



MUSKEGON COUNTY Community Consultation Officers (CCO) Meeting

December 3, 2019



FEMA



TODAY'S AGENDA

Reviewing the Updated Flood Risk Data for Your County

Next Steps in the Map Adoption Process

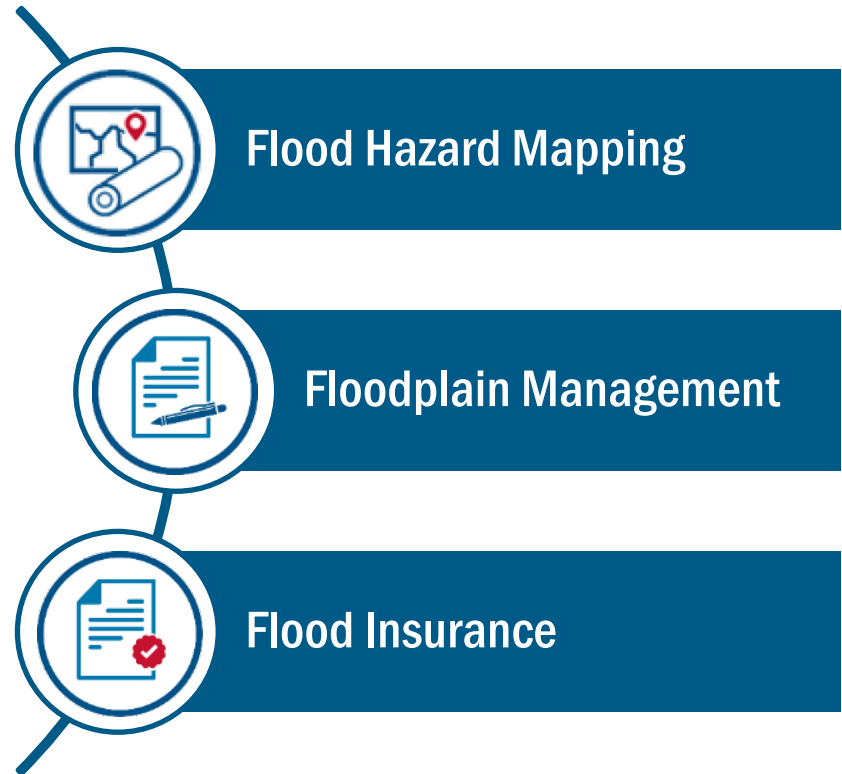
Understanding Floodplain Management Ordinance Requirements

Understanding Flood Insurance

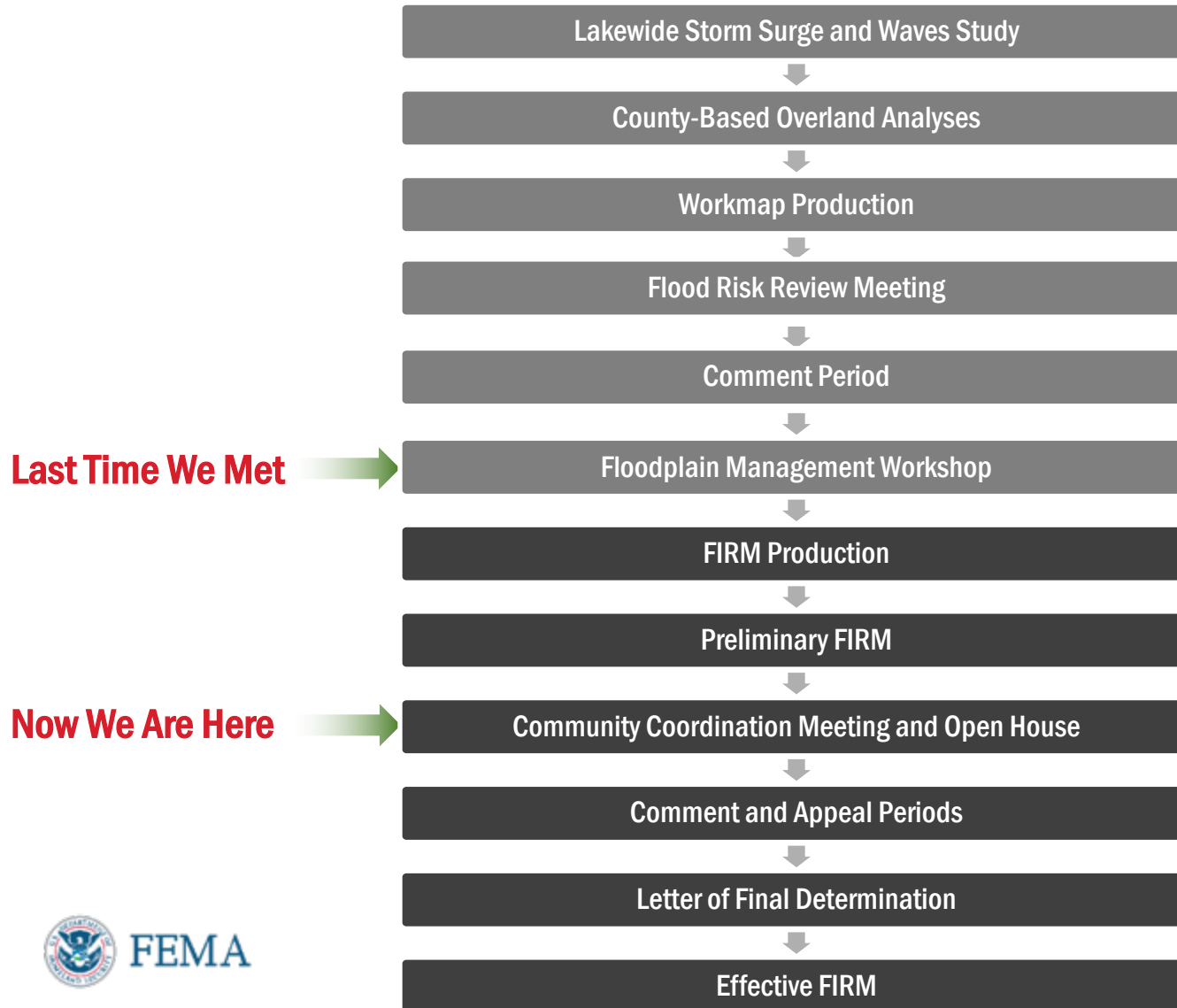
Hazard Mitigation Planning

The National Flood Insurance Program

The National Flood Insurance Program, or NFIP, balances three related areas that must support each other.



The Status of this Study



Reviewing the Updated Flood Risk Data for your County



FEMA

RiskMAP
Increasing Resilience Together

Why is FEMA Updating Your Flood Maps?

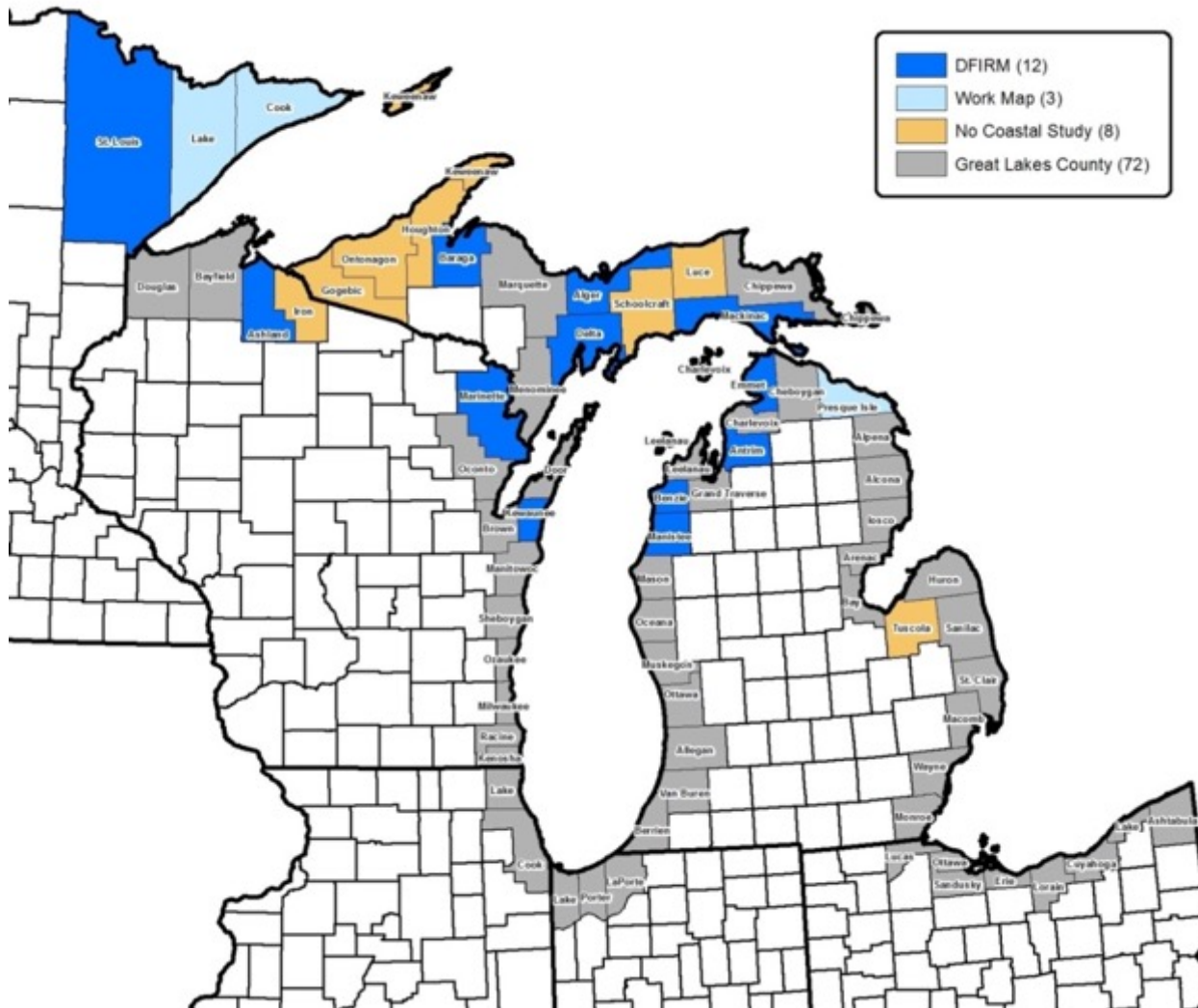
The Great Lakes Coastal Flood Study provides updated flood risk information for areas around each of the Great Lakes using uniform methodology, updated terrain data, and modern wave modeling techniques.

Many factors contribute to flood map revisions:

- ▶ **Population growth and increased development**
- ▶ **Movement of rivers and shorelines**
- ▶ **Changing technology and improved modeling techniques and data**

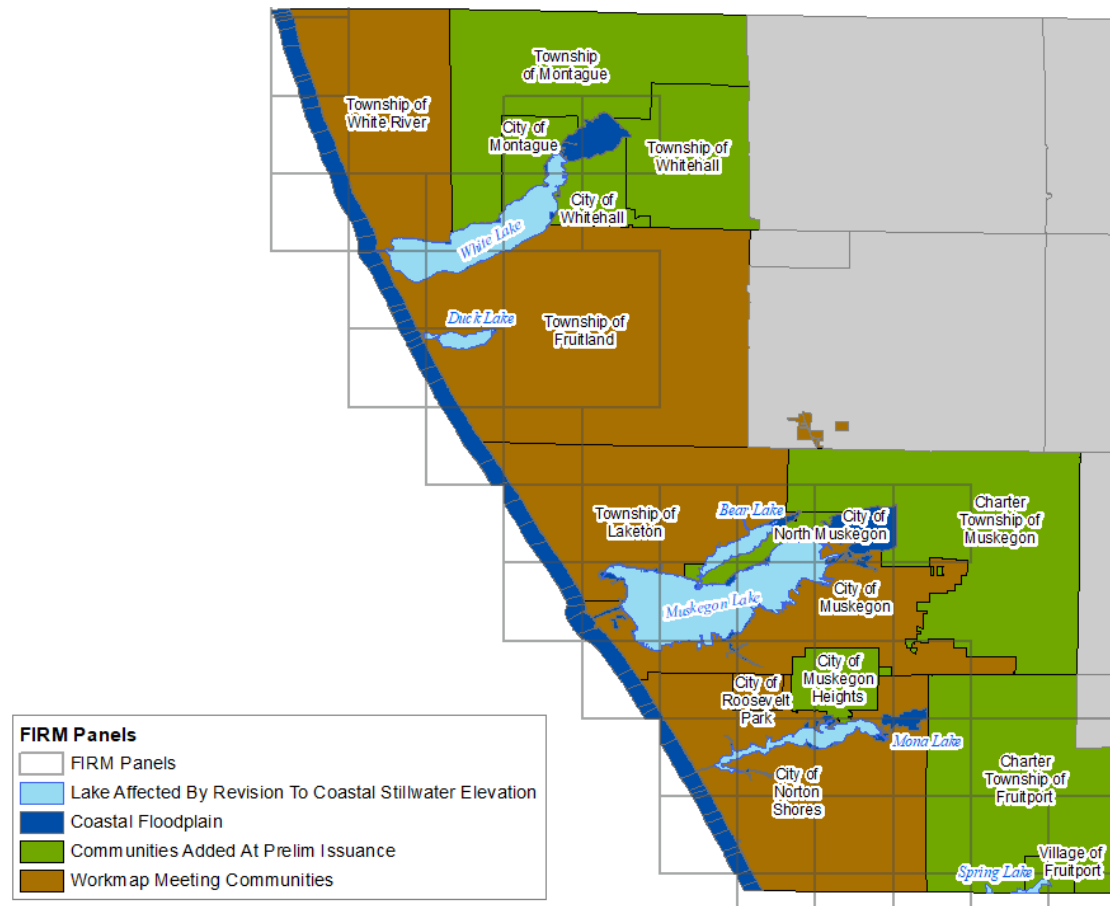


Program Goals and Status



Flood Study Overview– Muskegon County

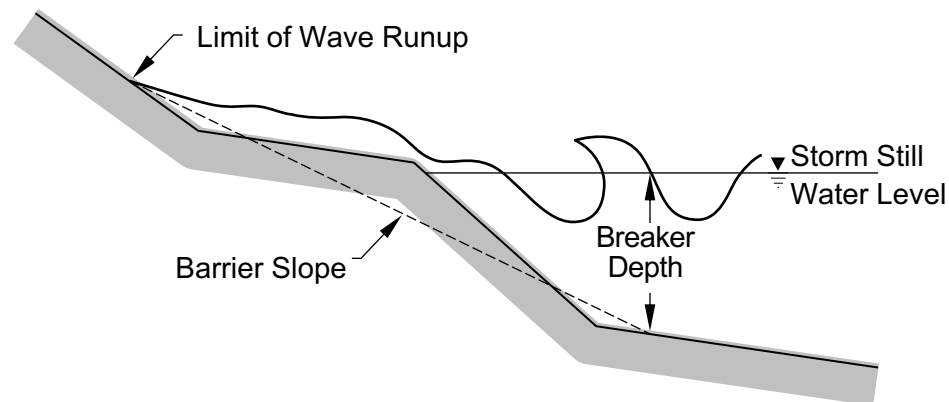
- ▶ Coastal detailed (Zone AE/VE/AO/AH) study – 25.5 open coast shoreline miles
- ▶ Tie-Ins to approximate (Zone A) and detailed (Zone AE) study – 16 Riverine Streams
- ▶ Continuation of Spring Lake floodplain across Ottawa-Muskegon county boundary
- ▶ Adjustment of Black Lake BFE to achieve agreement with Ottawa County



The Great Lakes Coastal Flood Study Approach

Regional Study Approach

- Lakewide water level and wave analysis
 - 150 storms from 1960 to 2009
 - Modeling conducted by STARR in 2017
- Greater consistency in assumptions
- Reduces number of boundary conditions



Wave Runup Schematic

from FEMA Great Lakes Coastal Guidelines "D.3" Update

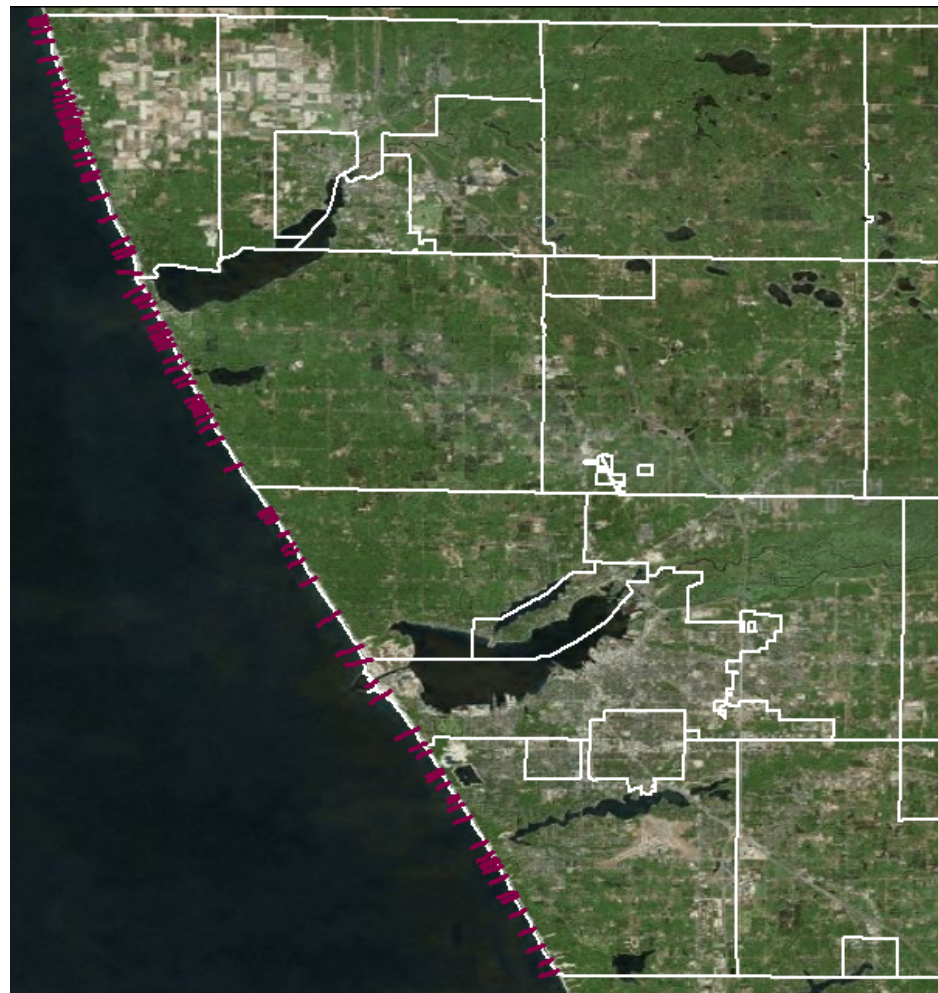
Local/County-Level Activities

- Mapping tasks performed at the county level
- Nearshore wave transformations
- Episodic erosion
- Wave setup and runup
- Overland wave propagation

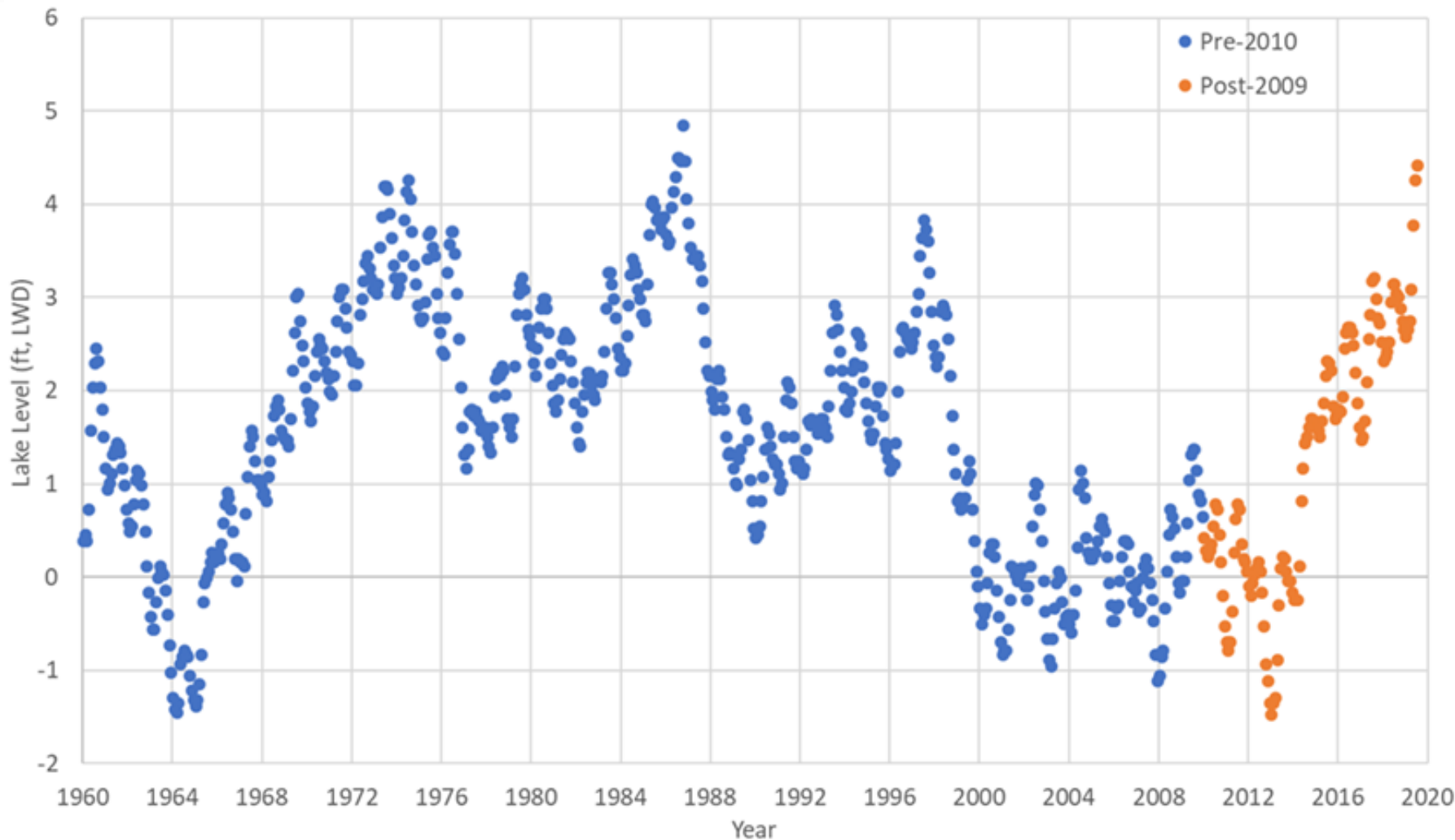
The Great Lakes Coastal Flood Study in Muskegon County

Muskegon County Coastal Flood Hazard Analysis:

- 25.5 miles of coastline
- 91 coastal transects
- Transects placed at representative shoreline reaches based on:
 - Topography
 - Exposure
 - Shoreline material
 - Upland development
- Integration of riverine and coastal Special Flood Hazard Areas
- Topography
 - 2013 U.S. Army Corps of Engineers LiDAR



Lake Michigan Water Levels



Special Flood Hazard Areas (SFHAs)

Zone VE

- Coastal high-hazard zone, where wave action and/or high-velocity water can cause structural damage during the 1-percent-annual-chance flood
- Wave heights or wave runup ≥ 3 feet
- Subdivided into elevation zones, and BFEs are assigned

Zone AE

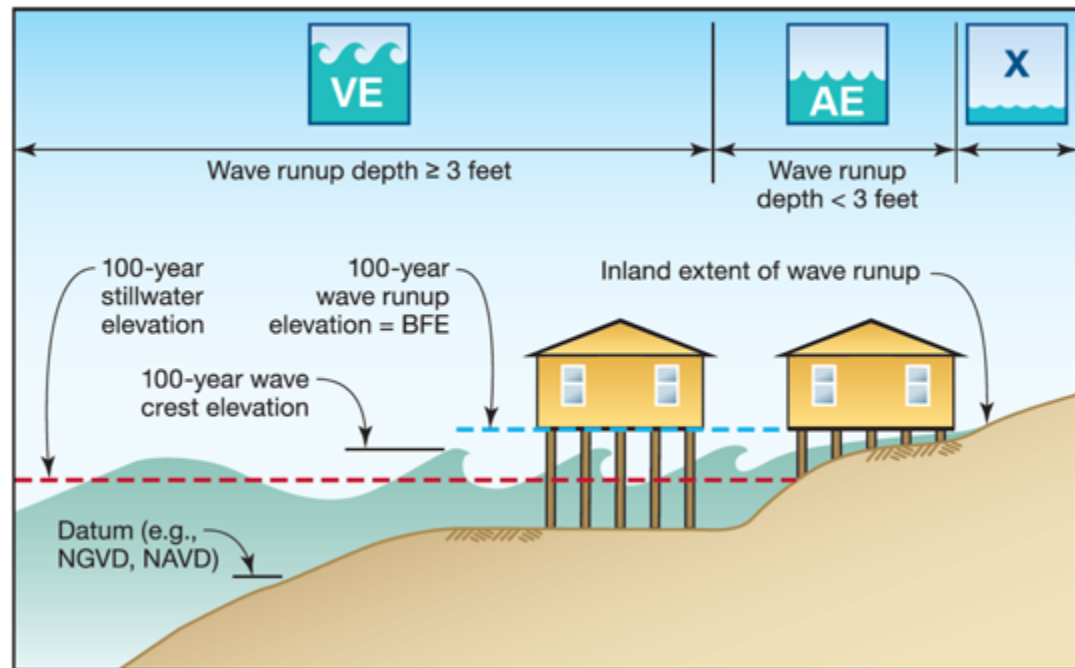
- Applied in areas subject to lower wave energy or inundation by the 1-percent-annual-chance flood
- Wave heights or wave runup < 3 feet
- Subdivided into elevation zones, and BFEs are assigned

Zone AO

- Applied in areas of sheet flow and shallow flooding
- Assigned an associated depth instead of a BFE

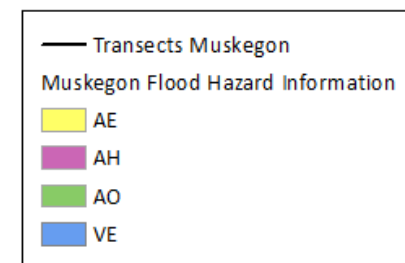
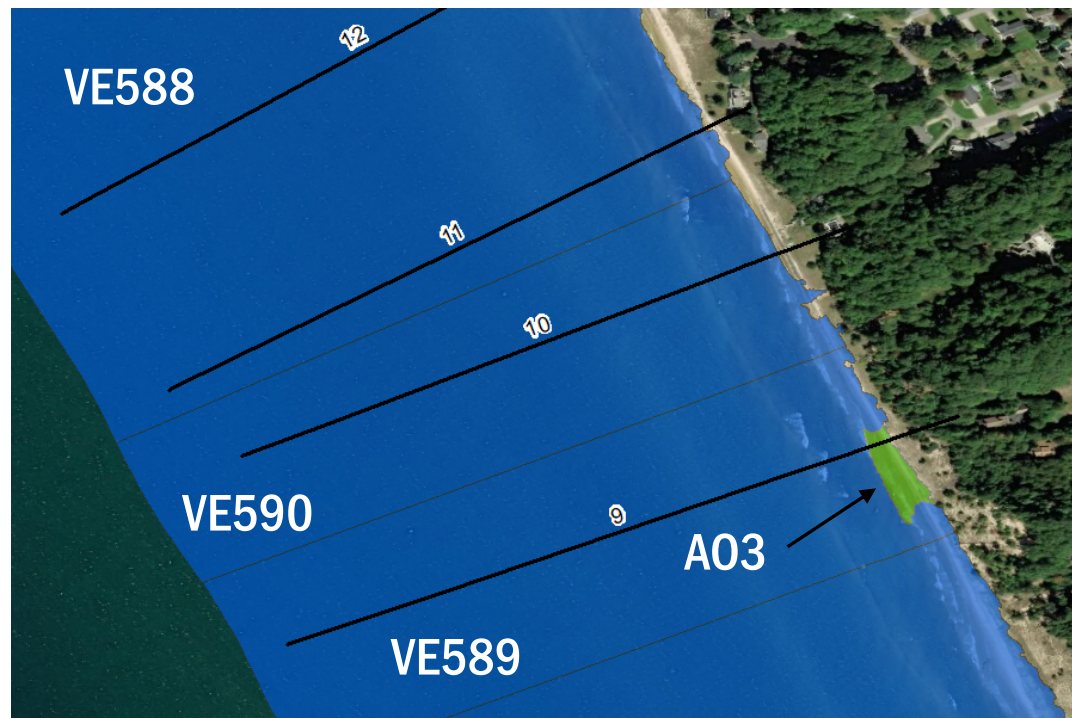
Zone AH

- Applied in areas of ponding
- Assigned a BFE

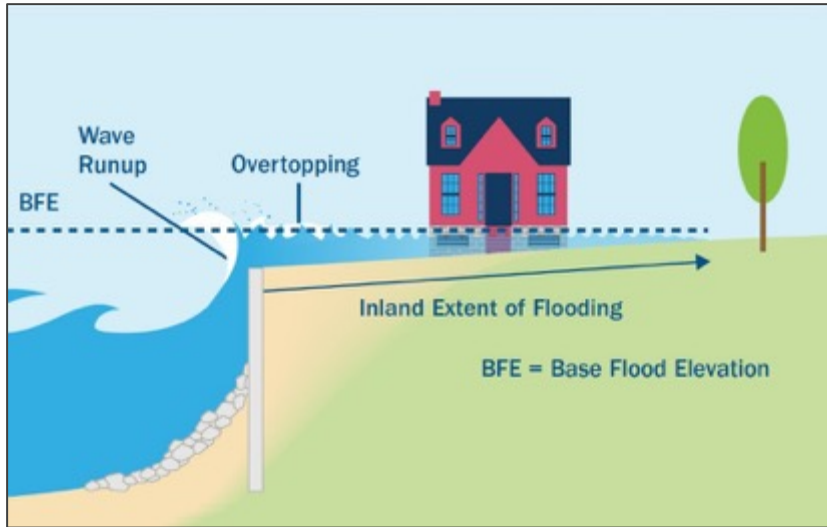


Wave Runup Mapping

- Wave runup is very sensitive to shoreline characteristics, especially slope
- Single Base Flood Elevation (BFE)
- Gutters perpendicular to the shore divide the BFEs
- Transitional zones capture changes in shoreline characteristics between transects



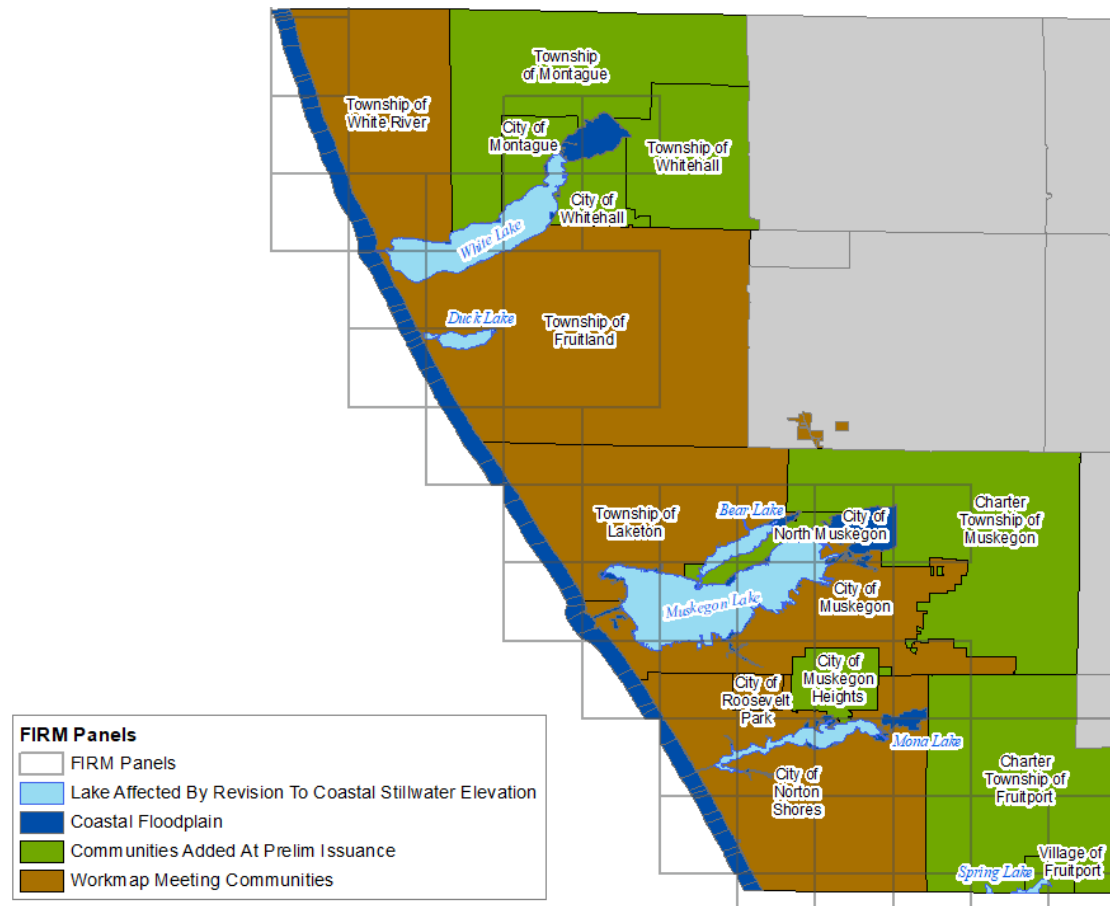
Wave Overtopping



- ▶ Wave overtopping occurs when the wave runup elevation exceeds the barrier's crest elevation
- ▶ When overtopping occurs, the zone behind the barrier is designated as:
 - AE if the landward slope is positive
 - BFE established based on runup elevation
 - AO if the landward slope is negative
 - Sheet flow depth established
 - AH if the landward slope is negative and flow is trapped behind a barrier
 - BFE established
- ▶ The overtopping rate determines VE splash zones and sheet flow depths

Flood Study Overview– Muskegon County

- ▶ Coastal detailed (Zone AE/VE/AO/AH) study – 25.5 open coast shoreline miles
- ▶ Tie-Ins to approximate (Zone A) and detailed (Zone AE) study – 16 Riverine Streams
- ▶ Continuation of Spring Lake floodplain across Ottawa-Muskegon county boundary
- ▶ Adjustment of Black Lake BFE to achieve agreement with Ottawa County



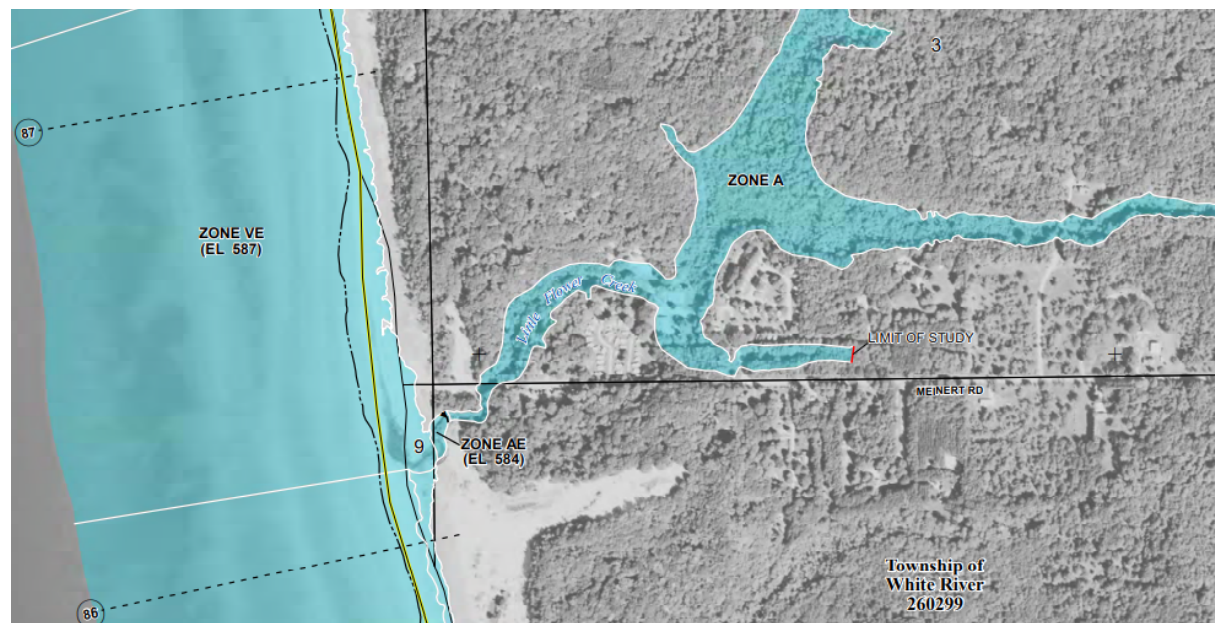
Scope of Work: Riverine-Coastal SFHA Integration

- **Approximate Zone A**

- Flower Creek
- Little Flower Creek
- Pierson Drain/Sadony Bayou
- Koon Creek
- Mill Pond Creek
- Duck Creek
- Todd Creek
- Bear Creek
- Muskegon River
- Sanford Bayou/Four Mile Creek
- Ryerson Creek
- Little Black Creek

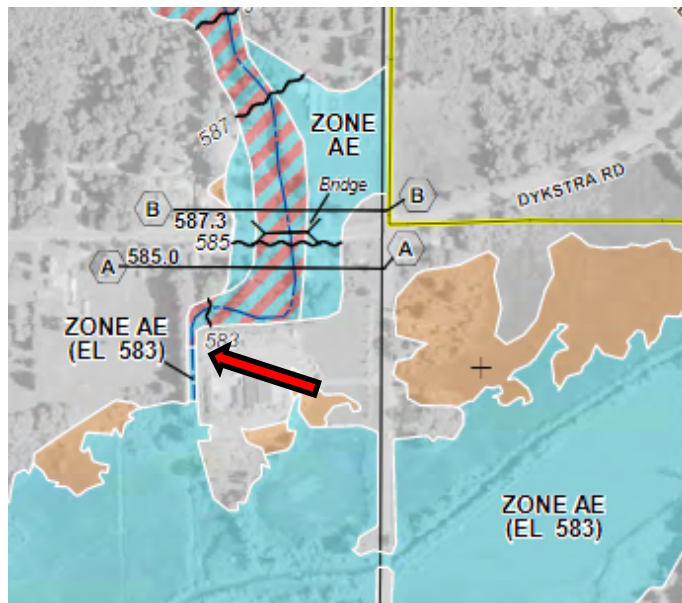
- **Zone AE**

- Buttermilk Creek
- Bear Lake Tributary
- Green Creek
- Little Black Creek

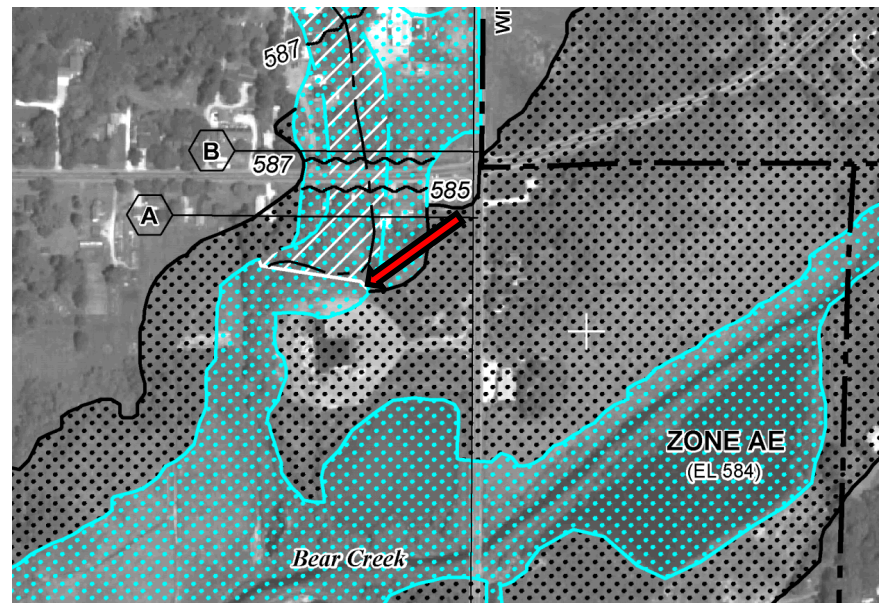


Scope of Work: Integrating Riverine and Coastal Data

Updated Tie-In to Bear Lake Trib Zone AE



Effective Tie-In to Zone AE



➔ Limits of coastal flood effects from Lake Michigan are shown on the FIRM (white line)

Summary of Letters of Map Change (LOMCs) for Muskegon County

Community: FRUITLAND, TOWNSHIP OF

Community No: 260265

2A. LOMCs on Revised Panels

LOMC	Case No.	Date Issued	Project Identifier	Original Panel	Current Panel
LOMA	95-05-1414A	07/13/1995	4044 BLUFF ROAD	260265 B	26121C0038E
LOMA	95-05-1434A	05/06/1996	NEW COMFORT SEC.5 LOT 10 & WEST 30 FT. OF LOT 11, BLOCK 3	260265 B	26121C0038E
LOMA	95-05-2890A	07/02/1996	LOTS 20 & 21 - BIRCH BROOK	260265 B	26121C0107E
LOMA	95-05-3152A	09/20/1996	E 1/2 OF LOT 12 AND ALL OF LOT 13, BLOCK 4 - NEW POINT COMFORT	2602659999A	26121C0038E
LOMA	95-05-3550A	09/20/1996	PARCEL A, PIECE OF LOT 1, SECTION 5	2602659999A	26121C0038E
LOMA	95-05-932A	01/14/1998	GRANDVIEW PARK, SECTION 5 - LOTS 2 & 3 - 4822 BLUFF ROAD	2602659999A	26121C0038E
LOMA	95-05-896A	01/21/1998	BELLEVIEW RESORT - LOT 3 - 5912 S. SHORE DRIVE	2602659999A	26121C0107E
LOMA	95-05-958A	02/11/1998	NEW POINT COMFORT - LOT 6 & WEST HALF OF LOT 7, BLOCK 3 - 4854 BLUFF ROAD	260265 B	26121C0038E
LOMA	95-05-6906A	10/30/1998	GRAND VIEW PARK, LOTS 35-37 - 4764 SOUTH SHORE DRIVE	260265 B	26121C0038E
LOMA	95-05-1658A	01/13/1999	SECTION 5 - PART OF GOVT. LOT 3 - 5048 SOUTH SHORE DRIVE	260265 B	26121C0038E
LOMA	95-05-2078A	03/03/1999	SECTION 19 - 3851 NESTROM ROAD	260265 B	26121C0108E
LOMA	95-05-3564A	04/28/1999	4824 S. SHORE DR.	260265 B	26121C0038E
LOMA	00-05-4342A	08/18/2000	LOT 3 & 20 OF BLOCK 3, NEW POINT COMFORT SUBDIVISION; 4878 BLUFF ROAD	260265B02	26121C0038E
LOMA	03-05-3719A	06/18/2003	SEC5, T11N, R17W; 5136 SOUTH SHORE DRIVE	260265_02B	26121C0038E
LOMA	05-05-0124A	11/10/2004	NEW POINT COMFORT SUBDIV - 4908 BLUFF ROAD	260265B	26121C0038E
LOMA	05-05-4620A	11/03/2005	6196 SOUTHSORE DRIVE - PORTION OF SECTION 7, T11N, R17W	2602650004B	26121C0107E

All LOMCs were addressed in the preliminary Summary of Map Actions (SOMA) and placed into one of four categories:

1. Incorporated
2. Not Incorporated (validated)
 - LOMCs on Revised Panels
 - LOMCs on Unrevised Panels
3. Superseded
4. To be redetermined

Be sure to review the preliminary SOMA for completeness

If you notice a LOMC is missing from the list, submit the omission with your comments



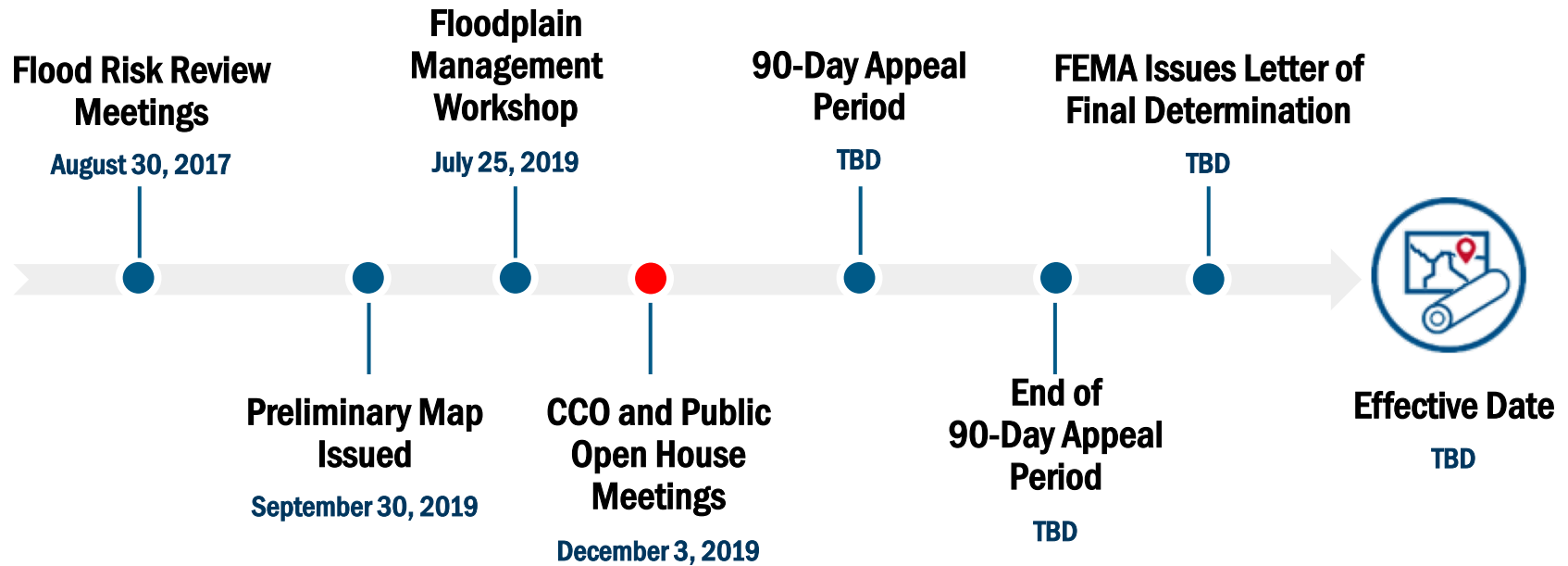
Next Steps in the Map Adoption Process



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Timeline for Muskegon County Coastal Update



4-Step Pre-Adoption Process



**Inform the
Community**



**Gather Comments
and Additional Data**



Appeal Process



LFD Issued

#1: Inform the Community – Today's Open House

- ▶ **Viewing via paper maps or map viewer**
- ▶ **Opportunity to share program information with property owners**
- ▶ **Comment sheets collected**
- ▶ **Attendees notified as process moves forward**



#2: Gather Community Comments

- ▶ **Homeowners may choose to submit comments through community officials**
- ▶ **FEMA requests that community officials forward the initial round of comments to FEMA no later than January 4, 2020**

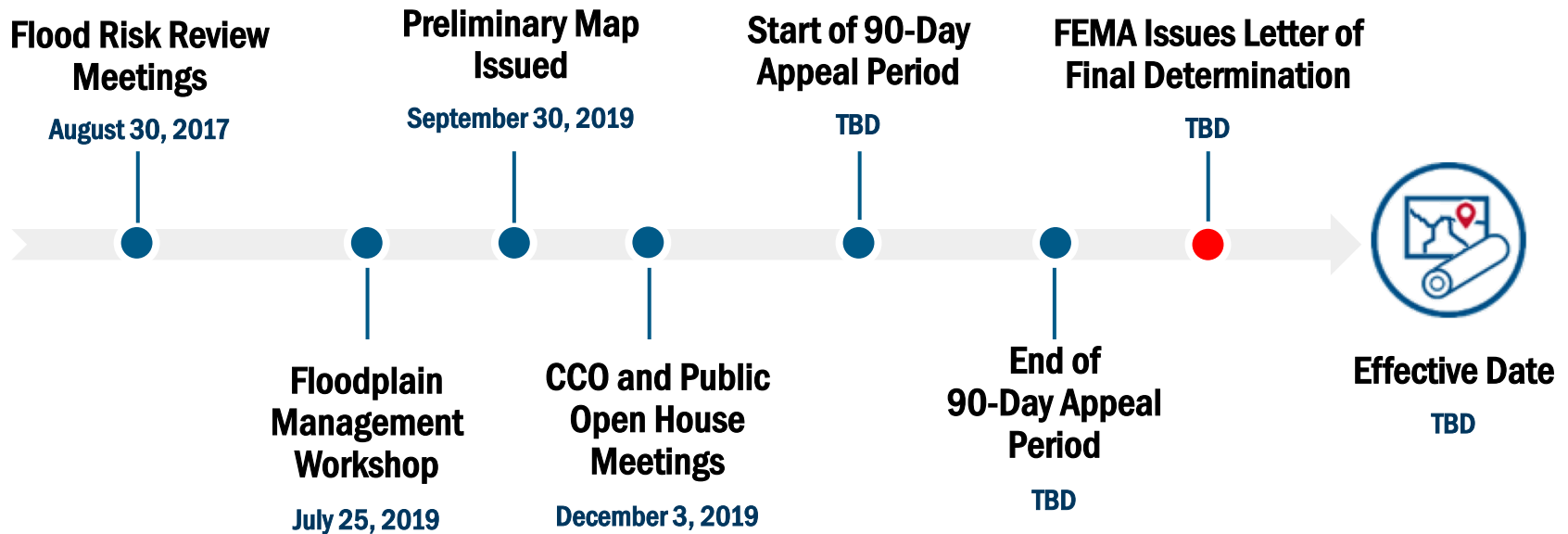


#3: Appeal Process

- ▶ **Appeal Period is 90 days**
- ▶ **Publication of notice in Federal Register**
 - Notification to communities by letter, including local newspaper publications
- ▶ **All are welcome to submit information**
 - FEMA recommends directing comments through local community officials to provide a consolidated picture
- ▶ **Appeals should be submitted to STARR II or FEMA Region V**
 - Additional instructions will be provided to community CEOs
- ▶ **FEMA will evaluate all appeals and comments for resolution after the appeal period**



#4: Issuing the Letter of Final Determination



Understanding Floodplain Management Ordinance Requirements



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Participation in the National Flood Insurance Program

- ▶ **The NFIP is a voluntary program.**
- ▶ **Participation requires that communities adopt and enforce floodplain management regulations.**
- ▶ **The floodplain management regulations need to be based on the risk data provided by FEMA (the FIRM and FIS report).**
- ▶ **Participation in the NFIP makes Federal flood insurance available to insure buildings and personal property inside buildings within your communities.**
- ▶ **Federally regulated lenders require flood insurance coverage for buildings in the SFHA that secure loans; insurance is also required as a condition of receiving Federal financial assistance to purchase, repair, improve, or rehabilitate buildings within the SFHA.**
- ▶ **Many forms of disaster assistance are either a type of Federal loan or other Federal financial assistance.**



Ordinance Adoption During Map Updates

Timeline prior to effective date

- 6 months prior: FEMA 6-month LFD mailing
- 4 months prior: draft ordinance (suggested)
- 3 months prior: FEMA 90-day reminder letter
- 1 month prior: FEMA 30-day reminder letter

Community must update its ordinance to reference the effective date of the FIRM and FIS report before the end of the 6-month period (or community may be suspended from NFIP).



Where to Find Minimum NFIP Requirements

- ▶ NFIP Minimum Floodplain Management Standards are found in Part 60 of Title 44, Code of Federal Regulations
- ▶ Coastal-specific standards are found in Part 60.3(e)
- ▶ In Michigan, pursuant to the Stille-DeRosset-Hale Single State Construction Code Act of 1972, the Michigan State Building Code applies throughout the state.
- ▶ With the community ordinance referencing the applicable FIRM and FIS, the Michigan Building Code meets NFIP minimum floodplain standards.
 - 2015 I-Codes checklist: <https://www.fema.gov/media-library/assets/documents/100537>
 - 2018 I-Codes checklist: <https://www.fema.gov/media-library/assets/documents/156934>

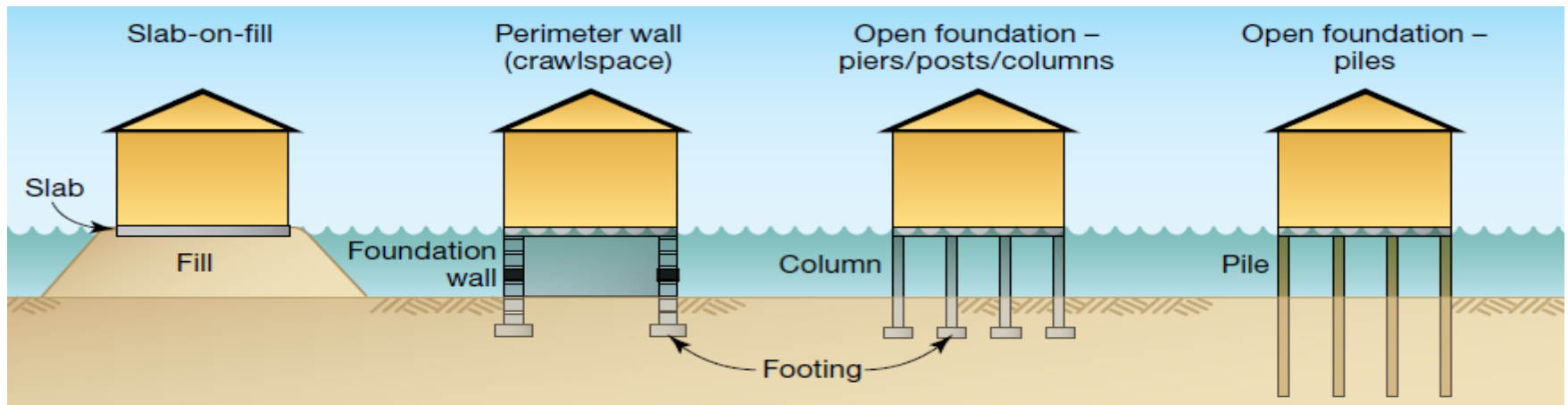
Differences in Development Requirements

A zones

- Fill is allowed outside the floodway, or if it can be shown not to cause a rise in the BFE.
- Fully enclosed foundation walls (flood openings required) are allowed.
- The lowest floor must be elevated to or above the BFE.
- An as-built lowest floor elevation is required to be on file with the permit records.

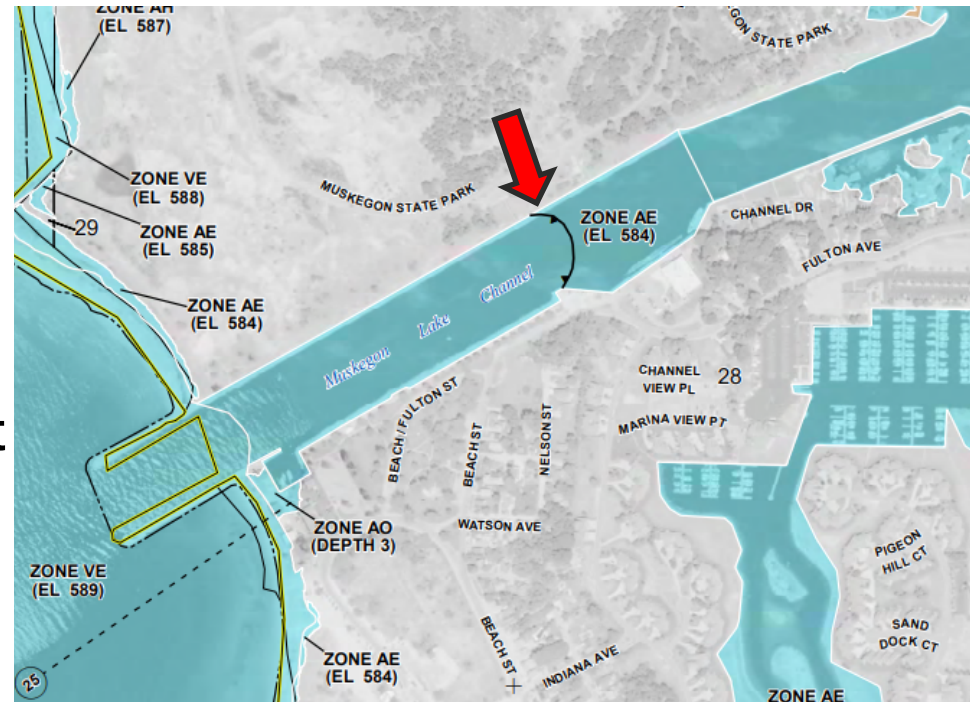
VE zones (and AE zones on the water side of a LiMWA)

- Fill is not allowed for structural support of buildings.
- Only open foundations on columns or piles, free of obstructions, or breakaway walls are allowed below the BFE.
- Bottom of lowest horizontal structural member must be at or above BFE, with an as-built elevation on file.
- A Professional Engineer or Architect must certify the design of the structure, including wind loading, and that must be on file with the permit records.



LiMWA (Limit of Moderate Wave Action) on the Map

- ▶ Requirement to use 60.3(e) coastal high-hazard standards applies under the Michigan State Building Code through its reference to ASCE 24-14
- ▶ Community Rating System (CRS) benefit for communities requiring VE zone construction standards in areas defined by the LiMWA or areas subject to waves greater than 1.5 feet
- ▶ Currently no distinction for insurance purposes between the AE zone and the “coastal” AE zone on the water side of the LiMWA



Understanding Flood Insurance



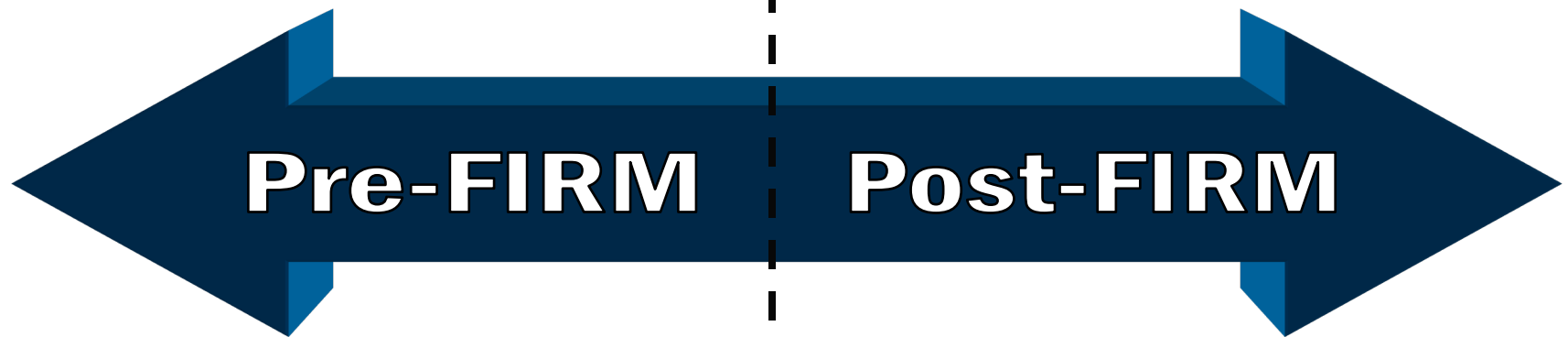
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Flood Insurance Basic Concepts

- Structures built on or before **December 31, 1974**, or before the effective date of the initial FIRM of the community, whichever is later

- Structures built after **December 31, 1974**, OR on or after the effective date of the initial FIRM of the community, whichever is later



Flood Insurance Basic Concepts

▶ Pre-FIRM (subsidized) rates

- For structures built before the first maps of the community
- Do not reflect the structure's true risk, negatively or positively
- Based on building type and occupancy
- Subsidies are being phased out, with some categories increasing toward full risk more quickly

▶ Post-FIRM (actuarial) rates

- Use the structure's elevation information to determine risk
- Based on the difference between the BFE and the elevation of the lowest floor
- Required for Post-FIRM structures, and optional for Pre-FIRM structures with an elevation certificate

Effects of New Flood Zones on Flood Insurance

▶ The new FIRM may:

- Map a property into the SFHA for the first time
 - **Lender** may require the owner to get an insurance policy
- Remove a property from the SFHA
 - **Lender** may drop the insurance requirement
- Change the flood zone affecting the property
 - From an A zone to a VE zone (or from Zone AE to Zone AO, etc.)
 - Rating will not change unless the policy is allowed to lapse or the building is substantially improved
 - If the new zone results in a less costly premium, the policy can be endorsed to revise the rate to the new zone with a prorated refund for the difference for the remainder of the policy year. Insured needs to ask the **AGENT** to do this!

Insurance Rating and Product Possibilities

▶ Newly Mapped (Zone A, AE, AO, and AH)

- Pricing starts at Preferred Risk Rates - bundled standard Preferred Risk Policy for the first year
- Multiplier added after the first year
- Must be newly mapped into an SFHA from zone on the previous FIRM
- Must have two or fewer losses paid by NFIP or disaster assistance

▶ Grandfathering

- Keeps lower rate zone and/or BFE

▶ Two Ways

- Continuous coverage (pre- and post-FIRM)
 - Coverage obtained prior and through a map change
- Built in compliance
 - **Post-FIRM ONLY**
 - Built in compliance with the map at the time
 - Not substantially improved later

Risk Rating Redesign

To stay up-to-date with Risk Rating 2.0, and for the latest details, please visit www.fema.gov/nfiptransformation.



Insurance Rating and Product Possibilities

▶ Newly Mapped

▶ Exceptions

- Can't be community's first FIRM
- Multi-unit buildings insured under the RCBAP
- Policy can't be first purchased more than 12 months after the effective date of the FIRM
- Building can't be altered or substantially improved

▶ Grandfathering (Standard)

▶ Exceptions

- Can't have a lapse in coverage
- Building can't be altered or substantially improved

Resources for Insurance

▶ Floodsmart.gov

▶ FEMA.gov

Search Close X

GO

- Grandfathering
- Newly Mapped PRP
- Flood Insurance Reform

▶ Flood Insurance Manual

- <https://www.fema.gov/flood-insurance-manual>
- General Rules
- Newly Mapped
- Rating

▶ Flood Insurance Rate Maps

- www.msc.fema.gov

NFIP Floodplain Management and Insurance

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Hazard Mitigation Planning



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What is Hazard Mitigation?

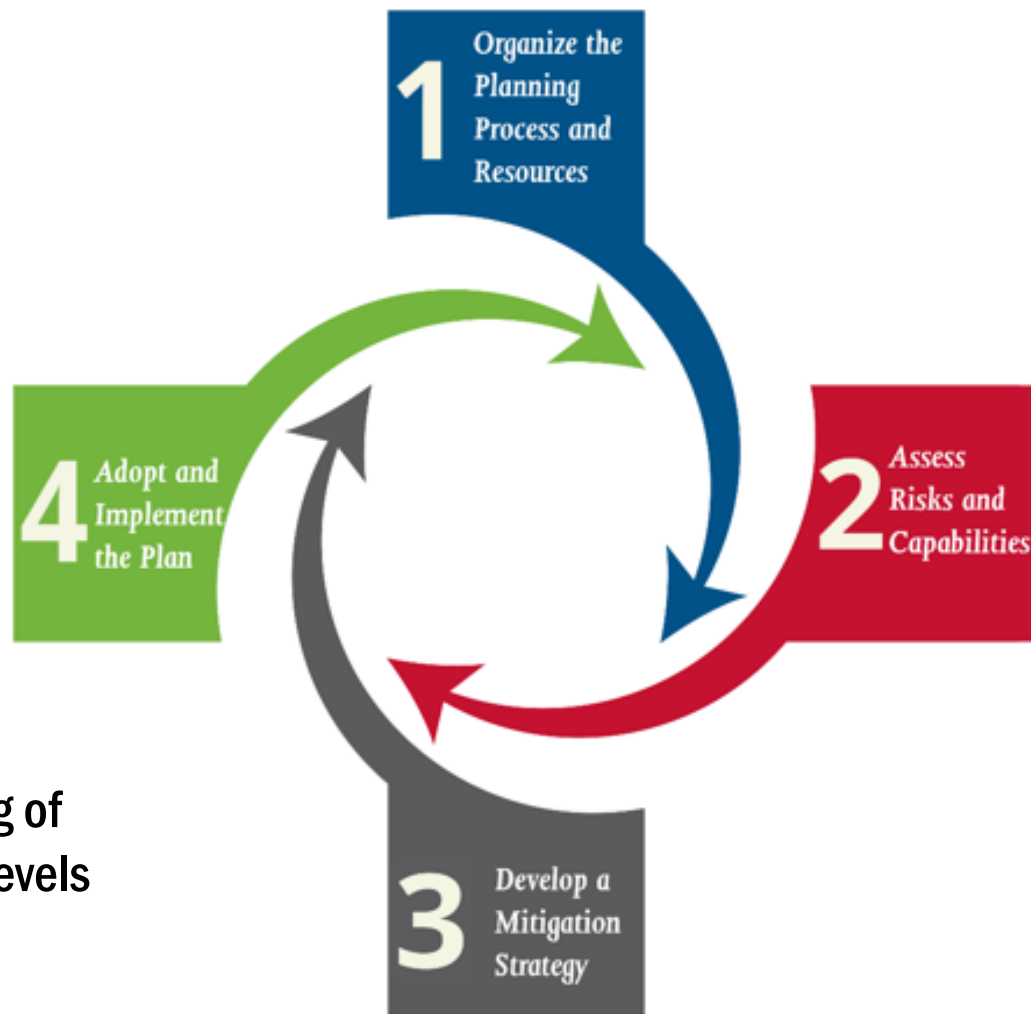
Any sustained action taken to reduce long-term risk to people and property from hazards and their effects.

Mitigation actions include:

- ▶ Removing existing structures from floodprone areas
- ▶ Elevating or floodproofing structures
- ▶ Stormwater management
- ▶ Floodwater storage and diversion
- ▶ Flood insurance
- ▶ Building, zoning, and floodplain management codes
- ▶ Wetland and riparian area protection
- ▶ Water/Sanitary sewer system protective measures

Benefits of Hazard Mitigation Planning

- ▶ Increases public awareness and understanding of risk areas and vulnerabilities by engaging the whole community
- ▶ Provides eligibility for certain FEMA programs
- ▶ Builds partnerships with diverse stakeholders
- ▶ Identifies potential risk reduction measures
- ▶ Improves communication and sharing of risk data and related products in all levels of government and the public



Federal Planning Regulations

The Disaster Mitigation Act of 2000

- ▶ Establishes eligibility for FEMA Hazard Mitigation Assistance (HMA) programs
 - Plan approval is a precondition for receiving HMA grants
- ▶ Requires local governments to submit a plan to their State and FEMA for review

Title 44 Code of Federal Regulations (CFR) 201.6

- ▶ Publishes requirements for approval of local mitigation plans

Hazard Mitigation Assistance



Contact your State Hazard Mitigation Officer (SHMO)
to learn more about the application process.

EMHSD Mitigation Contacts and More Information

Web: https://www.michigan.gov/msp/0,4643,7-123-72297_60152---,00.html

Phone: (517) 284-3745

Matt Schnepf
State Hazard Mitigation Officer
(517) 284-3950
schnepfm1@Michigan.gov

Mike Sobocinski
State Hazard Mitigation Planner
(517) 284-3947
SobocinskiM@Michigan.gov

Want More Information?

Hazard Mitigation Planning: <https://www.fema.gov/hazard-mitigation-planning>

Hazard Mitigation Assistance (HMA): <https://www.fema.gov/hazard-mitigation-assistance>

Mitigation Planning Resources: <https://www.fema.gov/hazard-mitigation-planning-resources>



FEMA Engineering Library Data Requests

- ▶ Requests must be sent in writing to:

FEMA Engineering Library
 3601 Eisenhower Ave., Ste. 500
 Alexandria, VA 22304-6426

Or Fax: (703) 202-4090

- ▶ Request must include:

FIS Data Request Form
 Applicable Fees
 Payment Information Form

- ▶ Once the research has been completed, an information specialist will contact you to discuss the path forward.



Federal Emergency Management Agency
 Washington, D.C. 20472

Flood Insurance Study (FIS) Data Requests

The Federal Emergency Management Agency (FEMA) has identified seven categories into which requests for Flood Insurance Study (FIS) backup (i.e., technical and administrative support) are separated. These categories and their associated fees are below:

Requests for Flood Insurance Backup Data	Fee
1. Portable Document Format (PDF) or Diskettes of hydrologic and hydraulic backup data for current or historical FISs	\$300, plus a \$93 per-case surcharge fee to recover the cost of library maintenance and archiving. For larger requests that require more than 4 hours of research, additional hours will be charged at \$40 per hour.
2. PDF or Mylar copies of topographic mapping developed during FIS process	\$300, plus a \$93 per-case surcharge fee to recover the cost of library maintenance and archiving. For larger requests that require more than 4 hours of research, additional hours will be charged at \$40 per hour.
3. PDF of survey notes developed during FIS process	\$300, plus a \$93 per-case surcharge fee to recover the cost of library maintenance and archiving. For larger requests that require more than 4 hours of research, additional hours will be charged at \$40 per hour.
4. PDF of individual Letters of Map Change (LOMCs)	\$40 for first letter; \$10 for each additional letter in the same request. Requesters will be notified about availability of the data and the fees associated with the requested data.
5. PDF of preliminary map panels	\$35 for first panel; \$2 for each additional panel in the same request. Requesters will be notified about availability of the data and the fees associated with the requested data.
6. DVDs of Digital Line Graph files, FIRM files or Digital LOMR attachment files	\$150 per county or Digital LOMR attachment shape file. Requesters will be notified about availability of the data and the fees associated with the requested data.
7. Computer diskettes and user manuals for FEMA computer programs	\$25 per copy. Requesters will be notified about availability of the data and the fees associated with the requested data.

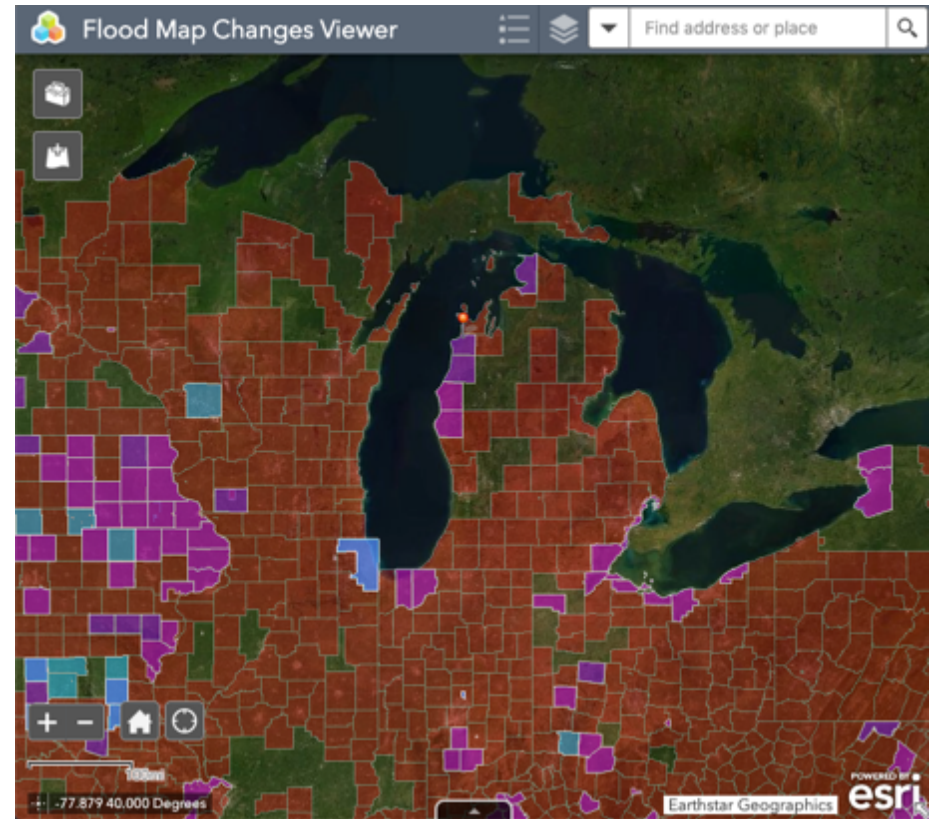
As shown in the table above, for Categories 1-3, an initial fee of \$300 is required to initiate the request and required before the requested data will be provided. If the data requested are available and the request is not cancelled, the final fee is calculated as a sum of the standard per-product charge plus a per-case surcharge of \$93, to help recover library maintenance and archiving costs. The total costs of processing requests in Categories 1- 3 will vary based on the complexity of the research involved in retrieving the data and the volume and medium of the data to be reproduced and distributed. The initial flat fee will be applied against the total costs to process the request, and FEMA will invoice the requester for the balance plus the per-case surcharge before the data are provided. No data will be provided to a requester until all required fees have been paid.

For Categories 4- 7, there is no initial fee to initiate a request for data. Requesters will be notified about the availability of, and the fees associated with, the requested data.



Mapping Resources

- FEMA Flood Map Changes Viewer
www.msc.fema.gov/fmcv
- Preliminary Flood Hazard Data
www.fema.gov/view-your-communitys-preliminary-flood-hazard-data
- Steady State Program
www.msc.fema.gov



Questions and Additional Information

Visit:

www.greatlakescoast.org

www.fema.gov/preliminaryfloodhazarddata

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Catrina Covino

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Catrina.Covino@fema.dhs.gov



Question & Answer Session



FEMA

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**We Hope You Will Stay for
the Open House**



FEMA

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Increasing Resilience Together