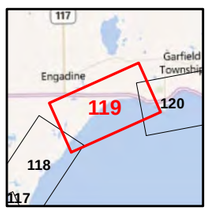
658
657
656
655
654
653

Panel 120

Panel 118

MACKINAC COUNTY





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

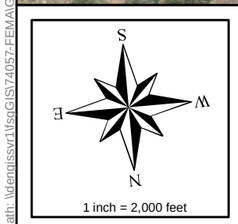
MACKINAC COUNTY

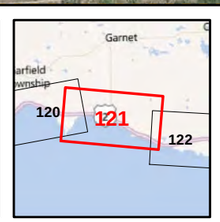
COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 119 of 127

Path: \\denvissvr1\fsp\GIS\74057-FEMA\Great_Lakes\DISCOVERY\TransectMaps.mxd


665
666
664
663
662
661
659
658
Panel 121
Panel 119
MACKINAC
COUNTY
Lake Michigan
Lake Michigan
Munising
Garfield
Township
119
120
121
1 inch = 2,000 feet
Transects
Adjoining Panel Edge
Political Boundary
Basemap Source: Microsoft BING map service
COUNTIES
MACKINAC COUNTY
COMMUNITIES
Lake Michigan
DRAFT TRANSECTS
Panel 120 of 127
Path: \\entgissvr1\fsg\GIS\7405?-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

MACKINAC COUNTY

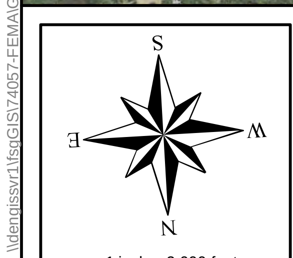
COMMUNITIES

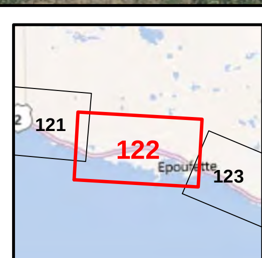
Lake Michigan

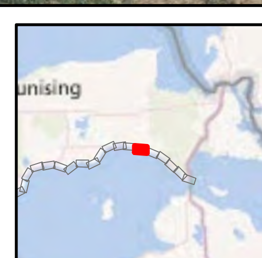
DRAFT TRANSECTS

Panel 121 of 127

Path: \\denqissvr1\fsrg\ISI\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd







Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

MACKINAC COUNTY

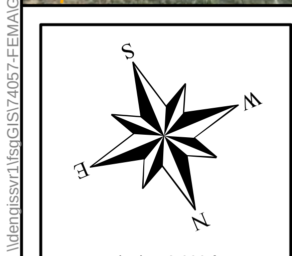
COMMUNITIES

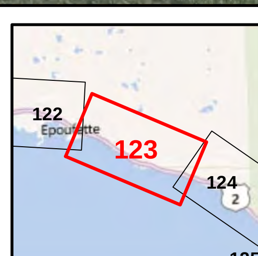
Lake Michigan

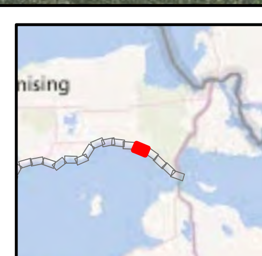
DRAFT TRANSECTS

Panel 122 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd







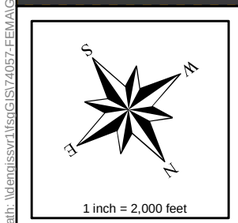
Transects
Adjoining Panel Edge
Political Boundary

Basemap Source: Microsoft BING map service

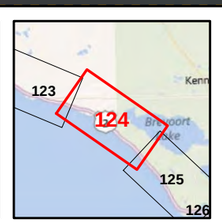
COUNTIES
MACKINAC COUNTY

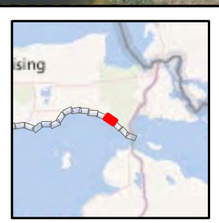
COMMUNITIES

Lake Michigan
DRAFT TRANSECTS
Panel 123 of 127



1 inch = 2,000 feet





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

MACKINAC COUNTY

COMMUNITIES

Lake Michigan

DRAFT TRANSECTS

Panel 124 of 127

Path: \\engissvr1\fsp\GIS\Y2057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd

690

689

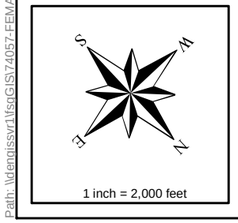
688

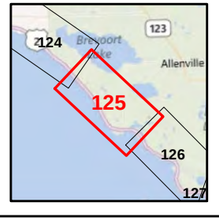
687

Panel 126

Panel 124

MACKINAC COUNTY





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

MACKINAC COUNTY

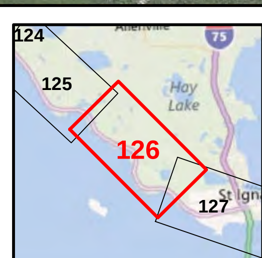
COMMUNITIES

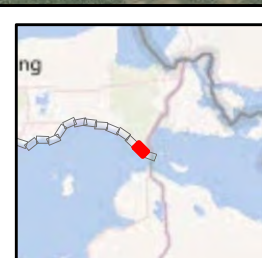
Lake Michigan

DRAFT TRANSECTS

Panel 125 of 127

Path: \\denqissvr1\fsrg\GIS\T4\057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES

MACKINAC COUNTY

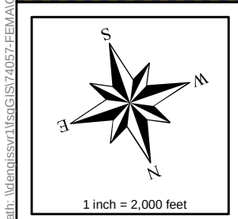
COMMUNITIES

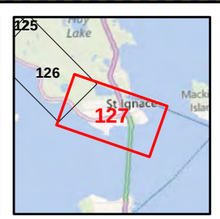
Lake Michigan

DRAFT TRANSECTS

Panel 126 of 127

Path: \\dengissvr1\fsgGIS\74057-FEMA\GreatLakes\DISCOVERY\TransectMaps.mxd





Transects

Adjoining Panel Edge

Political Boundary

Basemap Source: Microsoft BING map service

COUNTIES
MACKINAC COUNTY

COMMUNITIES
ST. IGNACE

Lake Michigan
DRAFT TRANSECTS
Panel 127 of 127

Path: \\denqissvr1\fsq\GIS\74057-FEMA\Great Lakes\DISCOVERY\TransectMaps.mxd

ATTACHMENT E

STAKEHOLDER COMMENTS FROM DISCOVERY MEETING

Stakeholder Comments from Discovery Meeting

ID (Corresponds to Final Discovery Map)	State	County	Location of Comment	FIPS	CID	Comment (from Discovery Meetings or on draft Discovery Map/transect figures)[i]	Type
DEL-14	Michigan	Delta	Fairbanks, Township of	26041	260804	Possible erosion	General Comment
DEL-15	Michigan	Delta	Bay De Noc, Township of	26041	260685	Possible erosion	General Comment
DEL-16	Michigan	Delta	Nahma, Township of	26041	260688	Ice at mouth of stream; Sturgeon River	General Comment
DEL-17	Michigan	Delta	Garden, Village of	26041	260948	Flooding issues in Village of Garden	General Comment
DEL-18	Michigan	Delta	Masonville, Township of	26041	260687	Ice issues and flooding (dynamite)	General Comment
DEL-19	Michigan	Delta	Delta County – communities along shoreline	26041	N/A	Wave runup study done for USACE 88-90; Little Bay de Noc to Green Bay	General Comment
DEL-20	Michigan	Delta	Ford River, Township of	26041	260062	Ice; High risk erosion	General Comment
MEN-21	Michigan	Menominee	Menominee, City of	26109	260138	Flooding in Menominee at Little Ditches/stream	General Comment
MEN-22	Michigan	Menominee	Cedarville, Township of	26109	260659	Flooding/Ice issues; Frequently asked to dredge this area	General Comment
SCH-23	Michigan	Schoolcraft	Mueller, Township of	26153	N/A	Critical dune	General Comment
SCH-24	Michigan	Schoolcraft	Manistique, City of	26153	260595	Erosion	General Comment
SCH-25	Michigan	Schoolcraft	Schoolcraft County – locations along shoreline	26153	N/A	Check for federal and state land - no residences located here, therefore consider removing transects	General Comment

[i] Due to the various methods used to collect flood risk information and transect comments, including discussions during Discovery Meetings, maps marked up with comments, and emails or letters sent containing comments, the meaning of some comments may not be clear in this table and are subject to interpretation.

ATTACHMENT F

DELTA, MENOMINEE, AND SCHOOLCRAFT COUNTY DISCOVERY MEETING DOCUMENTS

Discovery Meeting Agenda

Discovery Meeting Sign-In Sheets

Discovery Meeting Minutes

Discovery Meeting Presentation

Project Name:	FEMA Region V Discovery
Meeting:	DELTA, SCHOOLCRAFT, MENOMINEE COUNTIES Great Lakes Coastal Discovery Meeting
Date and Time:	TUESDAY, AUGUST 14, 2012; 2:00 – 4:00 PM ET
Place:	BAY DE NOC COMMUNITY COLLEGE
Facilitator:	LEE TRAEGER, FEMA JASPREET RANDHAWA, SCOTT BANJAVCIC, TROY THIELEN, STARR

Discovery Meeting Agenda

1. **Why are we here? (2:00 – 2:15 PM ET)**
   - Great Lakes Coastal Flood Study Overview and Schedule
   - Discovery Process and Outcomes

2. **Coastal mapping and flood risk topics to be aware of (2:15 – 2:40 PM ET)**

3. **How does this apply to my community? (2:40 – 2:50 PM ET)**

4. **Interactive Session A (2:50 – 3:15 PM ET)**
   - View and Discuss Local Coastal Areas of Concern Using the Discovery Map and Community Risk MAP Questionnaire

5. **Hazard mitigation opportunities and grant funding (3:15 – 3:25 PM ET)**

6. **Interactive Session B (3:25 – 3: 50 PM ET)**
   - Discuss Mitigation Action Opportunities
   - Introduce the Mitigation Action Form and Mitigation Action Tracker

7. **Wrap Up (3:50 – 4:00 PM ET)**
   - 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.*

August 14, 2012 SCHOOLCRAFT, DELTA, MENOMINEE, COUNTIES DISCOVERY MEETING SIGN-IN SHEET

Please verify contact information and intial meeting attendance.

No.	Sign Intials	Affiliation	Title	Name First	Name Last	Street Address	Phone	Email Address
1	SBM	Michigan Department of Environmental Quality	District Floodplain Engineer	Sheila	Meier	420 5th St. Gwinn, MI 49841	(906) 346-8558	MEIERS@michigan.gov
2	TR	Menominee County	Emergency Management Coordinator	Trina	Rabida	839 10th Avenue Menominee, MI 49858	(906) 863-9817	krabida@Menomineeco.com
3		Ensign Township	Supervisor	John	Wolf	9988 Co. Rd 415 Rapid River, MI 49878	474-9573	—
4		Ensign Township						
5	MA	Wells Township		Miles	Anderson	PO Box 188 Wells MI 49894	906 786 0839	wellsdelta@chartermi.net
6	LT	FEMA Region V	Senior Engineer	Lee	Traeger	536 South Clark St., 6th Floor Chicago, IL 60605	(312) 408-5500	lee.traeger@fema.dhs.gov
7		STARR	Engineer	Scott	Banjavcic	125 South Wacker Drive Chicago, IL 60606	(312) 346-5000	banjavcics@cdmsmith.com
9	JR	STARR	Engineer	Jaspreet	Randhawa	125 South Wacker Drive Chicago, IL 60606	(312) 346-5000	randhawajg@cdmsmith.com
10	TRT	STARR	GIS	Troy	Thielen	125 South Wacker Drive Chicago, IL 60606	(312) 346-5000	thielentr@cdmsmith.com
11								

August 14, 2012 SCHOOLCRAFT, DELTA, MENOMINEE, COUNTIES DISCOVERY MEETING SIGN-IN SHEET

Please verify contact information and intial meeting attendance.

No.	Sign Intials	Affiliation	Title	Name First	Name Last	Street Address	Phone	Email Address
12	MP	CUPPAD Regional Commission	Senior Planner	Michelle	Parkkonen	2415 14th Ave South Escanaba, MI 49829	906.786.9234	mparkkonen@cuppad.org
13	SL	CUPPAD Regional Commission	GIS Coordinator	Steve	Lenaker	2415 14th Ave South Escanaba, MI 49829	(906)786-9234	slenaker@cuppad.org
14								
15								
16								
17								
18								
19								
20								
21								

Meeting schedule: Tuesday, August 14, 2012 pm 2:00 – 4:00 pm (ET)
Meeting Location: Bay De Noc Community College Escanaba, MI
Discovery Area: Coastal communities in Schoolcraft, Delta and Menominee counties, MI
Attendees: 10 people attended the Lake Michigan Discovery Meeting. Please see attached sign-in sheet for a complete list of attendees

PARTICIPANTS

FEMA
Lee Traeger, FEMA-R5-RA

STARR Contractor
Jaspreet Randhawa STARR
Scott Banjavcic, STARR
Troy Thielen, STARR

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 Mitigation Action Tracker

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.*

INTERACTIVE DISCUSSION:

- Schoolcraft, Delta, and Menominee County Hazard Mitigation Plans are currently being updated by Menominee County Emergency Management.

- CUPPAD representative Steve Lenaker mentioned that CUPPAD has political boundaries, streams, and road GIS data. Parcel information exists for Delta County but they are low quality. Escanaba and Gladstone have parcel data. No topography seems to be available for any of the counties.
- Menominee County is going through the resilience process and having DFIRMs updated through a county-wide study also performed by STARR. STARR's Coastal study team needs to look at effective transects during analysis. Menominee County Emergency Management mentioned that some community officials were not in attendance because they thought the resilience meeting and discovery meetings served the same purpose. Contact the following officials for more information and data:
    - Dan Menacher – Menominee County
    - Tim Callahan – Delta County
    - Tom Lesperance – City of Menominee

FEATURES NOTED ON MAPS:

- Check for information regarding state and federal land because no residences are located there.
- Sheila Meier, MDEQ, will send us the link to state-wide erosion study which identifies areas of high erosion and critical dunes.
- MDEQ identified ice issues at mouths of the Sturgeon, Rapid, Ford, and Walton Rivers.
- MDEQ identified flooding issues in Garden.
- MDEQ noted the only mitigation action ever discussed regarding flooding issues is dredging.

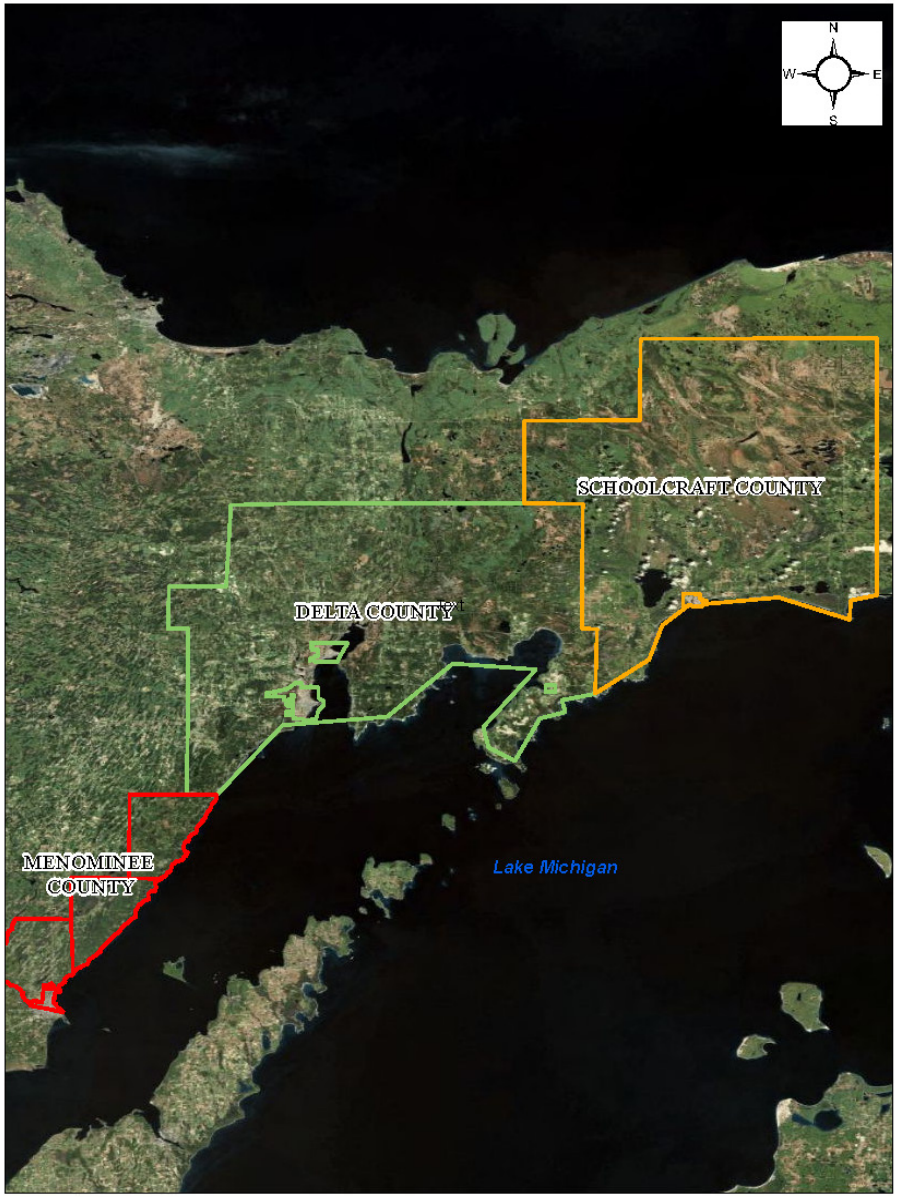
MITIGATION ACTIONS:

- Schoolcraft, Delta, and Menominee County Hazard Mitigation Plans are currently being updated by Menominee County Emergency Management
- MDEQ noted the only mitigation action ever discussed regarding flooding issues is dredging.

FEMA

Lake Michigan Discovery

Delta County, MI
Schoolcraft County, MI
Menominee County, MI



August 14, 2012
2 pm to 4 pm
Bay de Noc Community College

RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study

greatlakescoast.org

Introductions

Who's here?

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

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?
  - NFIP compliance, local impacts of coastal study, hazard mitigation, and grant funding
- Interactive Sessions
  - View and Discuss Local Coastal Areas of Concern Using the Discovery Map and Community Risk MAP Questionnaire
  - Discuss Mitigation Action Opportunities and Introduce the Mitigation Action Form
- Wrap Up
- Optional Interactive Stations

Risk Mapping, Assessment and Planning
Risk MAP

FEMA

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

Great Lakes Coastal Flood Study

U.S. Army Corps of Engineers, Detroit District

RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study
greatlakescoast.org

Lake Michigan Discovery Report Appendix D - Delta, Schoolcraft, and Menominee

Great Lakes Coastal Flood Study
Overview

- 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 flood risk actions to enhance resiliency along the Great Lakes
- Partners Involved:
  - FEMA
  - USACE
  - Engineering Research and Development Center (ERDC)
  - ASFPM
  - States
  - FEMA Contractors

Lake Michigan Discovery

- 34 counties in total
  - 4 counties in UP Michigan
  - 11 counties in Wisconsin
  - 2 counties in Illinois
  - 3 counties in Indiana
  - 14 counties in lower Michigan
- 226 coastal communities

Great Lakes Coastal Flood Study
Discovery Study Area

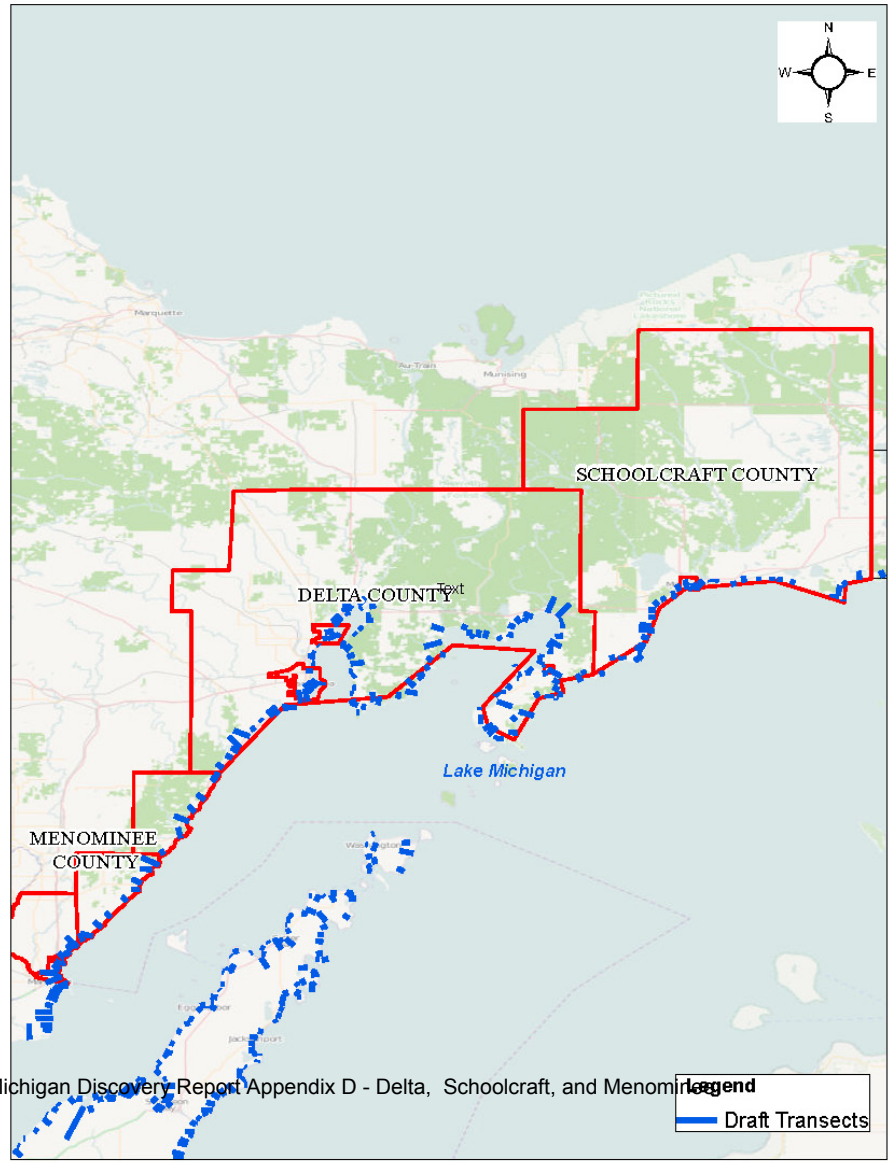
FEMA

<u>Lake Michigan coastal communities in Delta, Menominee, and Schoolcraft Counties:</u>

Delta County
Escanaba (City and Township)
Garden
Gladstone
Bay de Noc
Brampton
Ensign
Fairbanks
Ford River
Garden (Township and Village)
Masonville
Nahma
Wells

Menominee County
Menominee (City and Township)
Cedarville
Ingallston

Schoolcraft County
Manistique
Thompson



Lake Michigan Discovery Report Appendix D - Delta, Schoolcraft, and Menominee

RiskMAP
Increasing Resilience Together

Great Lakes Coastal

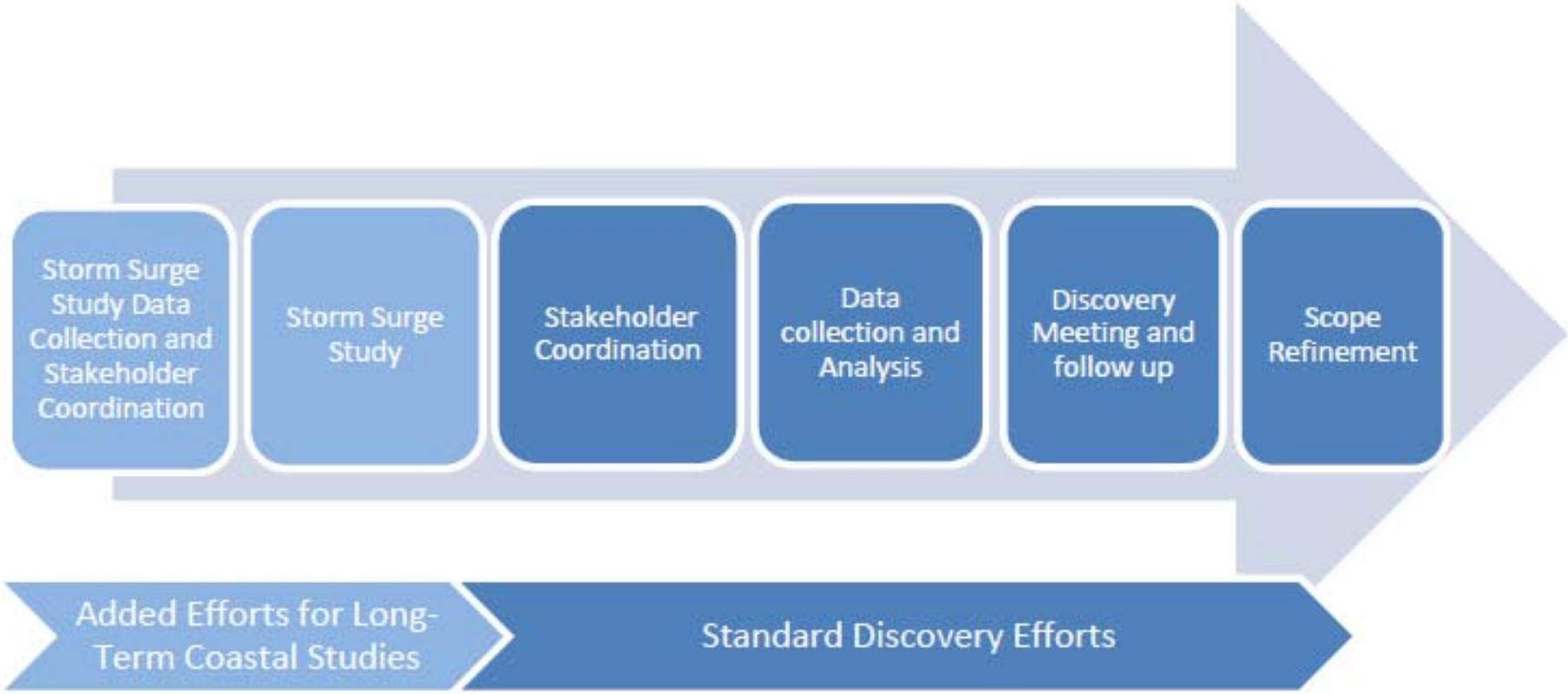
Effective Map Status

- DELTA
- Countywide 6/8/98
- Menominee County
  - Countywide study under progress
- SCHOOLCRAFT
  - City of Manistique - 12/5/90
  - Inwood Twp - no map
  - Thompson Twp - no map

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

Discovery Schedule Overview



Lake Michigan 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 – August 2012
- Establish inventory of coastal structures based on oblique imagery – October 2012
- Facilitate Discovery Meetings – August/September 2012
- Final Discovery Report and Maps – November 2012
- Create library of digital data – November 2012

Great Lakes Coastal Flood Study
Discovery Products

- **Final Discovery Report**
  - Single, comprehensive report for all of Lake Michigan, 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

Discovery Outcomes

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

Data Collection in progress

- New high quality USACE Topographic – Light Detection and Ranging (LiDAR) and Bathymetry Data
- Base data – boundaries, streams, census blocks, etc.
- Average Annualized Loss data
- Shoreline classification Dataset
- Dams
- Federal and State disaster information
- Repetitive loss data
- Hazard Mitigation plans
- Hazard Mitigation Grants Program (HMGP) projects
- Stream, wave, and water level gage locations
- Pre-Disaster Mitigation Program projects
- Draft Transects

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

FEMA

Coastal Mapping and Flood Risk Topics

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

RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study

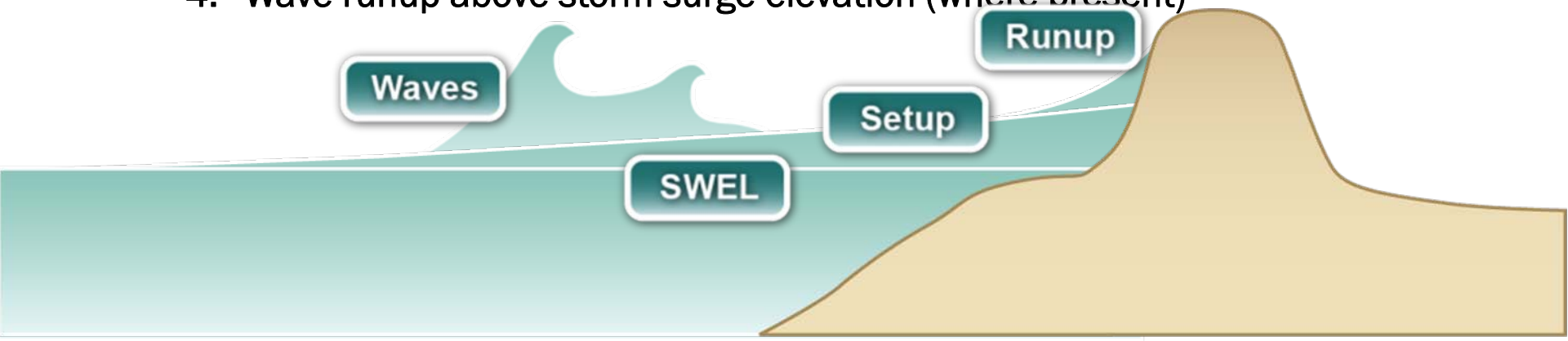
Lake Michigan Discovery Report Appendix D - Delta, Schoolcraft, and Menominee

greatlakescoast.org

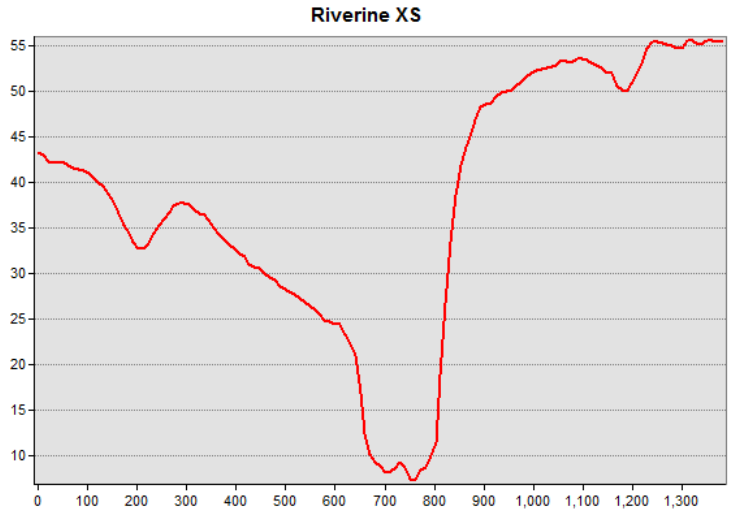
Basic Elements of a Coastal Hazard Analysis

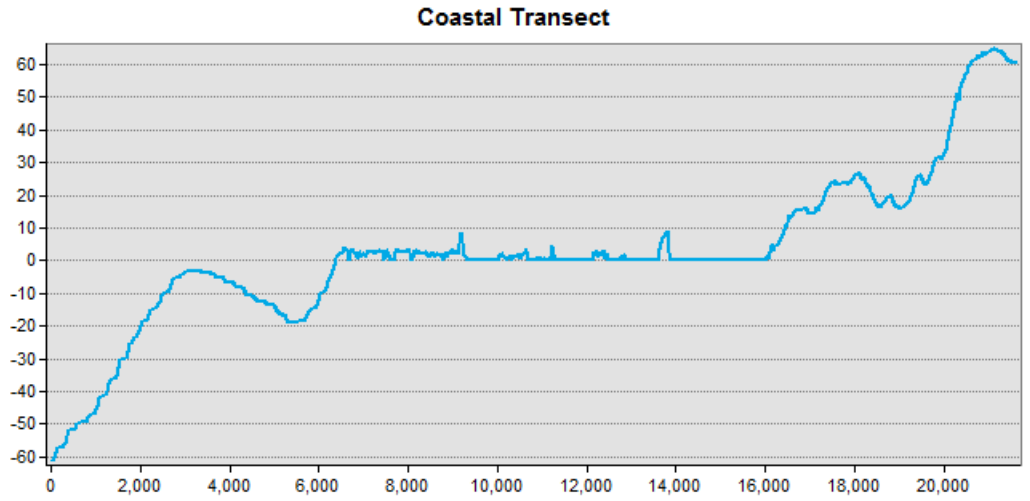
Base Flood Elevation on FIRM includes 4 components:

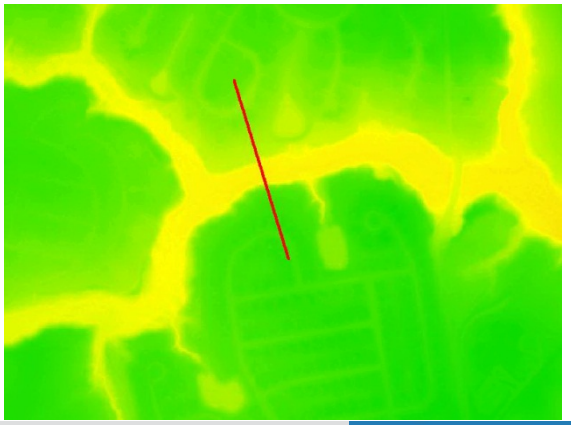
1. Storm surge stillwater elevation (SWEL) – determined from storm surge model
2. Amount of wave setup
3. Wave height above storm surge (stillwater) elevation
4. Wave runup above storm surge elevation (where present)

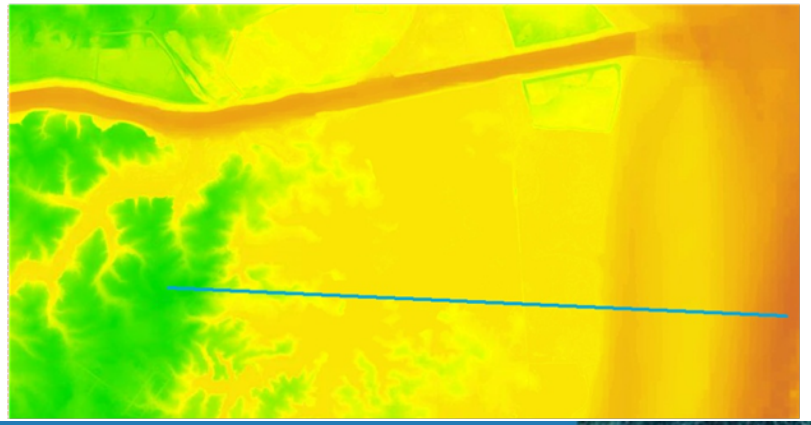


Riverine XS vs Coastal Transect



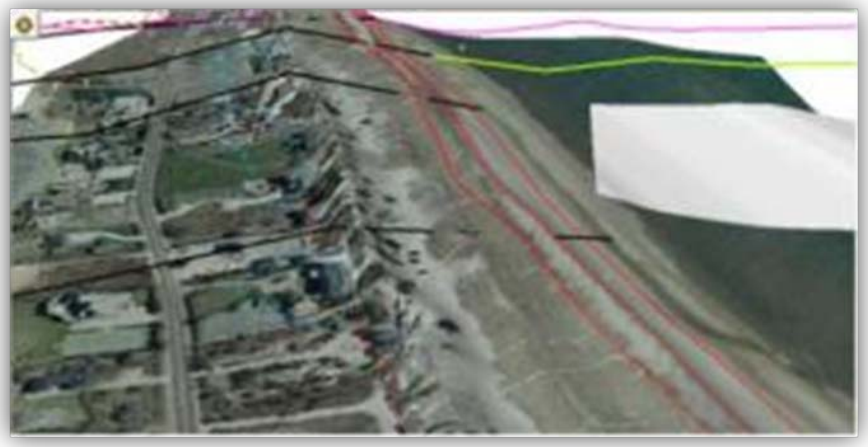






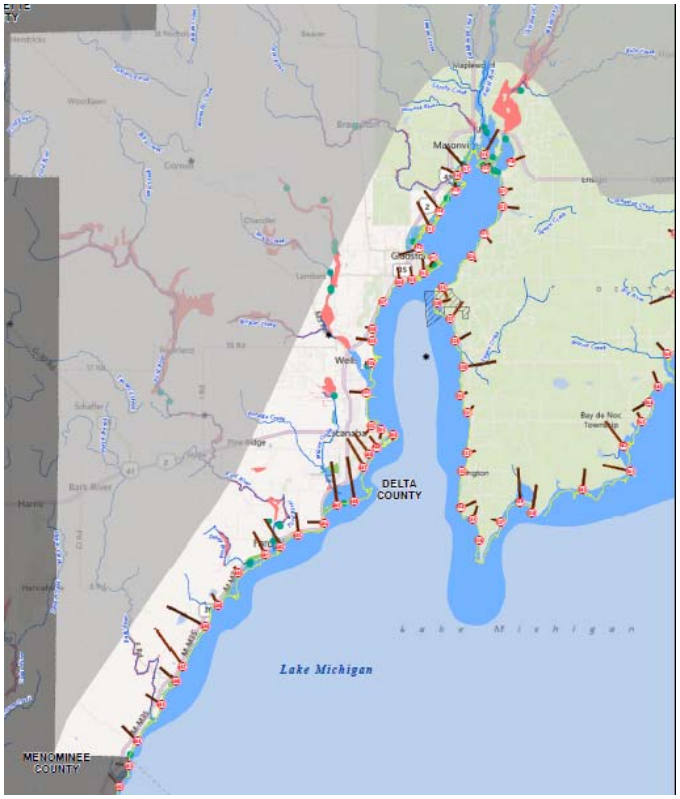
Transect Placement

- 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



Draft Transect Layout Delta County

- 120 transects
- 176 miles of shoreline along Lake Michigan

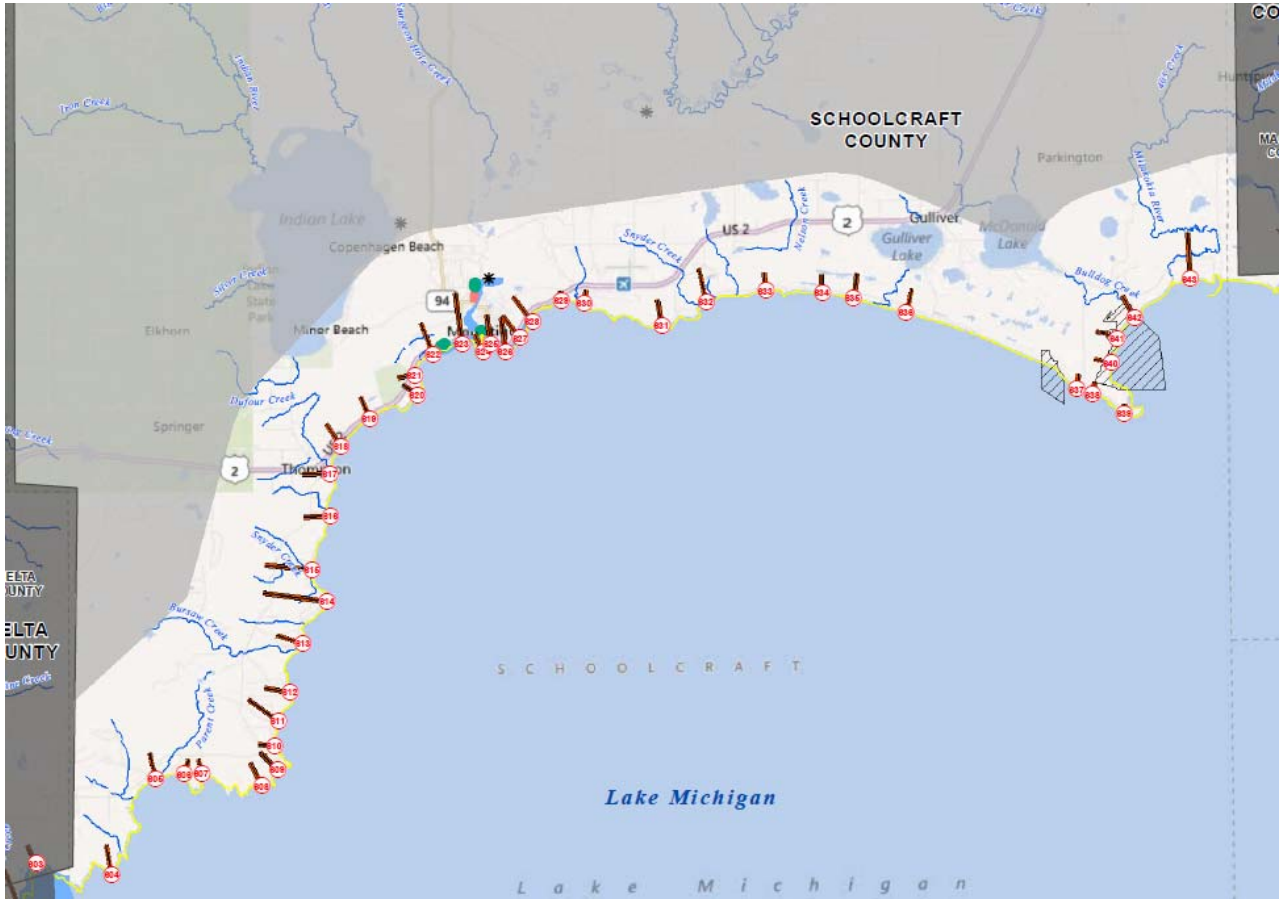


Draft Transect Layout
Delta County

- 120 transects
- 176 miles of shoreline along Lake Michigan

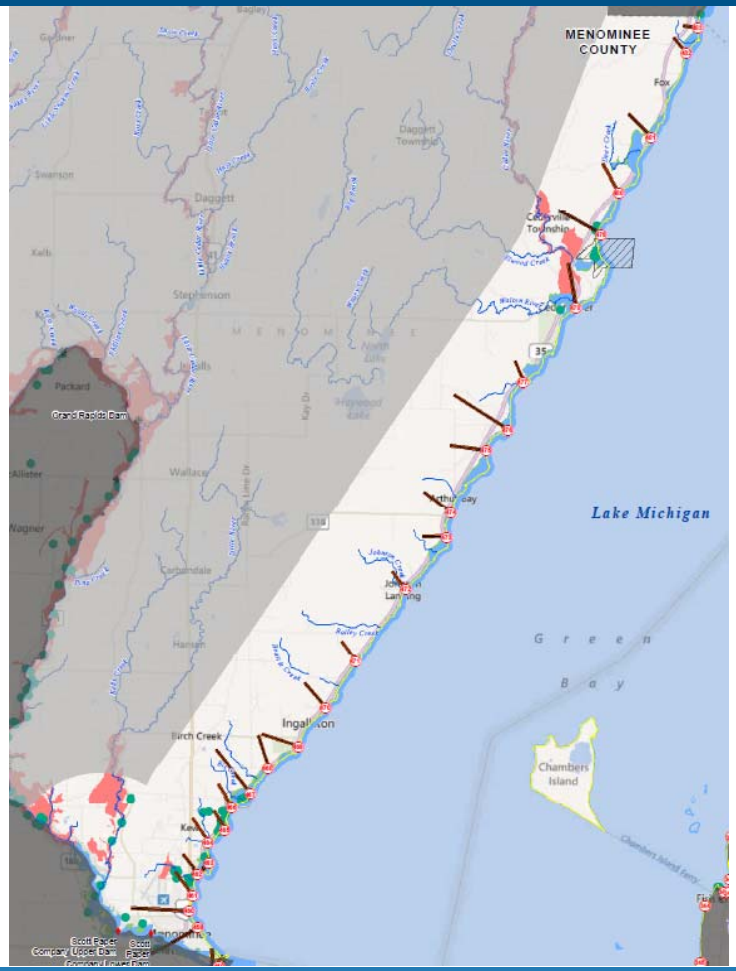
Draft Transect Layout Schoolcraft County

- 40 transects
- 52 miles of shoreline along Lake Michigan



Draft Transect Layout Menominee County

- 25 transects
- 41 miles of shoreline along Lake Michigan



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

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"

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

Wave Action - Structural Risk

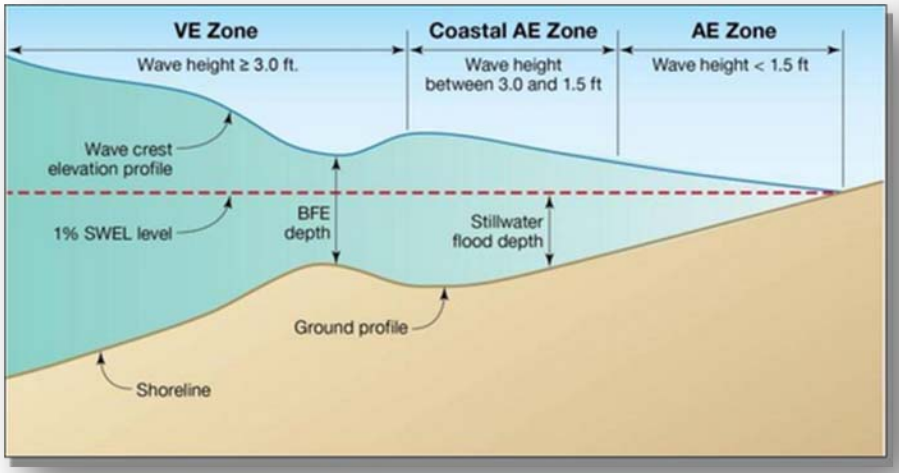
- US Army Corps of Engineers – 1973
  - Breaking wave height of 3 feet
  - “area subject to high velocity waters, including but not limited to hurricane wave wash”
- FEMA – 2000
  - Coastal Construction Manual
  - Additional post-storm damage assessments identified 1.5 wave also can knock a structure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

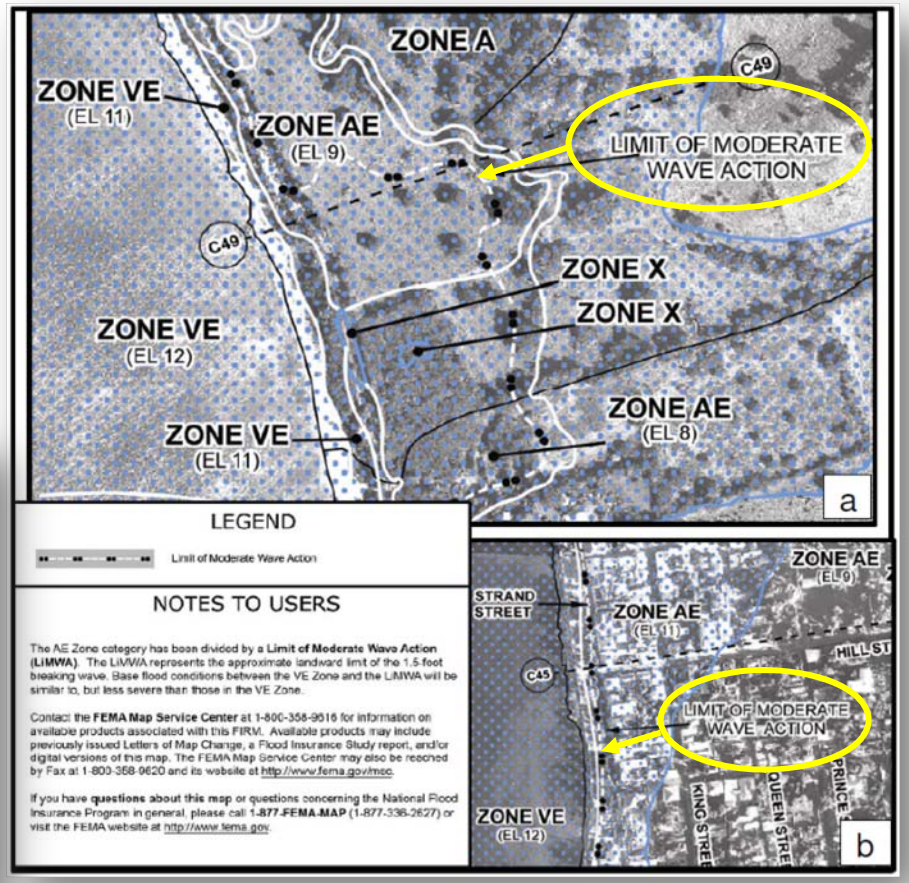
http://www.fema.gov/pdf/rebuild/mat/coastal_a_zones.pdf

Limit of Moderate Wave Action (LiMWA)

FEMA Procedure Memorandum No. 50, 2008

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





RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study
greatlakescoast.org

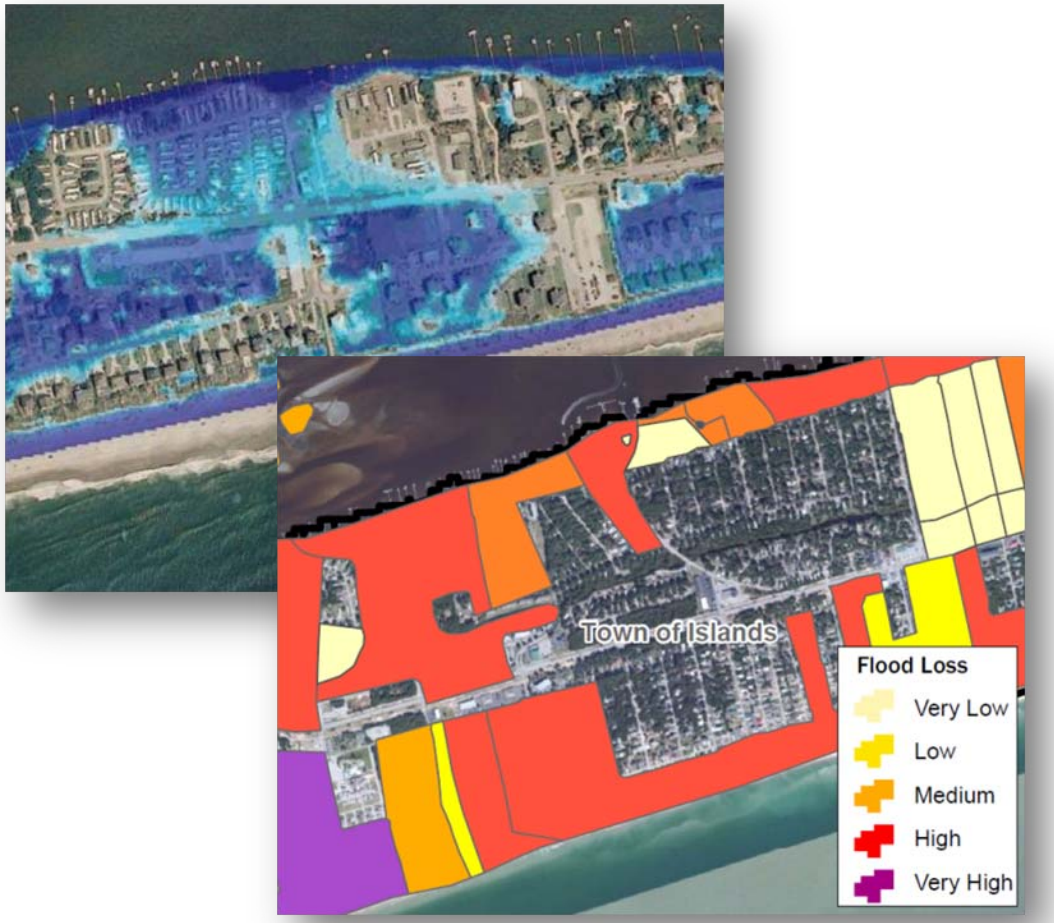
FEMA

Coastal Flood Risk Products

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

Standard Flood Risk Products

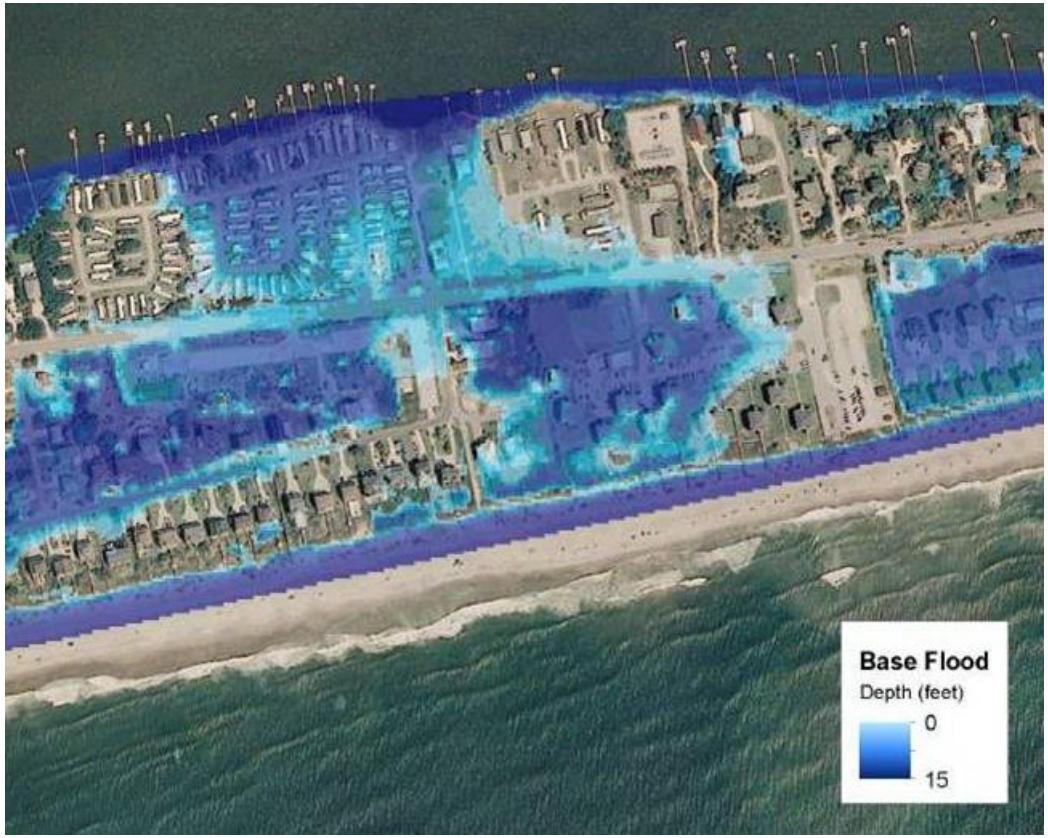
- Coastal Depth Grids
- Flood Risk Assessment (HAZUS)



HAZUS MH
EARTHQUAKE • WIND • FLOOD

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



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

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

Coastal Non-Regulatory Products in Development

Erosion

Red Lantern Restaurant, Lake Michigan, IN

Lake Levels

Lake Michigan Shoreline
Reference

Shoreline Feature Dataset

Upper Peninsula Shoreline
Reference

Shoreline Features Database

Shoreline Material
Sand
Cohesive
Cobble
Diamicton*
Shingle
Bedrock
Artificial

Primary Land Use
High Density Residential
Moderate Density Residential
Low Density Residential
Commercial/Industrial
Park Land
Farm Land
Forested

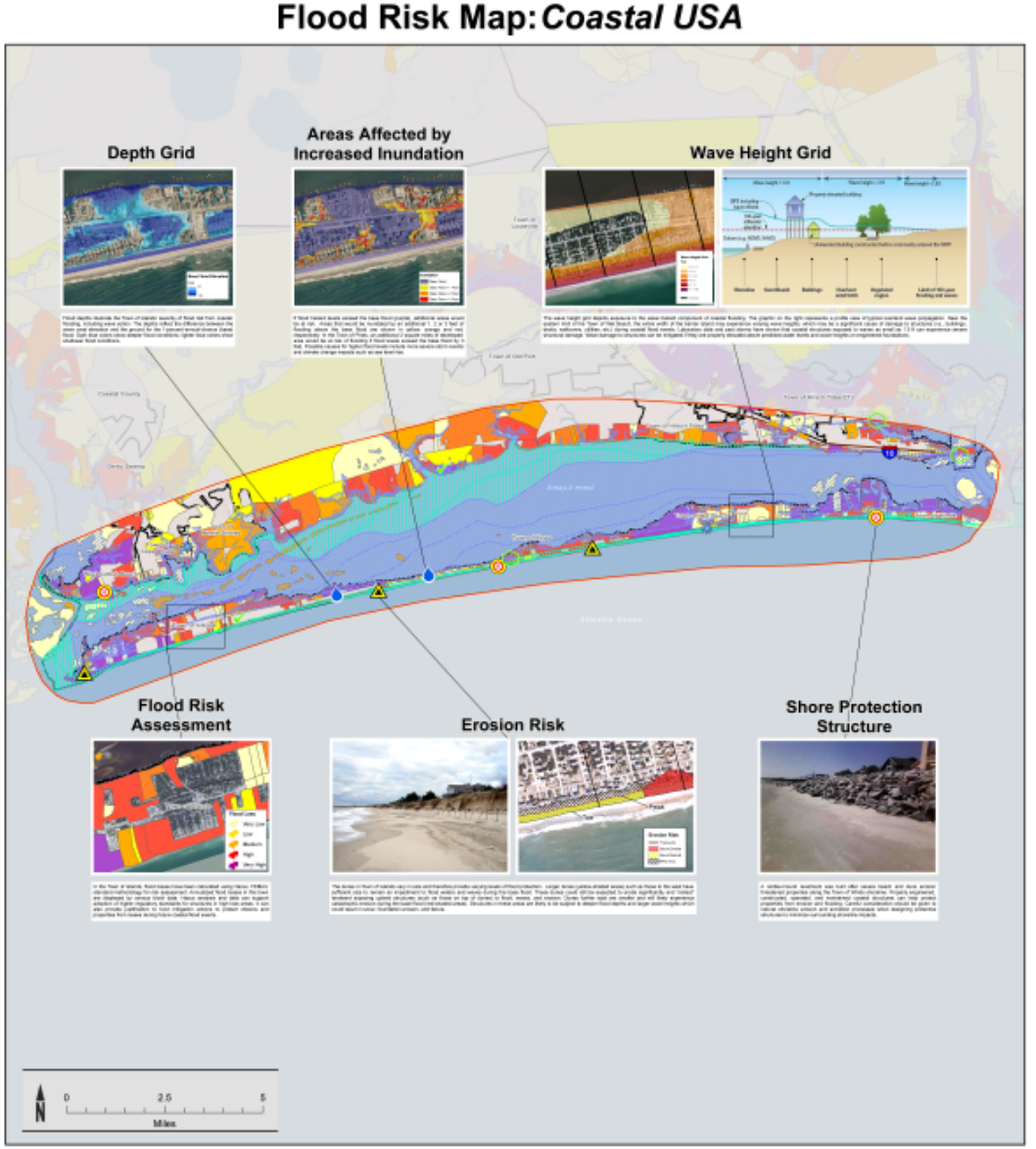
Primary Coast Type
High Dune, 10'+
Dune, 2' - 10'
High Bluff, 10'+
Bluff, 2' - 10'
Coastal Wetland
Flat Coast

Primary Vegetation
None
High Density Shrubs/Trees
Moderate Density Shrubs/Trees
Low Density Shrubs/Trees
Manicured Lawn
Native Vegetation

- 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

Coastal FRM

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



Lake Michigan Discovery Report Appendix D – Delta, Schoolcraft, and Menominee

RiskMAP
Increasing Resilience Together

Coastal Updates to Flood Risk Report

FEMA

- 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*

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

FEMA

How does this apply to my community?

- NFIP Compliance
- Local impacts of coastal study

National Flood Insurance Program

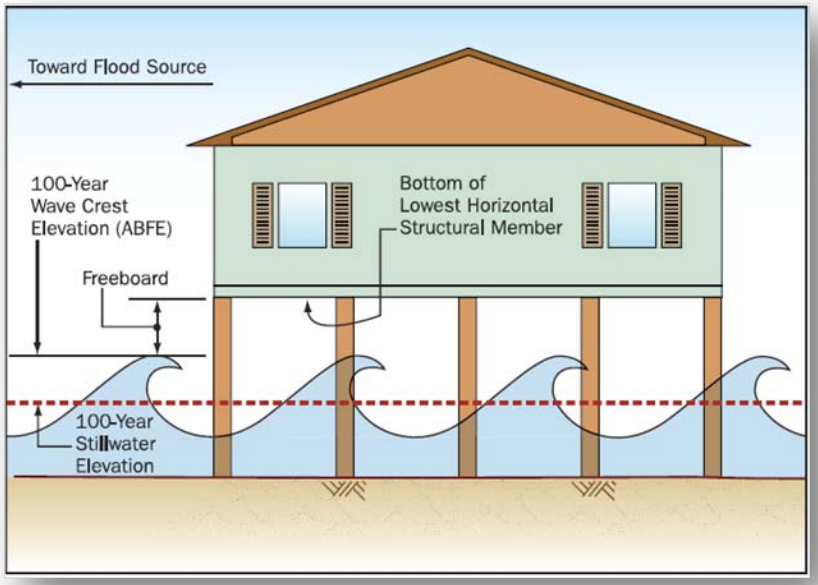
- Allows property owners to purchase flood insurance at reduced rates
- Community responsibilities
  - adopt and enforce compliant regulations
- FOCUS is in building the local floodplain management capability

V Zones for Lake Michigan?

- Lake Michigan communities currently do not have V/VE Zones. Majority of the communities have coastal A/AE zones.
- If costal AE and VE Zones are added on maps where they did not exist before, all affected communities must update regulations to include coastal requirements.
  - State will provide regulations assistance and technical support if/when coastal flood zones are added.

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



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
- 18 creditable activities organized under four categories:

Public Information	Mapping and Regulations
Flood Damage Reduction	Flood Preparation

- http://training.fema.gov/EMIWeb/CRS/

FEMA

Hazard Mitigation

- Opportunities
- Grant Funding

Local Hazard Mitigation Plans

Risk MAP
Risk MAP products and Datasets

Hazard Mitigation Plan
- Uses Risk Information
- Identifies Projects/Actions
- Integrated with Other Community Plans

Other Community Plans
- Comprehensive plans
- Land Use Plans
- Capital Improvement
- Stormwater
- Management Plans
- Emergency Operations

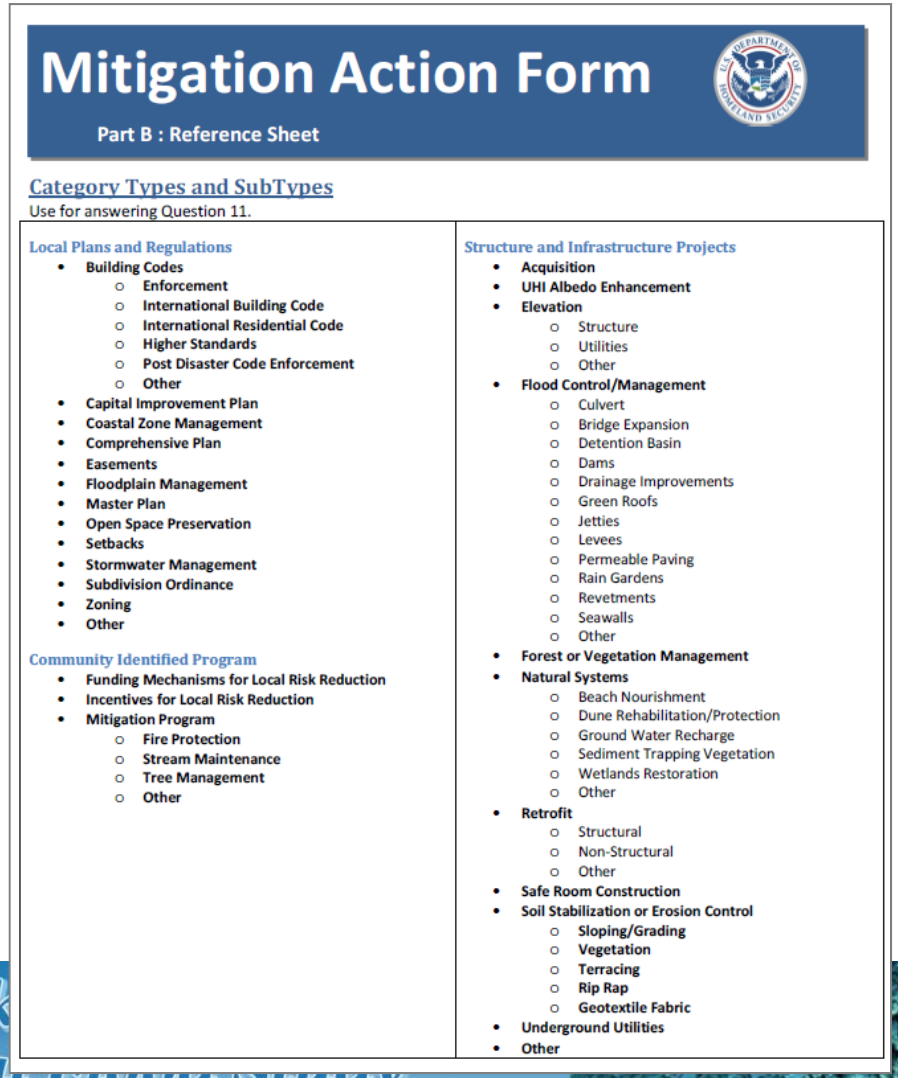
Mitigation Actions/Projects

Identifying Actions

Local Plans and Regulations

Community Identified Programs

Structure and Infrastructure Projects



Mitigation Action Form

Part B : Reference Sheet

Category Types and SubTypes

Use for answering Question 11.

Local Plans and Regulations

- Building Codes
  - Enforcement
  - International Building Code
  - International Residential Code
  - Higher Standards
  - Post Disaster Code Enforcement
  - Other
- Capital Improvement Plan
- Coastal Zone Management
- Comprehensive Plan
- Easements
- Floodplain Management
- Master Plan
- Open Space Preservation
- Setbacks
- Stormwater Management
- Subdivision Ordinance
- Zoning
- Other

Community Identified Program

- Funding Mechanisms for Local Risk Reduction
- Incentives for Local Risk Reduction
- Mitigation Program
  - Fire Protection
  - Stream Maintenance
  - Tree Management
  - Other

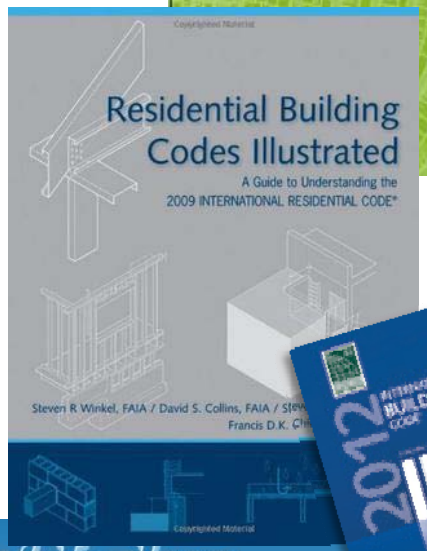
Structure and Infrastructure Projects

- Acquisition
- UHI Albedo Enhancement
- Elevation
  - Structure
  - Utilities
  - Other
- Flood Control/Management
  - Culvert
  - Bridge Expansion
  - Detention Basin
  - Dams
  - Drainage Improvements
  - Green Roofs
  - Jetties
  - Levees
  - Permeable Paving
  - Rain Gardens
  - Revetments
  - Seawalls
  - Other
- Forest or Vegetation Management
- Natural Systems
  - Beach Nourishment
  - Dune Rehabilitation/Protection
  - Ground Water Recharge
  - Sediment Trapping Vegetation
  - Wetlands Restoration
  - Other
- Retrofit
  - Structural
  - Non-Structural
  - Other
- Safe Room Construction
- Soil Stabilization or Erosion Control
  - Sloping/Grading
  - Vegetation
  - Terracing
  - Rip Rap
  - Geotextile Fabric
- Underground Utilities
- Other

Lake Michigan Discovery Report Appendix D - Delta, Schoolcraft, and Menominee

Local Plans and Regulations

- Open Space Preservation
- Zoning
- Building Codes
- Considering risk reduction across departments
  - Comprehensive Plans
  - Master Plans



Increasing Resilience Together

Great Lakes Coastal Flood

Lake Michigan Discovery Report Appendix D - Delta, Schoolcraft, and Menominee

Community Identified Program

- Funding Mechanisms (e.g. stormwater utility)
- Incentives for Local Risk Reduction
- Stream Maintenance Program

NM Energy, Minerals and Natural Resources Dept

Structure and Infrastructure Projects

- Acquisition and Elevation
- Soil Stabilization and Erosion Control
- Retrofitting
- Vegetation Management

lizzieinfirenze.wordpress.com

stitution of Mechanical Engineers

RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study

Lake Michigan Discovery Report Appendix D - Delta, Schoolcraft, and Menominee

greatlakescoast.org

Mitigation Activities

- Menominee County plan expired in April 2012.
- Delta County Mitigation plan expires in November 2012.
- Schoolcraft County Mitigation plan expires in November 2012.

FEMA Funding Opportunities

- Hazard Mitigation Assistance includes both post-disaster and pre-disaster grants

HMGP is a post-disaster grant program.

PDM, FMA, RFC and SRL are available annually, subject to Congressional appropriations.

- Mitigation Plan Requirement
- Local/State Cost Share
- States Manage Programs and Set Funding Priorities
- State Hazard Mitigation Officer (SHMO) is contact

Mitigation Grants/Programs: OFAs

US Army Corps of Engineers®

RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study

Lake Michigan Discovery Report Appendix D - Delta, Schoolcraft, and Menominee

greatlakescoast.org

Meet the Action Form

Mitigation Action Form

Contact Information

Please enter the primary contact a

1. **Full Name:**

2. **Title and Organization :**

3. **Jurisdiction Name(s) :**

Mitigation Action Informatio

4. **Mitigation Activity Name**

5. **Describe the natural hazard and mitig**

6. **Hazard Type?**

☐ *Flood* ☐ *Erosion* ☐*Storm Sur*
☐ *Landslide* ☐ *Lighting* ☐ *Seve*
☐ *Wind* ☐ *Multiple Hazards* ☐

7. **What is the Mitigation Category?**

☐ *Local Plans and Regulations*
*Category*_____

8. **How was this action/strategy identi**

☐ *Risk Map Process*
☐ *Comprehensive Land Use Plan*
☐ *Capital Improvement Plan*

9. **Who is the Responsible Agency?**

☐ *Building Code Department*
☐ *Community Development*
☐ *Emergency Management*

9. **Who is the Responsible Agency?**

☐ *Building Code Department* ☐ *Planning* *Other*_____
☐ *Community Development* ☐ *Public Works*
☐ *Emergency Management* ☐ *State DOT*

10. **What is the expected/potential funding source?**

☐ *Community* ☐ *FEMA*
☐ *Private Sector, including Foundations* ☐ *Other Federal Agency*
☐ *Regional Water Management District* ☐ *Property Owner*
☐ *County* ☐ *Other*_____
☐ *State*

11. **What is the commitment for this action?**

☐ *new* ☐ *strengthen existing* ☐ *maintain existing*

12. **What is the status of this action?**

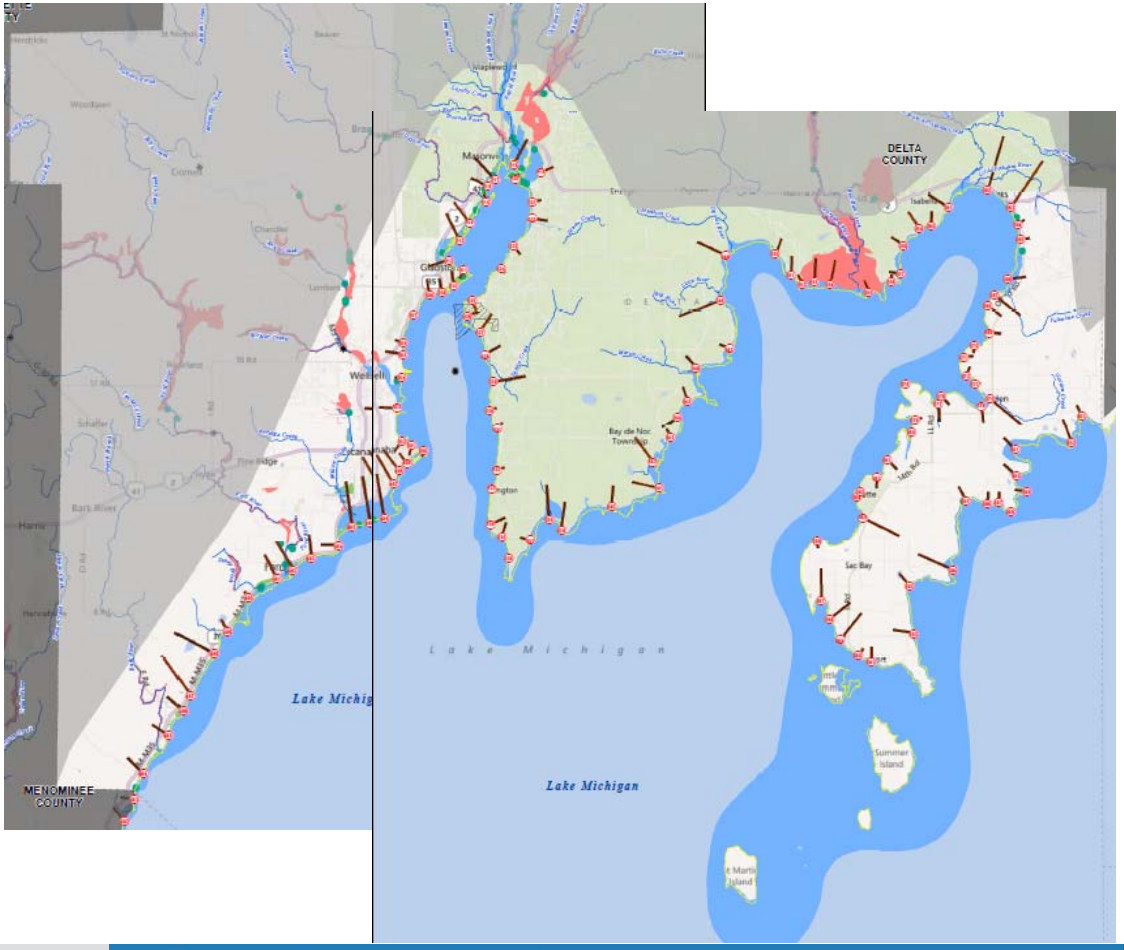
☐ *identified* ☐ *scoped* ☐ *in progress* ☐ *complete*

FEMA

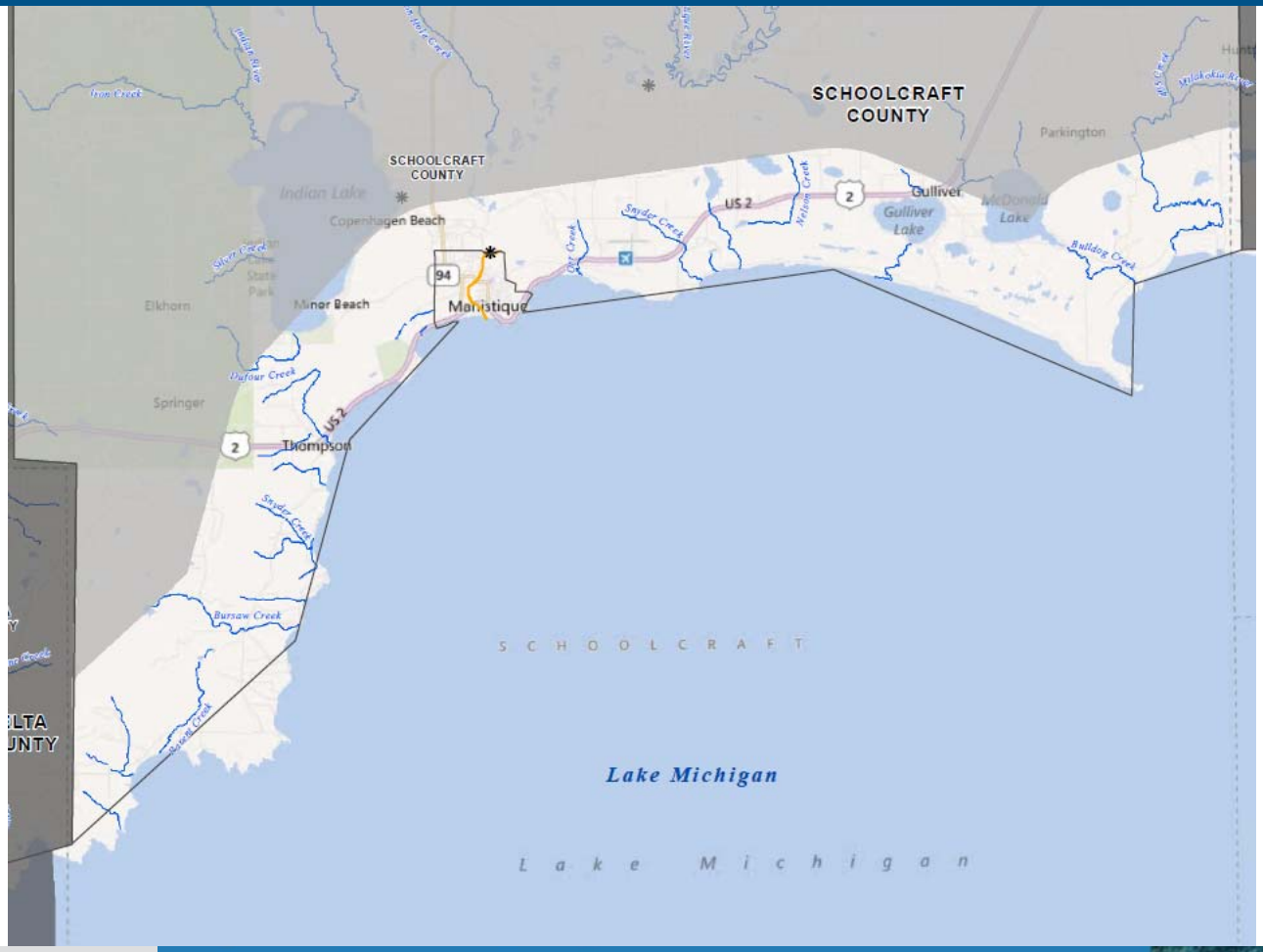
Interactive Session

- View and Discuss Local Coastal Areas of Concern Using the Discovery Map
- Discuss Mitigation Action Opportunities and Introduce the Mitigation Action Form

Delta County, MI
Discovery Map – Flood Hazard Areas



Schoolcraft County, MI
Discovery Map – CNMS Status

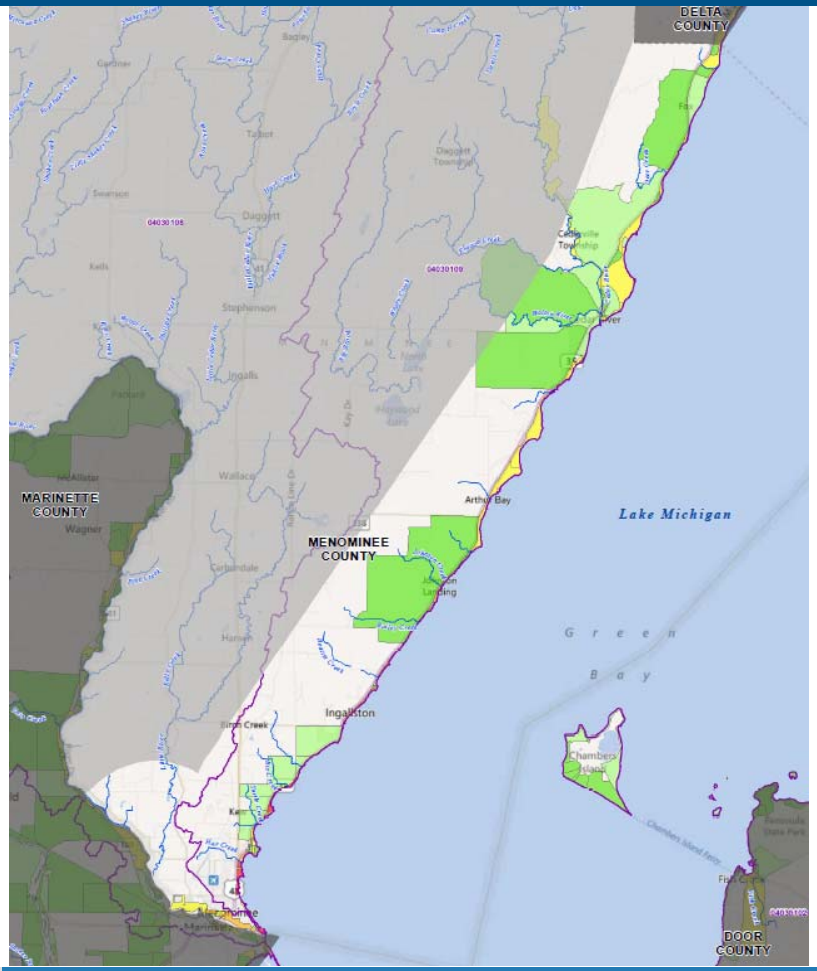


RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study
greatlakescoast.org

Lake Michigan Discovery Report Appendix D - Delta, Schoolcraft, and Menominee

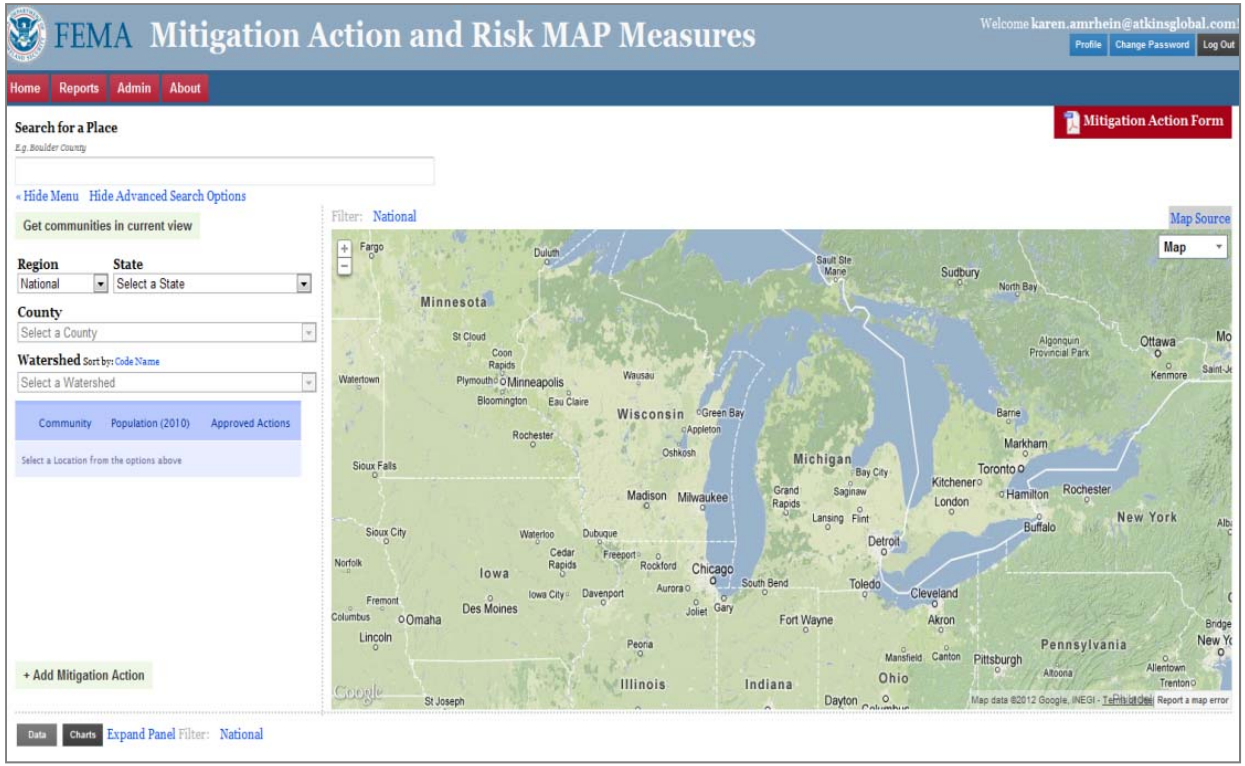
Menominee County, MI
Discovery Map – AAL



RiskMAP
Increasing Resilience Together

Great Lakes Coastal Flood Study
greatlakescoast.org

Action Tracker



We will input your community's action into the Action Tracker and send you a report and a link - http://fema.starr-team.com

- New mitigation tool
- Houses community-identified mitigation actions
- Actions can be edited by community officials
- A tool for communities to support future mitigation planning efforts

Next Steps

- **Communities:**
  - Provide data and Mitigation Action Forms to STARR with a target date of September 14, 2012

- **STARR/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

FEMA

Questions?

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

Contact

- FEMA Region V
  - Ken Hinterlong @ ken.hinterlong@fema.dhs.gov
  - Lee Traeger @ Lee.traeger@fema.dhs.gov
- Michigan Partners
  - Les Thomas@ Thomasl@michigan.gov
- STARR
  - Brian Caufield (technical) @ caufieldac@cdmsmith.com
  - Jaspreet Randhawa (outreach) @ randhawajg@cdmsmith.com
- Online
  - info@greatlakescoast.org

ATTACHMENT G

COASTAL DATA REQUEST FORM COMPILATION

Lake Michigan Coastal Data Request Form Compilation
Risk Assessment and Flood Mitigation Information
***Please refer to sample Coastal Data Request Form found in Attachment A**

CONTACT INFORMATION					RISK ASSESSMENT		FLOOD MITIGATION INFORMATION										
Community, County or State Organization	**County**	**State**	**Contact Name**	**Contact Title**	**Does your community have HAZUS-based loss estimates from average annualized loss?**	**Does your community have other risk assessment data?**	**Does your community have a hazard mitigation plan?**	**Does the plan reflect any coastal flood hazards?**	**Does the hazard mitigation plan indicate any data deficiencies for flood hazards that could be addressed through a flood study, especially near coastal zones?**	**Does your community have on-going mitigation projects, such as acquisition, elevation, flood control, soil stabilization, natural systems restoration, floodproofing, etc.**	**Any specific coastal mitigation projects?**	**Does your community have experience with coastal flood disasters and flood disaster recovery?**	**Does your community coordinate floodplain management programs with programs for the management and planning of open space? If possible, any coastal specific?**	**Have you had any prior proactive mitigation actions and planning efforts that resulted in reduced losses? If possible, any coastal specific?**	**Has your community applied and granted Individual Assistance/Public Assistance grants for declared disasters?**	**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?**	**How would you rank the community's ability to implement mitigation actions and to communicate flood risk to citizens?**
Brampton, Township of	Delta	MI	Dennis J. Maufont	Township Supervisor	No	No	No	Unknown since we do not have a plan.	No - We do not have a plan.	No	No	No - We have never had a coastal flood or flood disaster, that I know of since I have been living in the Township.	No	No - We have not had any losses.	No	No	Medium
Escanaba, City of	Delta	MI	Terry Flower														
Menominee County Emergency Management	Menominee	MI	Trina Rabida	Emergency Management Coordinator	Unknown	Emergency management planning requires a great amount of risk assessment to be done for various things; however, I am not aware of any specific risk assessment data with regard to coastal flooding that this office has done in the past. It may have been done by other departments/committees/commissions, outside organizations, etc.	Yes - currently being updated	Yes - The Hazard Mitigation Plan addresses various hazards in the county, including flooding. Various types of flooding on bodies of water within the county were ranked from low to moderate risk. As noted elsewhere in this survey, the plan is currently being reviewed by CUPPAD so this data may change based on that review.	No - The plan does not seem to indicate that but it is under review and that could be changed.	Unknown	Unknown	In a very general sense by way of planning, training and perhaps past disaster exercises.	Unknown	Unknown - I have found nothing to support that formal efforts were made by the county itself; municipalities would have to be contacted to answer this question with respect to their own communities.	Unknown - I have found nothing to support that such assistance has been requested by the county itself in the past.	Yes - With regard to only the county (and not the municipalities), we applied for and received a planning grant to update our plan. I believe a grant was also awarded 5+ years ago to develop the plan. I have found nothing else to support that any other mitigation grants were applied for or obtained by Menominee County itself.	Medium - The ability is definitely there, via a number of means. The companies that operate the hydro facilities/dams also provide information to folks that could be affected (as required by FERC).

Lake Michigan Coastal Data Request Form Compilation
Other Data and Historical Flood Data
***Please refer to sample Coastal Data Request Form found in Attachment A**

CONTACT INFORMATION					OTHER DATA					HISTORICAL FLOOD DATA
Community, County or State Organization	**County**	**State**	**Contact Name**	**Contact Title**	**Hydraulic Structures (i.e. bridges, culverts, levees, dams) with inspection status, if available**	**Elevated roads**	**Critical Facilities**	**Other known hazards with geographical boundaries, i.e., landslide hazard areas, storm surge inundation zones, wildfire hazard areas, etc.**	**Other relevant data**	**Are you aware of any coastal flooding issues not represented on effective FIRMs:**
Brampton, Township of	Delta	MI	Dennis J. Maufont	Township Supervisor						No
Escanaba, City of	Delta	MI	Terry Flower							
Menominee County Emergency Management	Menominee	MI	Trina Rabida	Emergency Management Coordinator						Unknown

Lake Michigan Coastal Data Request Form Compilation
Basemap Data and Coastal Data
***Please refer to sample Coastal Data Request Form found in Attachment A**

CONTACT INFORMATION					BASE MAP DATA		COASTAL DATA						
Community, County or State Organization	County	State	Contact Name	Contact Title	Topography	Property Information (Building Footprints, Parcel Data, Tax Assessor's Data)	Coastal Structure Inventory (Seawalls, Jetties, etc)	Coastal Feature Inventory (dunes, bluffs, etc)	Shoreline Change Data	Locations of beach nourishment or dune restoration projects	Areas of significant beach or dune erosion	Mean high water	Mean lake level
Brampton, Township of	Delta	MI	Dennis J. Maufont	Township Supervisor									
Escanaba, City of	Delta	MI	Terry Flower		LiDAR & 1-ft contours (LiDAR was flown Spring 2012)	Parcel data							
Menominee County Emergency Management	Menominee	MI	Trina Rabida	Emergency Management Coordinator									

Lake Michigan Coastal Data Request Form Compilation
Community Plans and Projects and Other GIS Data
***Please refer to sample Coastal Data Request Form found in Attachment A**

CONTACT INFORMATION				COMMUNITY PLANS AND PROJECTS							GIS DATA
Community, County or State Organization	**County**	**Contact Name**	**Contact Title**	**Does your community have a comprehensive plan? If so, was your hazard mitigation plan coordinated with the comprehensive plan?**	**Does your community's comprehensive plan have a special consideration for coastal areas?**	**Does your community have a coastal zone management plan?**	**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? If so, explain the role in floodplain management and provide examples of programs in place.**	**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):**	**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.)**	**Any other comments/concerns based on local knowledge:**	**Other GIS Data Available - include type of data, date of data, data sources, etc if available**
Brampton, Township of	Delta	Dennis J. Maufont	Township Supervisor	Yes - It was a regional comprehensive plan.	No	No	No. Our Zoning & Building permits are handled at the county.	No	No		
Escanaba, City of	Delta	Terry Flower									
Menominee County Emergency Management	Menominee	Trina Rabida	Emergency Management Coordinator	Yes - Our community has a Comprehensive Plan. No - The Hazard Mitigation Plan was not coordinated with the Comprehensive Plan. The two plans were reviewed by two completely different entities (the Hazard Mitigation Plan by CUPPAD and the comprehensive plan by the Menominee County Planning Commission). This plan is now titled "Menominee County Master Plan."	The plan discusses floodplain and wetland areas.	Unknown	Menominee County does have a Planning Commission. Contact information can be obtained from the Menominee County Administrator's office: 906-863-7779	Unknown	Unknown	Menominee County's Floodplain Administrator is Daniel Menacher, whose primary job is Building Code Enforcement. CUPPAD is working on the updating of our Hazard Mitigation Plan, which expired in April 2012 and will take approximately 18-24 months for the review/update/approval process. Understanding that municipalities within the county also have their own roles and responsibilities with regard to these types of things, I can only answer for my office. I have only been in the Emergency Management Coordinator position for 6 months and have to rely on the records and information made available to me. In other words, the answers on this survey may not necessarily be all-inclusive for Menominee County as a whole.	