



# **BROWN COUNTY, WI Consultation Coordination Officer (CCO) Meeting**

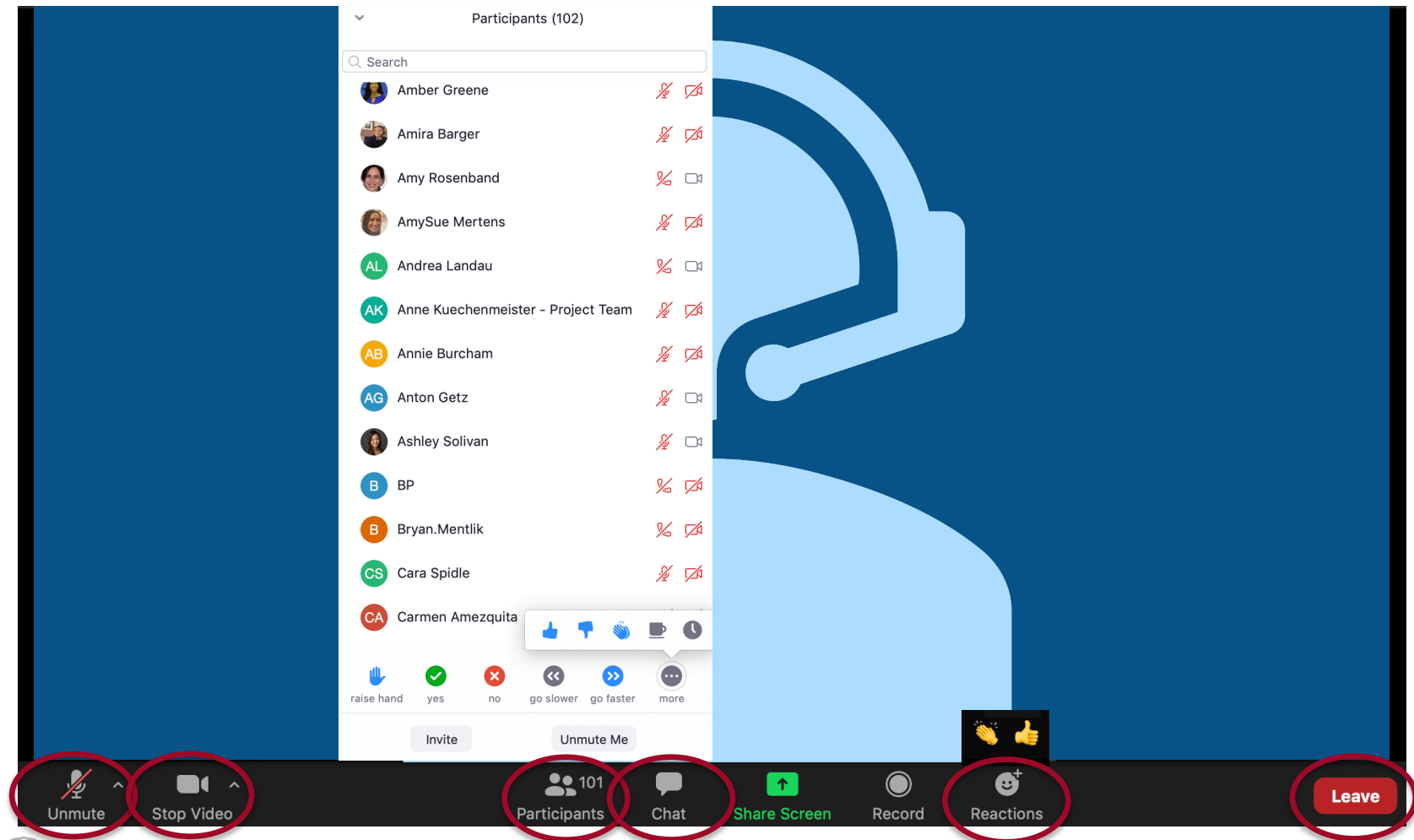
**January 14, 2021**



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# Features of the Zoom Platform



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# **TODAY'S AGENDA**

Reviewing the Updated Flood Risk Data for Your County

Next Steps in the Map Adoption Process

Understanding Floodplain Management Ordinance Requirements

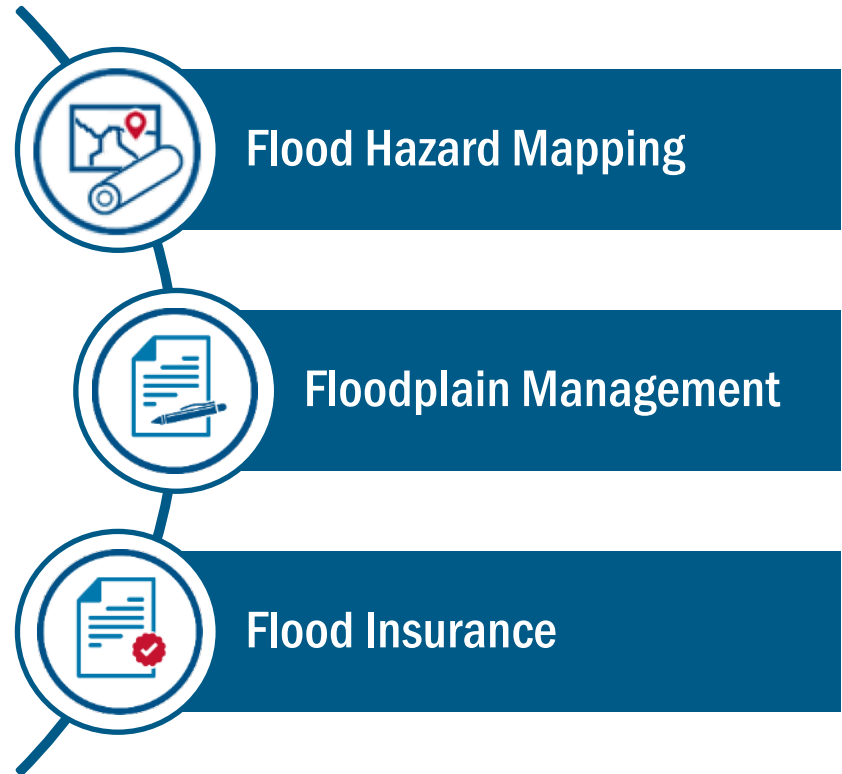
Understanding Flood Insurance

Hazard Mitigation Planning



# The National Flood Insurance Program

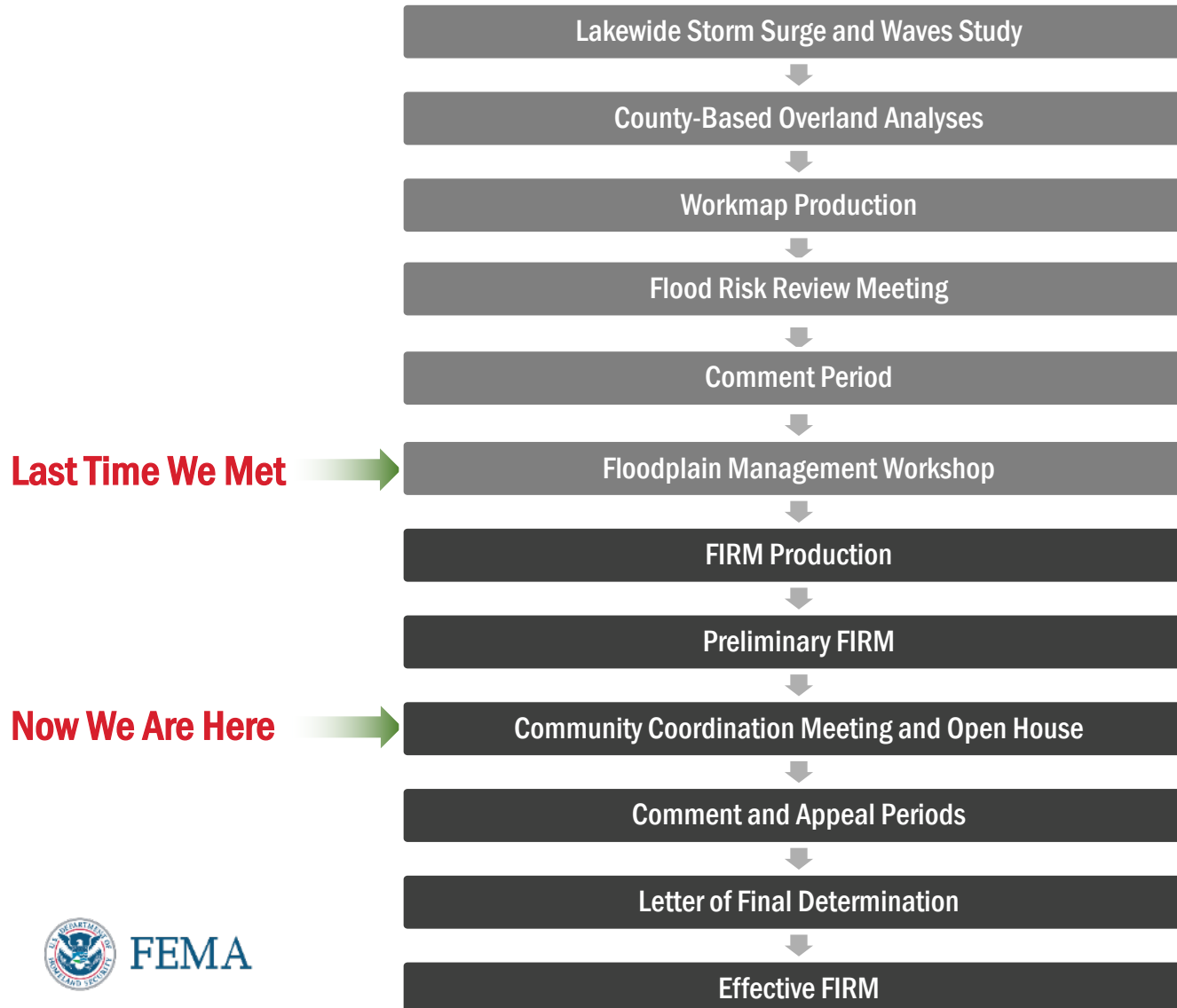
The National Flood Insurance Program, or NFIP, balances three related areas that must support each other.



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# The Status of this Study



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# **Reviewing the Updated Flood Risk Data for your County**



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# 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.**

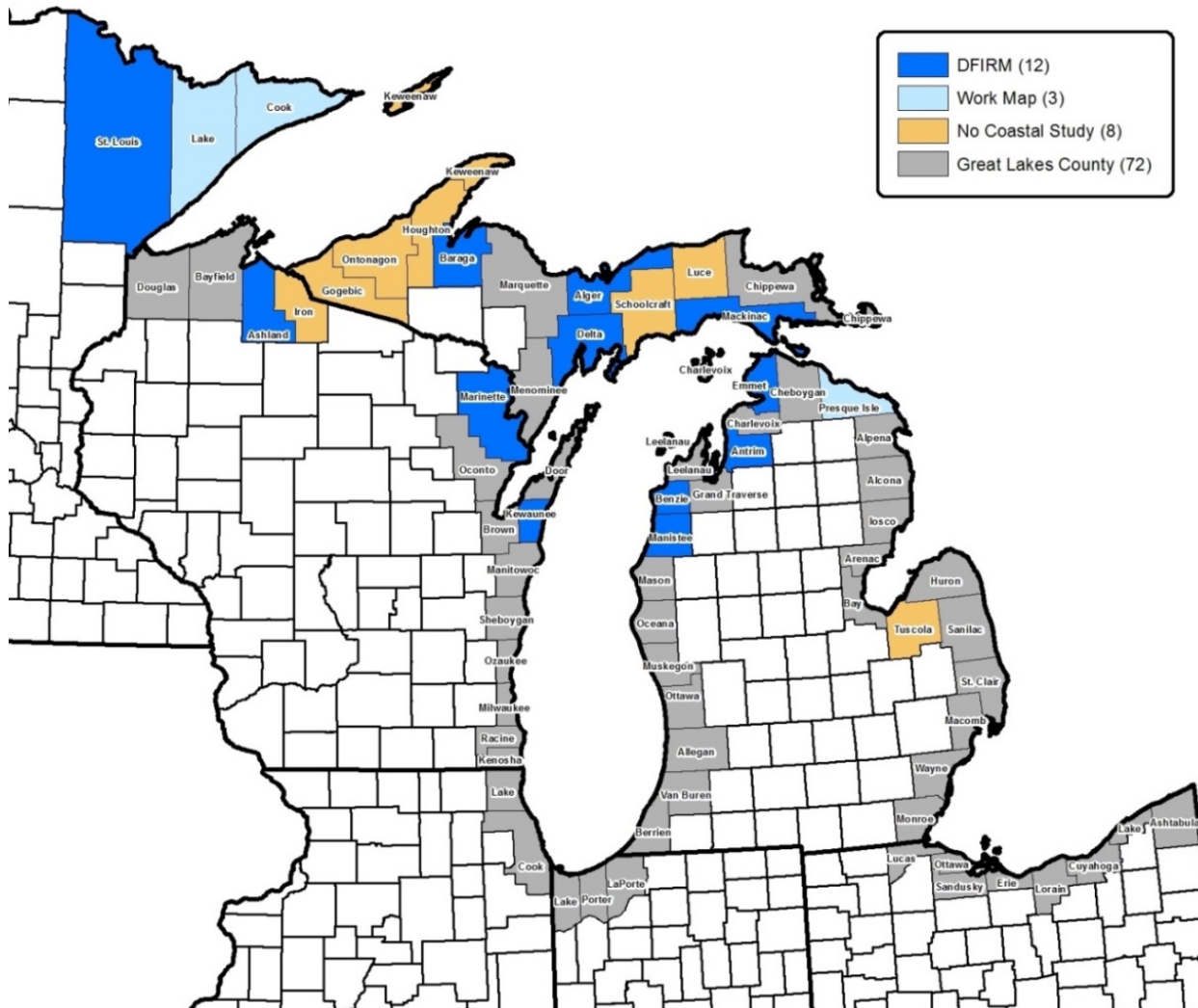
**Many factors contribute to flood map revisions:**

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





# Program Goals and Status



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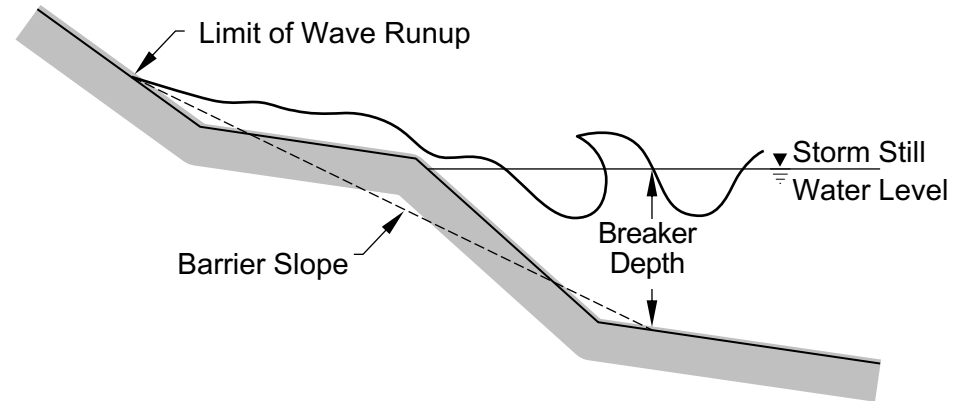
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# The Great Lakes Coastal Flood Study Approach

## 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



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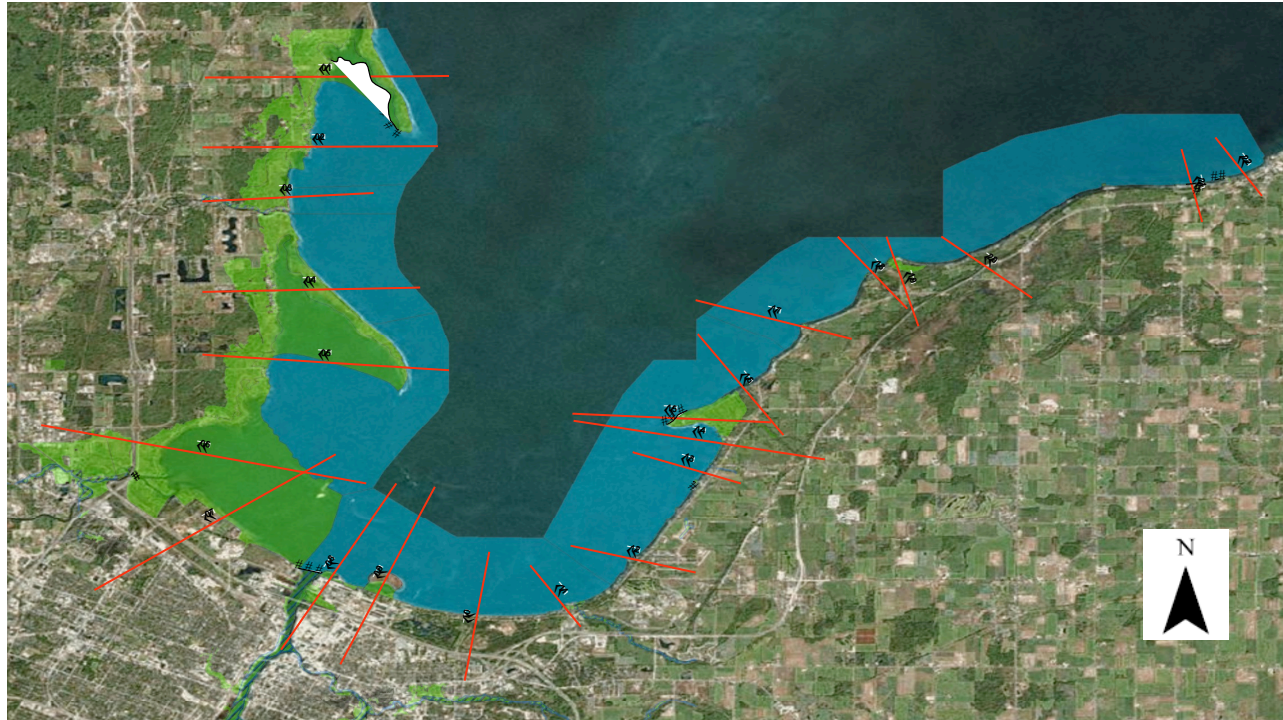
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# The Great Lakes Coastal Flood Study in Your County

## Coastal Flood Hazard Analysis:

- 41 miles of coastline
- 35 FIRM panels (2 NP)
- 8 communities
- 22 coastal transects
- Transects placed at representative shoreline reaches based on:
  - Topography
  - Exposure
  - Shoreline material
  - Upland development
- Integration of riverine - coastal Special Flood Hazard Areas
- Topography
  - USACE JALBTCX LiDAR (2013): 1-meter DEM
  - Wisconsin Department of Natural Resources (2010): 1.5-meter DEM

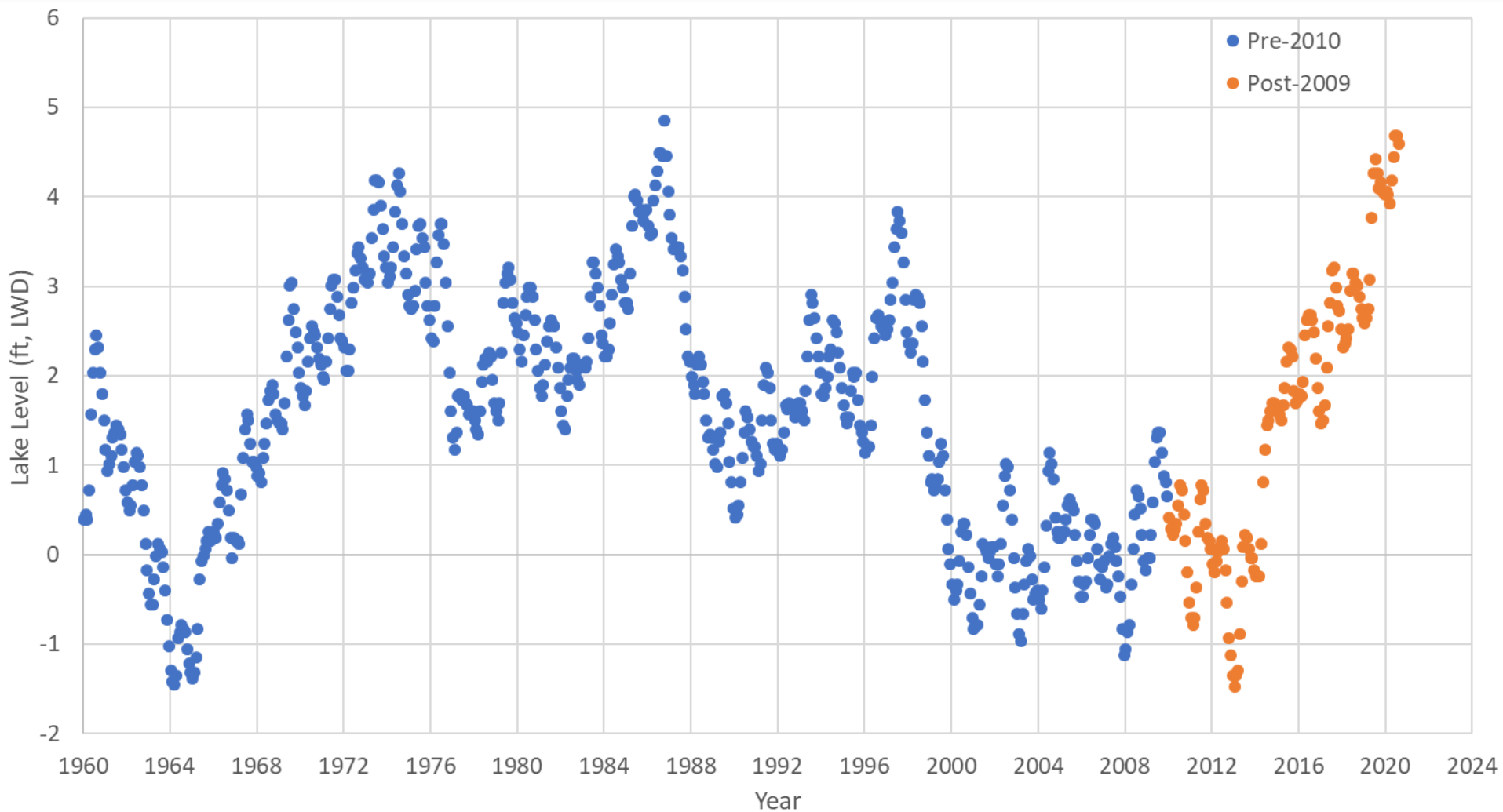


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# Lake Michigan Water Levels

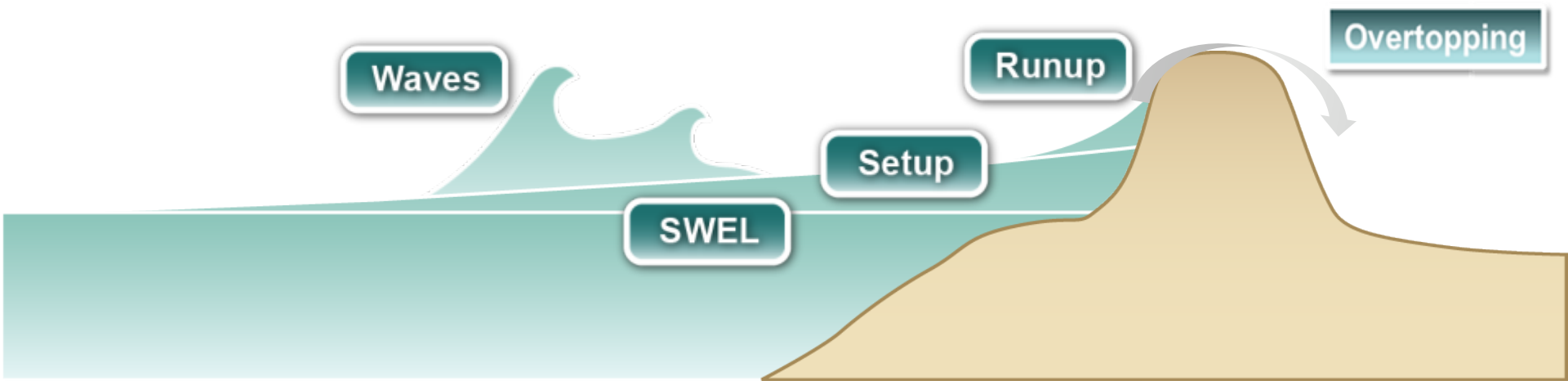


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# Measuring Coastal Base Flood Elevations



**SWEL = Stillwater Elevation (storm surge level)**

**TWEL = Total Water Elevation (SWEL + wave effects)**



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# 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  $\geq 3$  feet
- Subdivided into elevation zones, and BFEs are assigned

## Zone AE

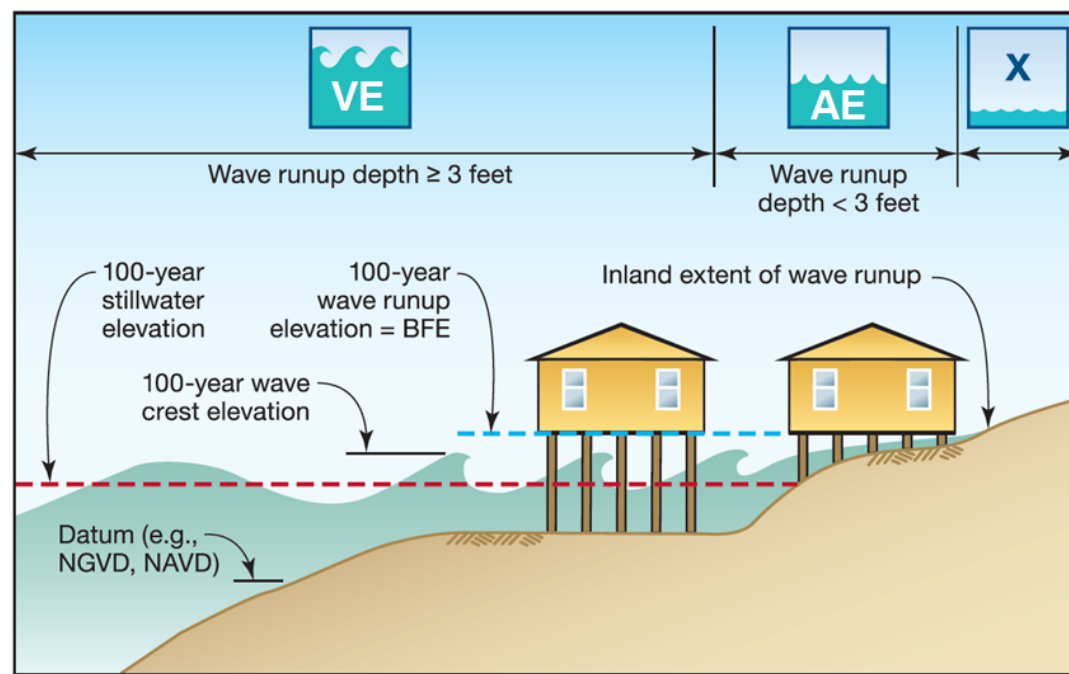
- Applied in areas subject to lower wave energy or inundation by the 1-percent-annual-chance flood
- Wave heights or wave runup  $< 3$  feet
- Subdivided into elevation zones, and BFEs are assigned

## Zone AO

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

## Zone AH

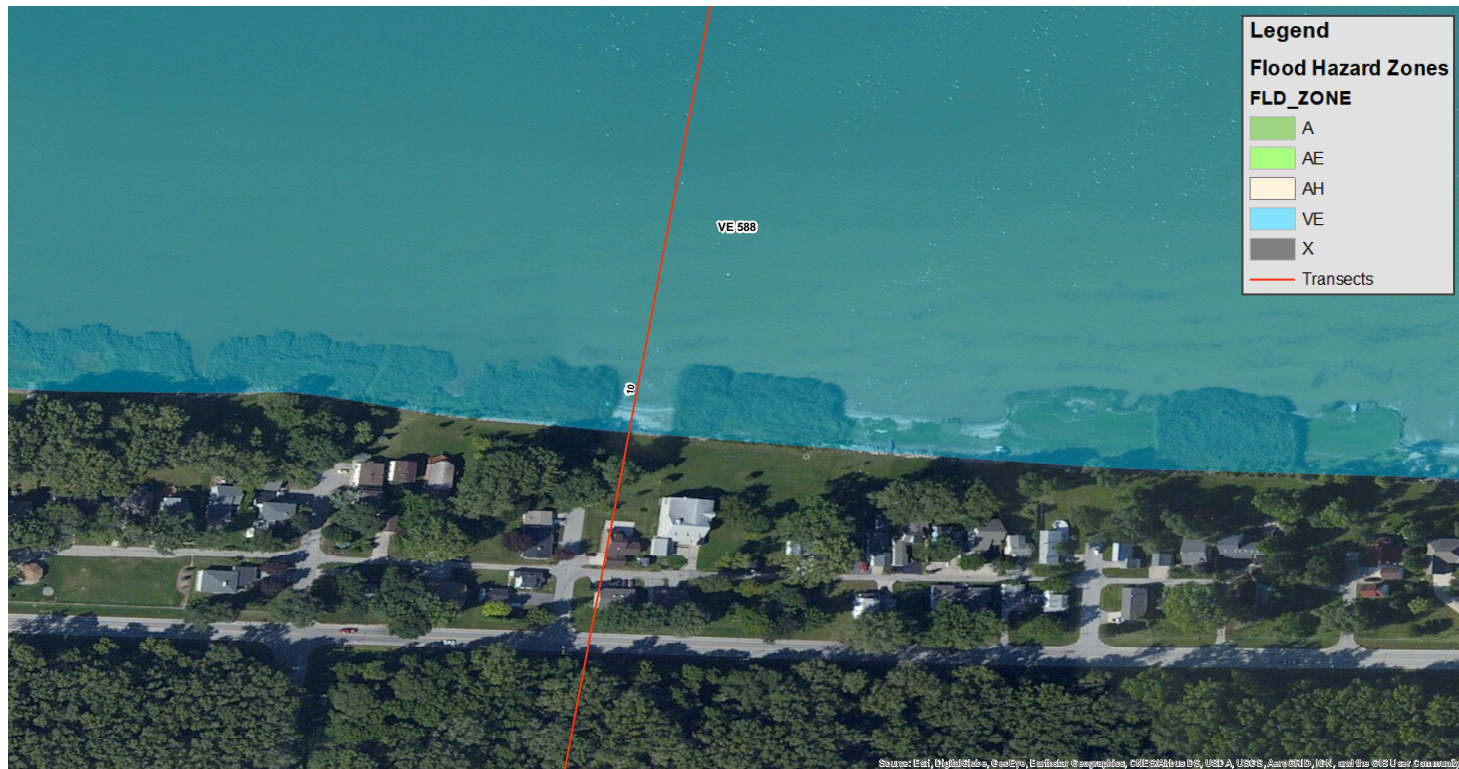
- Applied in areas of ponding
- Assigned a BFE





# Wave Runup Mapping

- Wave runup is very sensitive to shoreline characteristics, especially slope
- Single Base Flood Elevation (BFE)
- Zone breaks (aka Gutters) perpendicular to the shore divide the BFEs

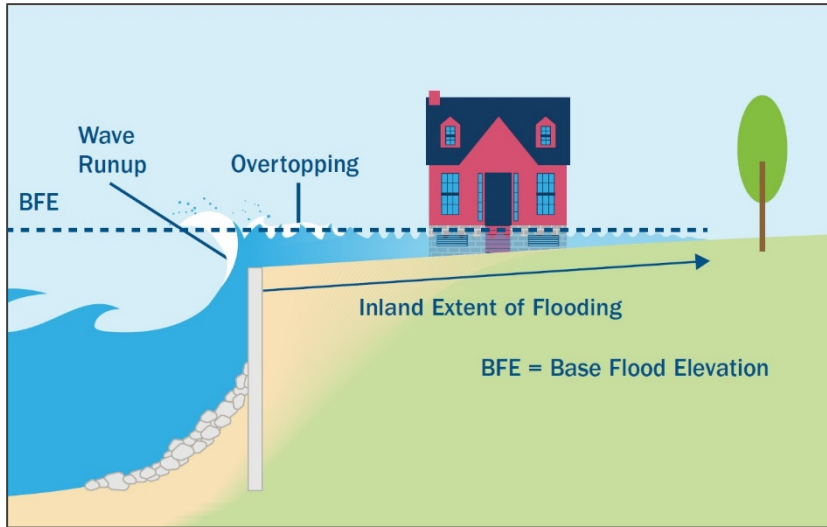


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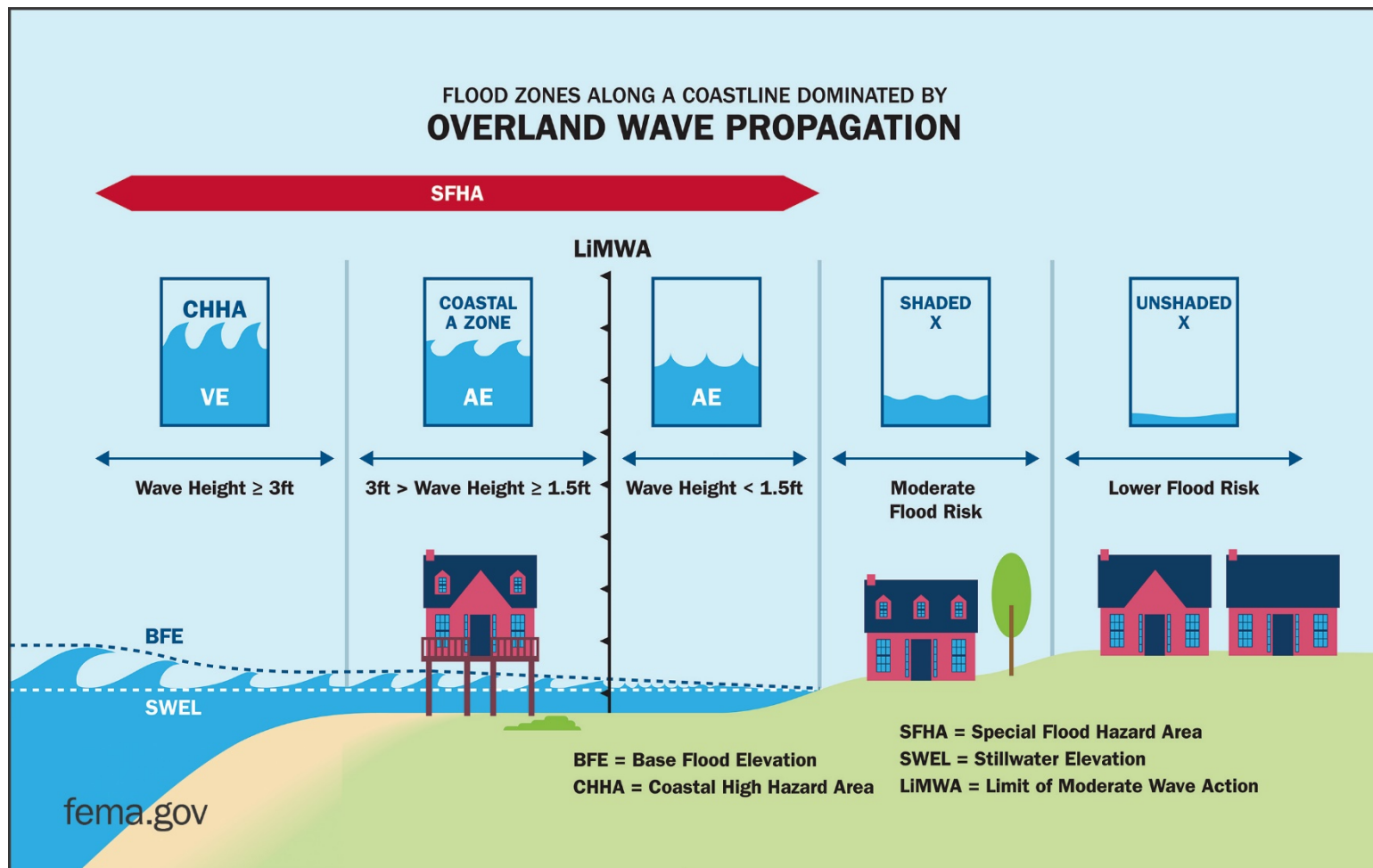
# Wave Overtopping



- 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 ponds
    - BFE established
- The overtopping rate determines VE splash zones and sheet flow depths



# Overland Wave Propagation Mapping



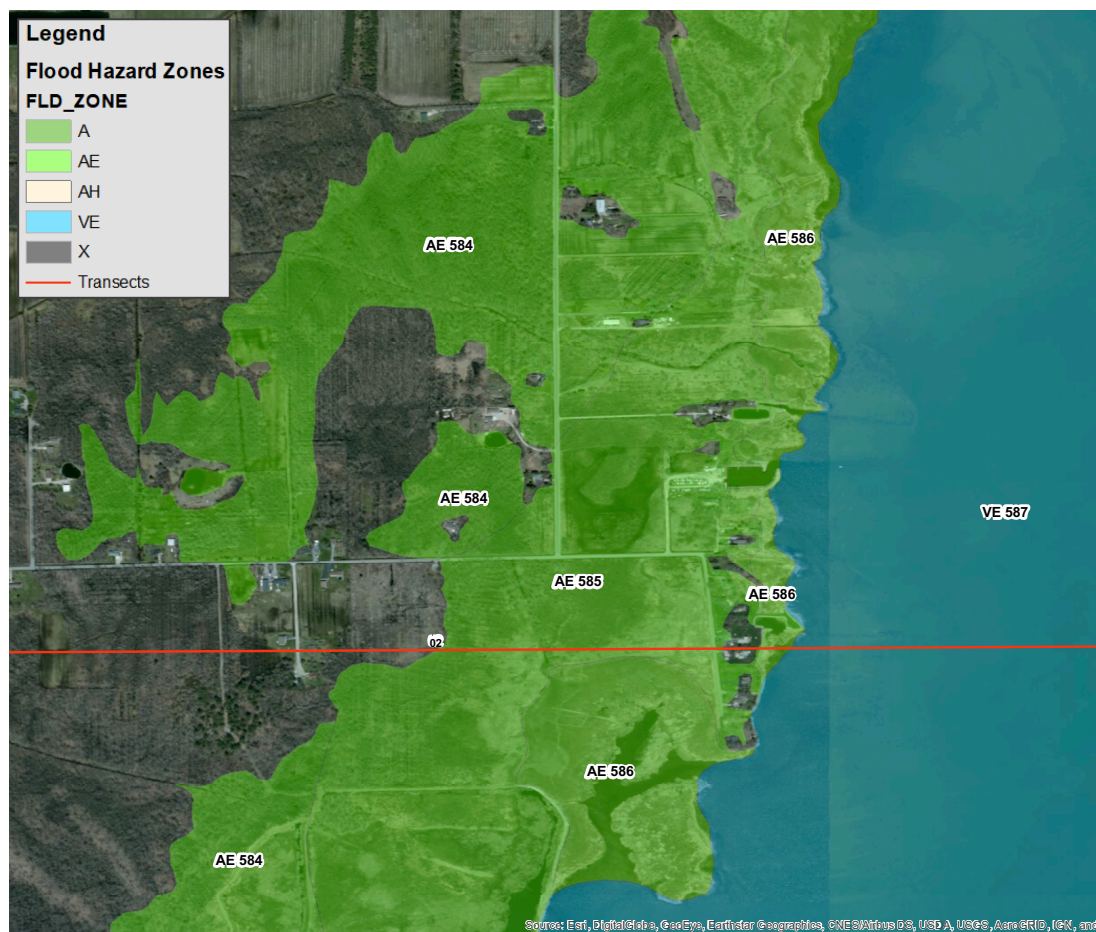
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# Overland Wave Propagation Mapping

- Tiered Base Flood Elevations reflect the overland wave decay or regeneration over inundated inland areas as waves propagate onshore over different terrain
- BFEs are defined by wave crest elevation
- Zone breaks (aka Gutters) are placed where BFEs change moving onshore and follow land use features or terrain elevations
- Landward extent of mapping defined by 1% SWEL

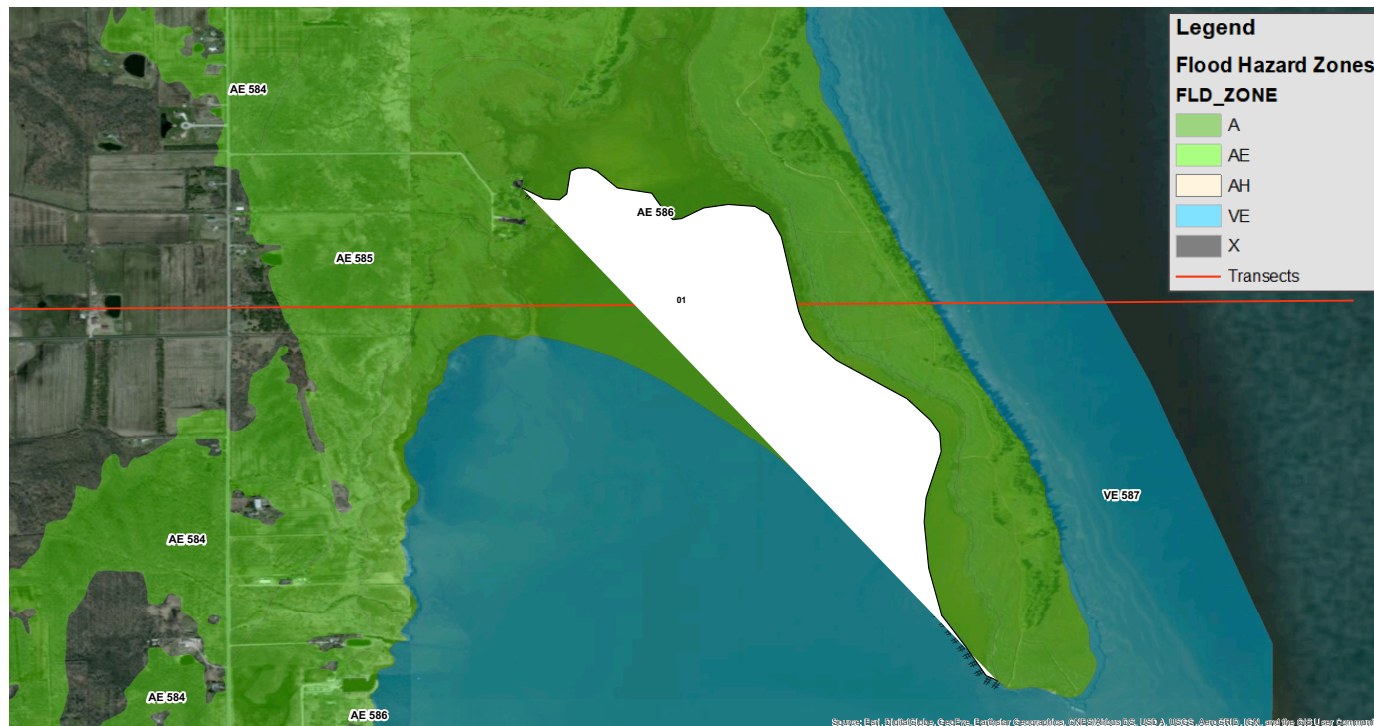




# Overland Wave Propagation Mapping - LiMWA

## Limit of Moderate Wave Action (LiMWA)

- Defines the inland limit of the area expected to experience 1.5-foot or greater breaking waves during a 1-percent-annual-chance event
- Area seaward of the LiMWA is defined as the “Coastal A” on the Great Lakes



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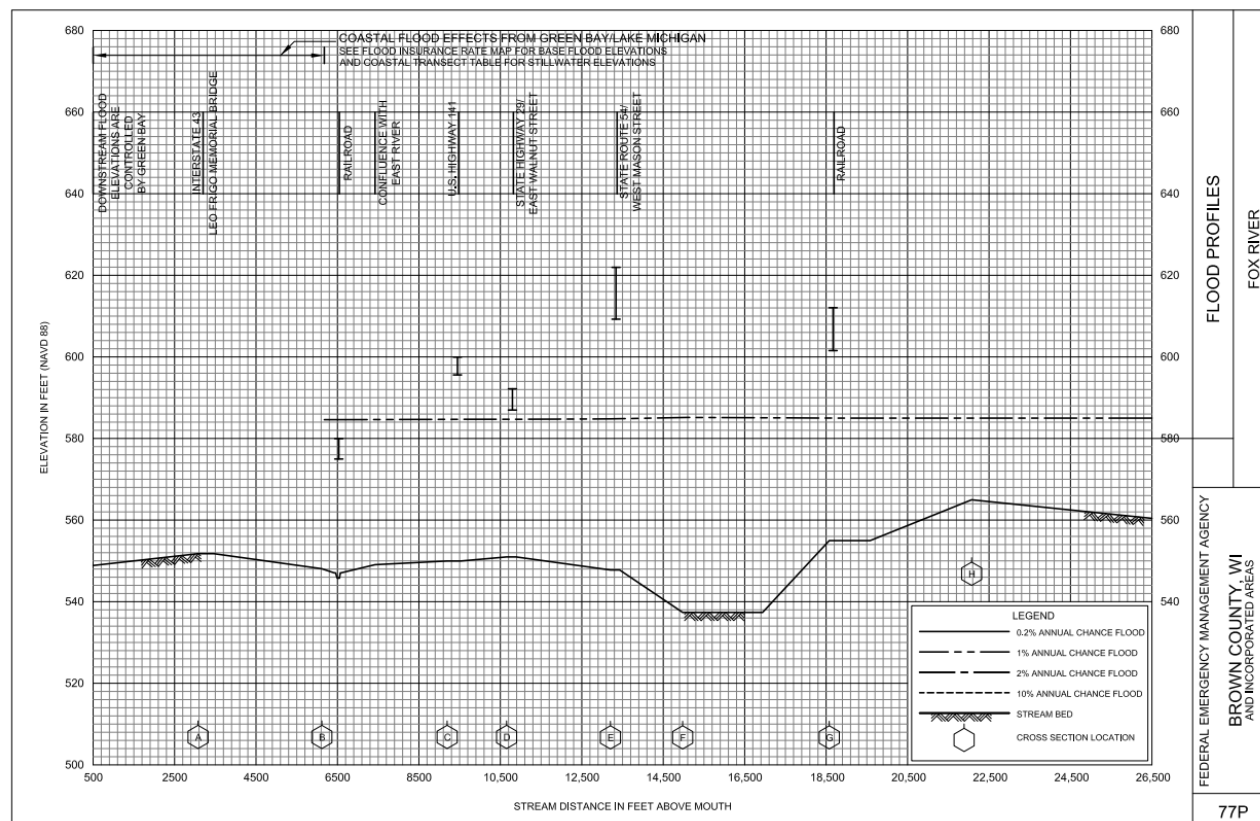
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# Riverine-Coastal SFHA Integration

## Riverine Confluences:

- Suamico River
- Duck Creek
- Fox River
- Mahon Creek
- Unnamed Tributary





# Riverine-Coastal SFHA Integration

## Confluence of Suamico River and Green Bay/Lake Michigan (Detailed studies with lettered cross sections and BFEs)

Effective Coastal Mapping  
at Suamico River

Coastal SWEL = 586,  
inundating a much larger  
area



Revised Coastal Mapping  
at Suamico River

Coastal SWEL = 584.2  
supersedes XS-A BFE





# Riverine-Coastal SFHA Integration

## Confluence of Fox River and Green Bay/Lake Michigan

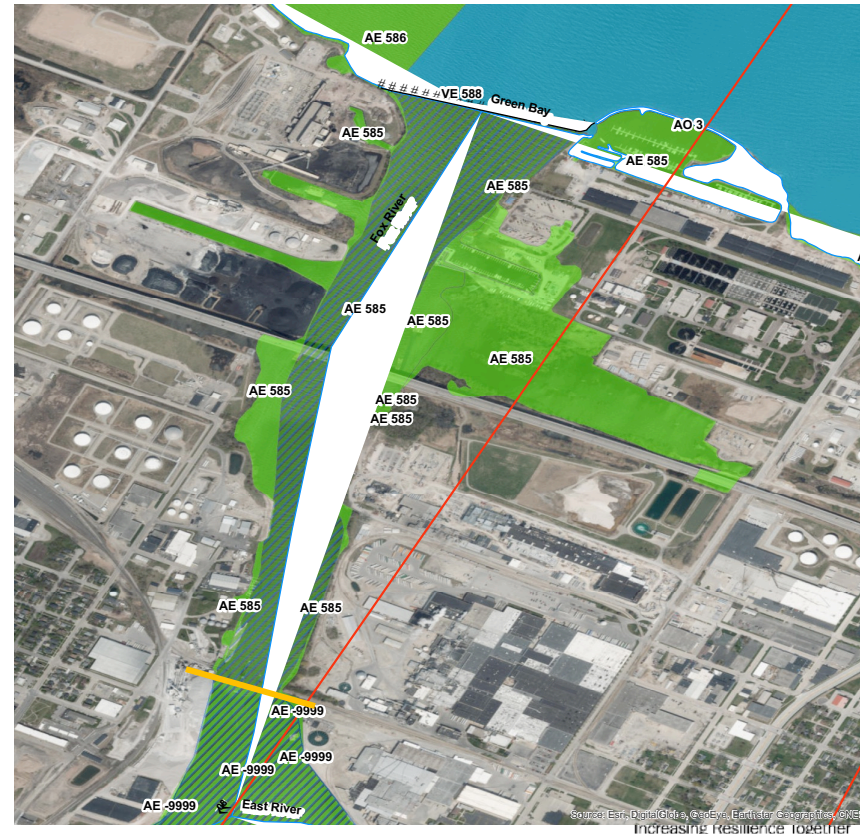
### Effective Coastal Mapping at Fox River

- Fox River restudied using revised downstream boundary condition



### Revised Coastal and Riverine Mapping at Fox River

- Revised coastal SWEL BFE = 584.5 supersedes revised riverine influence to the Rail Road bridge





# Summary of Letters of Map Change (LOMCs) for Brown County

SOMA-1

## PRELIMINARY SUMMARY OF MAP ACTIONS

Community: BROWN COUNTY

Community No: 550020

### 2A. LOMCs on Revised Panels

LOMC	Case No.	Date Issued	Project Identifier	Original Panel	Current Panel
LOMA	97-05-3452A	06/04/1997	HUNTER'S RUN - LOT 37 - 2528 WYNDRUSH DRIVE	5500200075B	55009C0157G
LOMA	98-05-3374A	07/02/1998	4421 ANAPULA LANE - SECTION 29, LOT 1	5500200100C	55009C0201G
LOMR-F	99-05-5422A	10/27/1999	RIVER PINES CONDOMINIUM PROJECT	5500200150B	55009C0257G
LOMA	00-05-2936A	05/02/2000	5019 EDGEWATER BEACH ROAD	5500200100C	55009C0202G
LOMA	00-05-5078A	08/17/2000	4689 ESTHER LANE	5500200100C	55009C0201G
LOMA	00-05-6146X	09/29/2000	840 EAST ST. JOSEPH STREET	5500200150B	55009C0257G
LOMR-F	02-05-1299A	03/06/2002	1541 BELLEVUE STREET	5500200150B	55009C0257G
LOMR-F	02-05-2617A	07/24/2002	1531 BELLEVUE STREET	5500200150B	55009C0257G
LOMA	02-05-3893A	09/20/2002	544 RESORT ROAD	5500200050B	55009C0069G
LOMR-F	03-05-0036A	11/15/2002	LOT 82, THE FOREST AT HUNTER'S RUN--2444 WYNDRUSH DRIVE	5500200075B	55009C0157G
LOMR-F	03-05-1100A	03/20/2003	RIVER PINES CONDOMINIUM	5500200150B	55009C0257G
LOMA	03-05-3229A	08/07/2003	LOT 34, HUNTER'S RUN--2568 WYNDRUSH DRIVE	5500200075B	55009C0157G
LOMR-F	04-05-3232A	06/10/2004	RIVER PINES CONDOMINIUMS--TWIN LAKES CIRCLE AND RIVER PINES DRIVE	5500200150B	55009C0257G

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

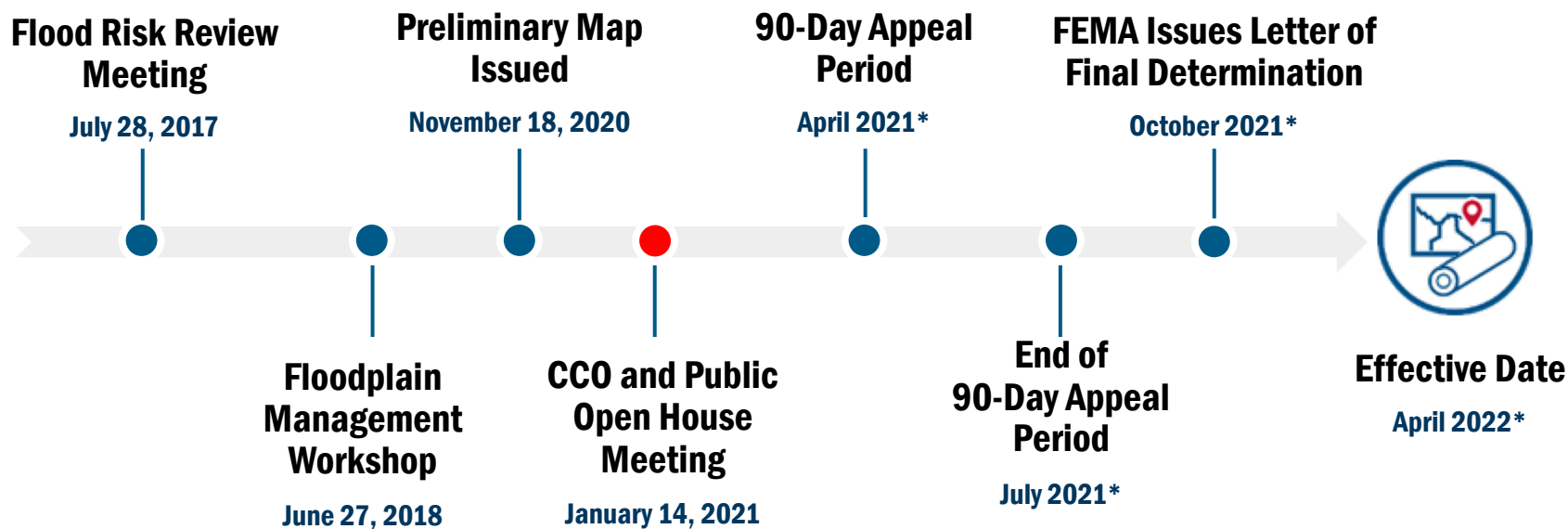


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# Timeline for Brown County Coastal Update



**Effective Date**  
April 2022\*

\*Estimated Dates



# 4-Step Pre-Adoption Process



**Inform the  
Community**



**Gather Comments  
and Additional Data**



**Appeal Process**



**LFD Issued**



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# #1: Inform the Community – Open House

- ▶ **Viewing via flood map viewer**
- ▶ **Opportunity to share program information with property owners**
- ▶ **Comments collected**
- ▶ **Attendees notified as process moves forward**
- ▶ **Proposed virtual Open House dates:  
February 22<sup>nd</sup> and 24<sup>th</sup> from 4pm-7pm CT**





## #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 February 15, 2021.**





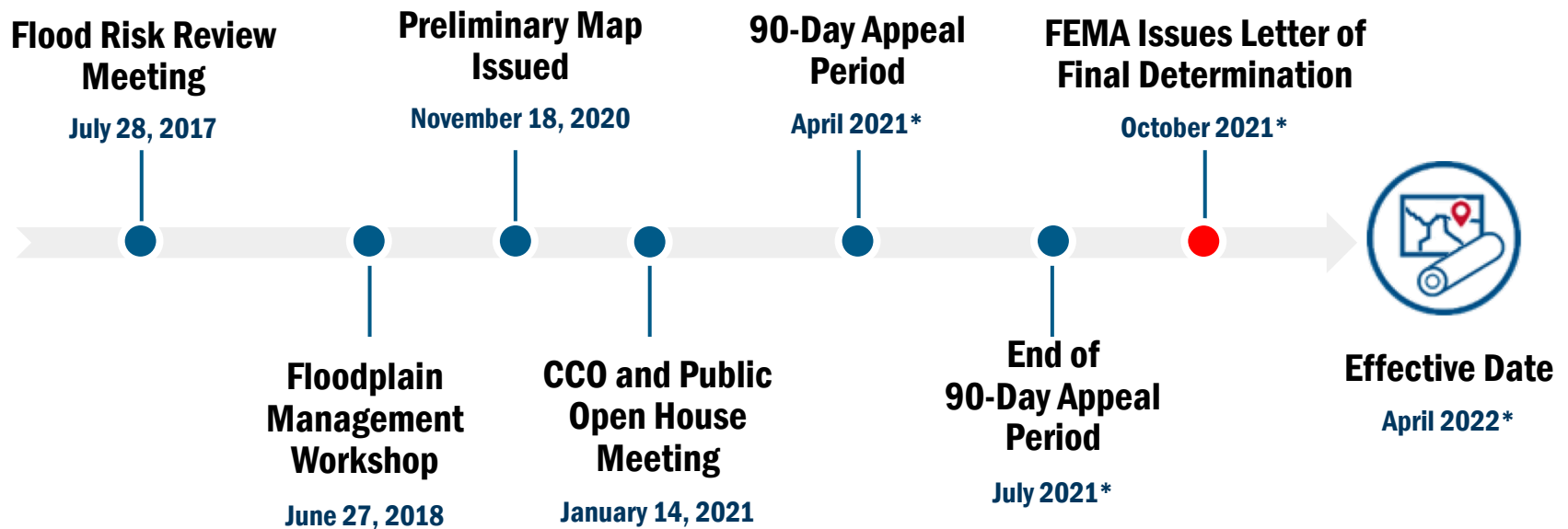
# #3: Appeal Process

- ▶ **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**





# Timeline for Brown County Coastal Update



\*Estimated Dates



# 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 Letter
- 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)**



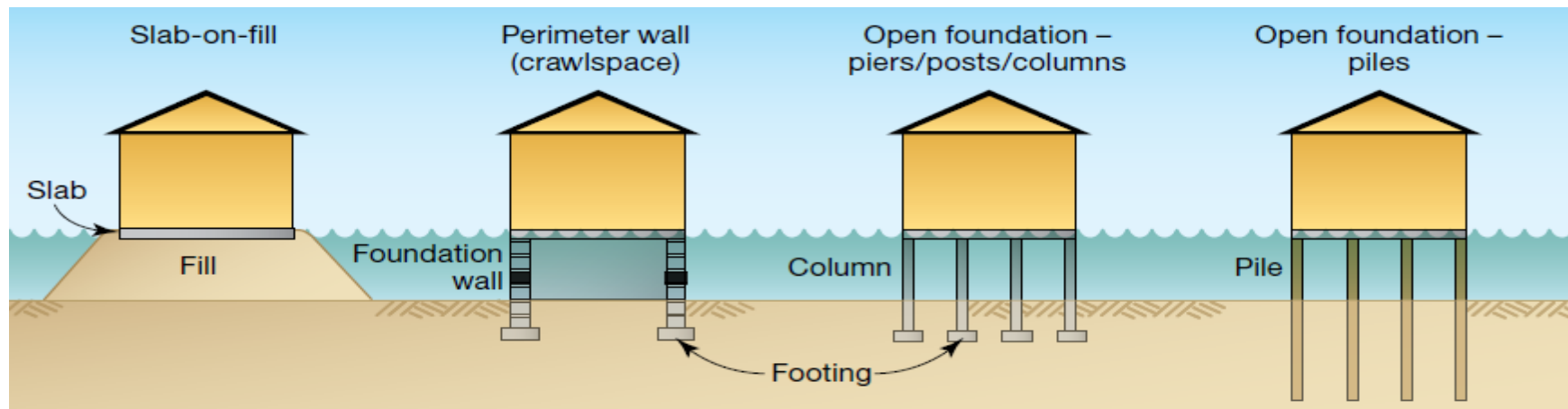
# Differences in Development Requirements

## 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)

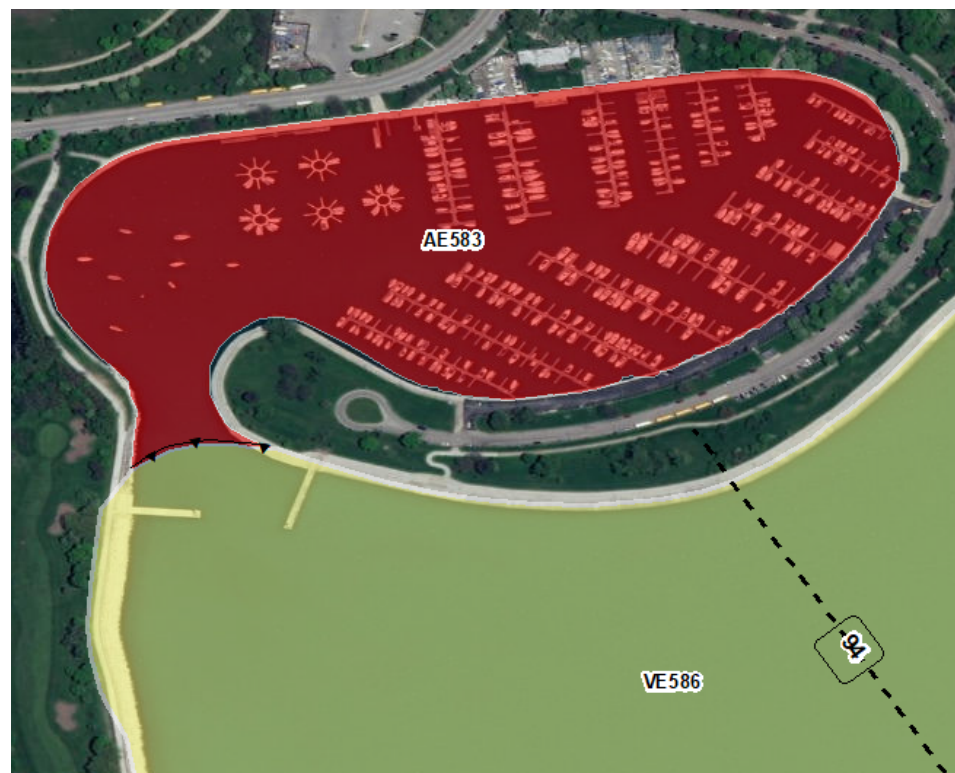
- Fill is not allowed for structural support of buildings.
- Only open foundations on columns or piles, free of obstructions, or breakaway walls are allowed below the BFE.
- Bottom of lowest horizontal structural member to or above BFE, with an as-built elevation on file.
- A Professional Engineer or Architect shall 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

- ▶ The Community Rating System (CRS) benefits communities requiring VE zone construction standards in areas defined by the LiMWA or areas subject to waves greater than 1.5 feet.
- ▶ There is currently no distinction for insurance purposes between Zone AE and a “coastal” Zone AE on the water side of the LiMWA.





# Does your community have a previously approved residential floodproofed basement exception?

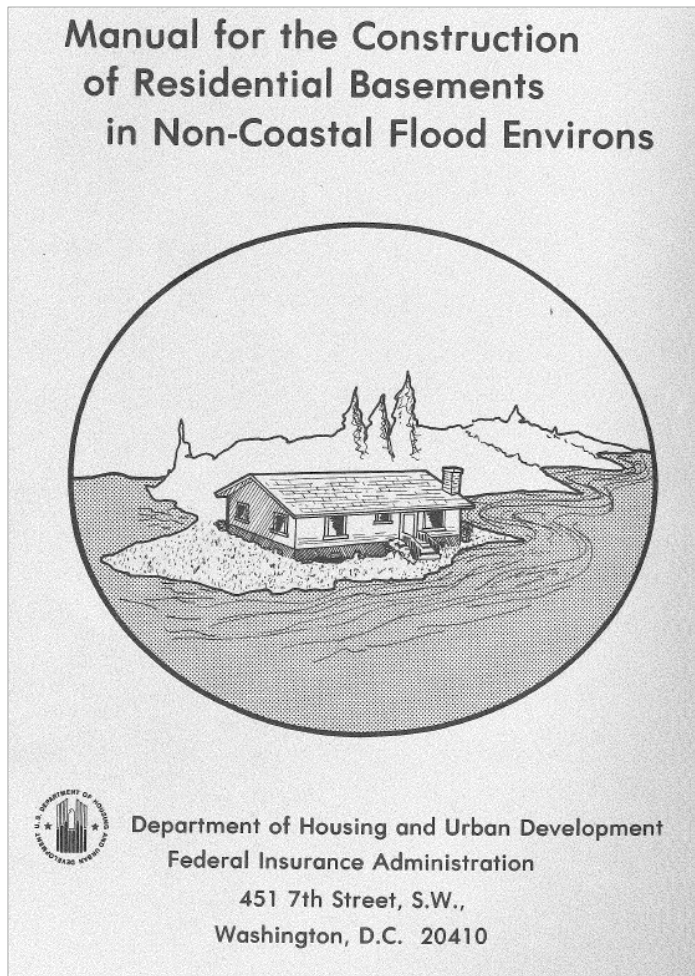
- ▶ **Village of Allouez (approved 1/11/1993)**
- ▶ **Village of Ashwaubenon (approved 10/27/1978)**
- ▶ **Brown County (unincorporated areas) (approved 2/21/1979)**
- ▶ **City of Depere (approved 10/27/1978)**
- ▶ **City of Green Bay (approved 10/27/1978)**
- ▶ **Village of Howard (approved 10/27/1978)**

**Does your community need to have a residential floodproofed basement exception in the future? Why?**

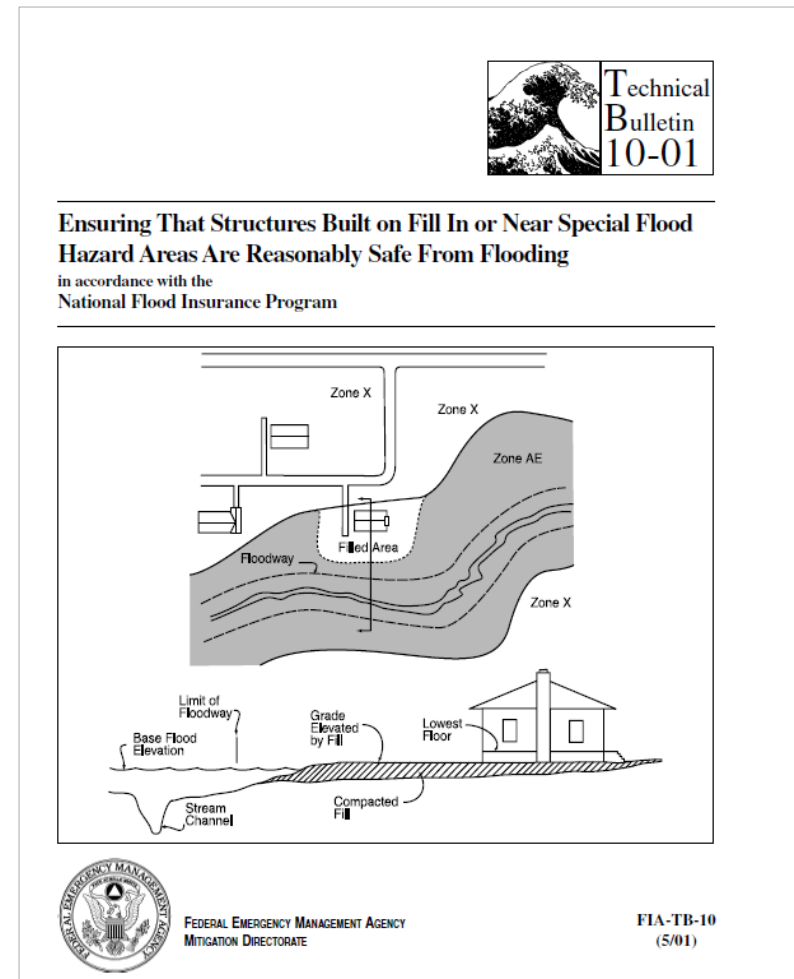


# Which of these doorways leads to better outcomes?

1977



2001



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# Floodproofed Basement vs. LOMR-F (Letter of Map Revision based on Fill)

## Residential Basement Floodproofing Exception

- ▶ Community requests approval from FEMA pursuant to [Section 60.6\(b\) or 60.6\(c\) of 44 C.F.R.](#)
- ▶ Cannot be allowed in coastal flood hazard areas
- ▶ Other flood hazard areas must meet specific criteria
- ▶ Flood insurance still required: may be costly

## LOMR-F

- ▶ Fill and construct building according to [TB 10](#)
- ▶ Apply for LOMR-F with community assurance that fill/building are reasonably safe from flooding
- ▶ Cannot be allowed in coastal flood hazard areas
- ▶ Flood insurance not required after LOMR-F



# What if my community wants to continue using the residential basement floodproofing exception?

- ▶ **Communities affected by this Physical Map Revision will need to request a Residential Basement Floodproofing Exception from FEMA under [Section 60.6\(c\)](#)**
  - **At least a portion of all communities in Brown County that have previously approved exceptions are affected (shown on preliminary revised map panels)**
- ▶ **Communities with coastal flood hazard areas will need to identify the flood hazard areas within their jurisdiction for which the exception is being requested (cannot include coastal flood hazard areas)**
  - **Local ordinance will need to distinguish these areas effectively from one another for this purpose.**



# Who provides the data and analysis needed to show that the criteria in Section 60.6(c) are met?

- ▶ **The community requesting the exception is responsible to provide the necessary data and analysis to show that its requested flood hazard areas qualify for the exception.**
  - **Some of the information may be provided in the preliminary FIS, but some may need to be developed locally**
- ▶ **If the data and analysis is not provided, the community's previously approved residential basement floodproofing exception will be rescinded following the effective date of the PMR.**
  - **Plan to make the request and submit the data well in advance of the effective date, and before the LFD if possible!**



# **What if flood hazard areas in my community do not meet the Section 60.6(c) criteria?**

- ▶ **Reconsider requesting the exception for these areas**
- ▶ **The process in Section 60.6(b), which requires a showing of gross inequity and severe hardship if the exception is not granted, could be requested by the community**
  - **Approval of an exception in such circumstances requires a special environmental clearance (an Environmental Assessment or full Environmental Impact Statement) and would not be quick, easy, or inexpensive.**



# What about buildings built under my community's basement exception during the time it was in effect?

- ▶ **Such buildings would be required to comply with local ordinance requirements when substantially improved (including repair of substantial damage)**
- ▶ **Current (as of October 2020) NFIP insurance underwriting rules also provide that buildings constructed under a valid community basement exception can be “grandfathered” for insurance purposes until substantially improved**



# Understanding Flood Insurance



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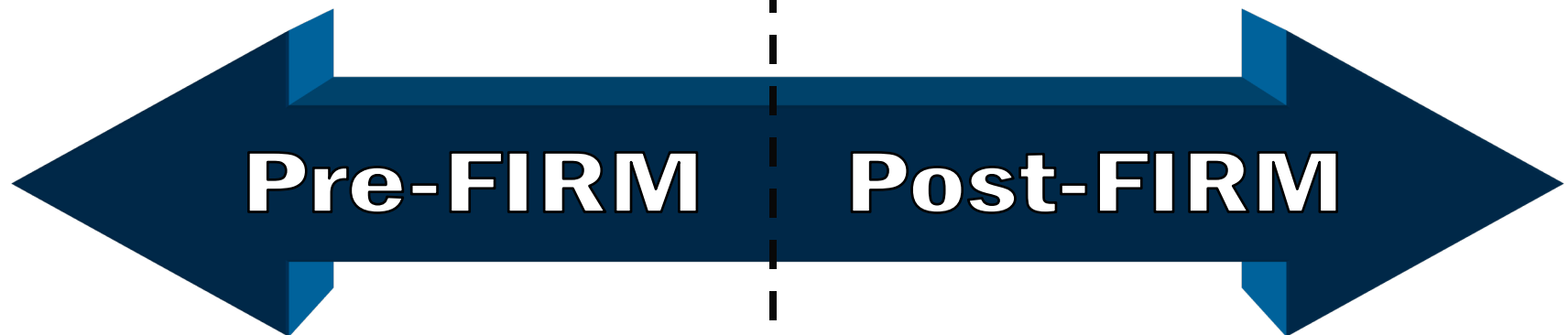
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# Flood Insurance Basic Concepts

- 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

- Uses the structure's elevation information to determine risk
- Based on the difference between the BFE and 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 them 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



# NFIP Floodplain Management and Insurance

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**Senior NFIP Specialist**

**FEMA Region V**

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**James Sink**

**Regional Flood Insurance Liaison**

**FEMA Region V**

**312-408-4421**

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**Brian J. Cunningham**

**State National Flood Insurance Program Coordinator**

**Wisconsin Department of Natural Resources**

**608-220-5633**

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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.**

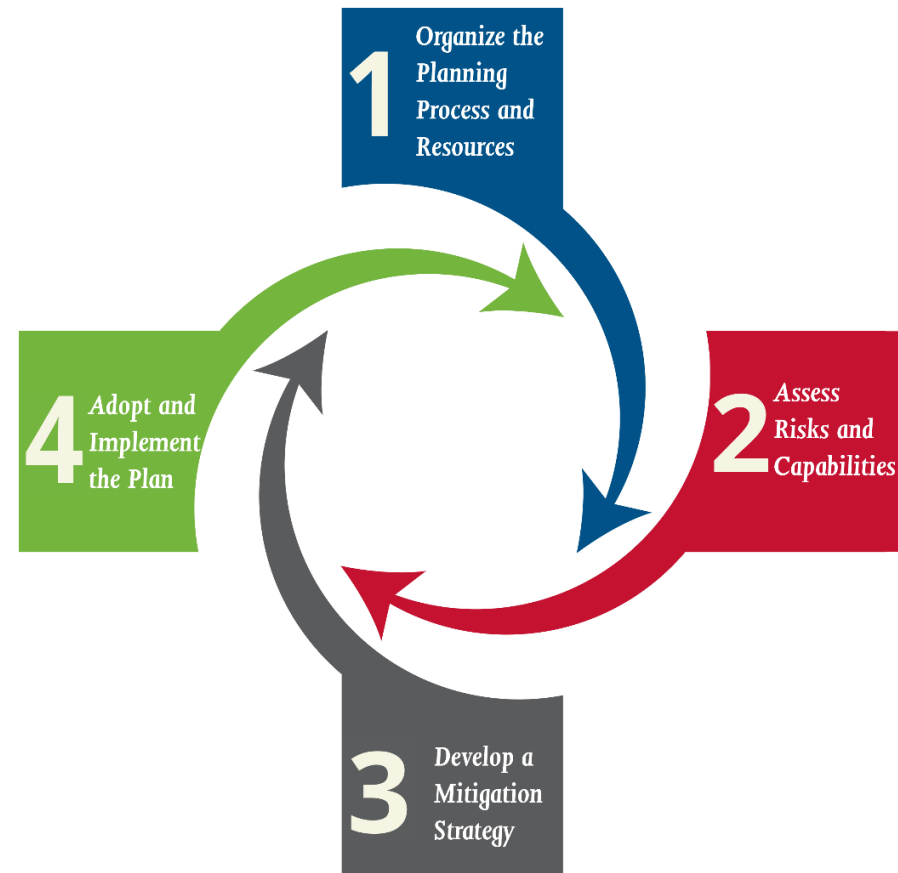
**Mitigation actions include:**

- ▶ 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 to 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.**



# WEM Mitigation Contacts and More Information

Web: <https://dma.wi.gov/DMA/wem/mitigation/hazard-mitigation>

WEM Main Office 608.242.3000

Robyn Fennig

State Hazard Mitigation Officer

[robyn.fennig@wisconsin.gov](mailto:robyn.fennig@wisconsin.gov)

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## Want More Information?

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

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





# 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:

<b>Requests for Flood Insurance Backup Data</b>	<b>Fee</b>
<b>1. Portable Document Format (PDF) or Diskettes of hydrologic and hydraulic backup data for current or historical FISs</b>	\$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.
<b>2. PDF or Mylar copies of topographic mapping developed during FIS process</b>	\$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.
<b>3. PDF of survey notes developed during FIS process</b>	\$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.
<b>4. PDF of individual Letters of Map Change (LOMCs)</b>	\$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.
<b>5. PDF of preliminary map panels</b>	\$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.
<b>6. DVDs of Digital Line Graph files, FIRM files or Digital LOMR attachment files</b>	\$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.
<b>7. Computer diskettes and user manuals for FEMA computer programs</b>	\$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.



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# Mapping Resources

- ▶ **FEMA Flood Map Changes Viewer**

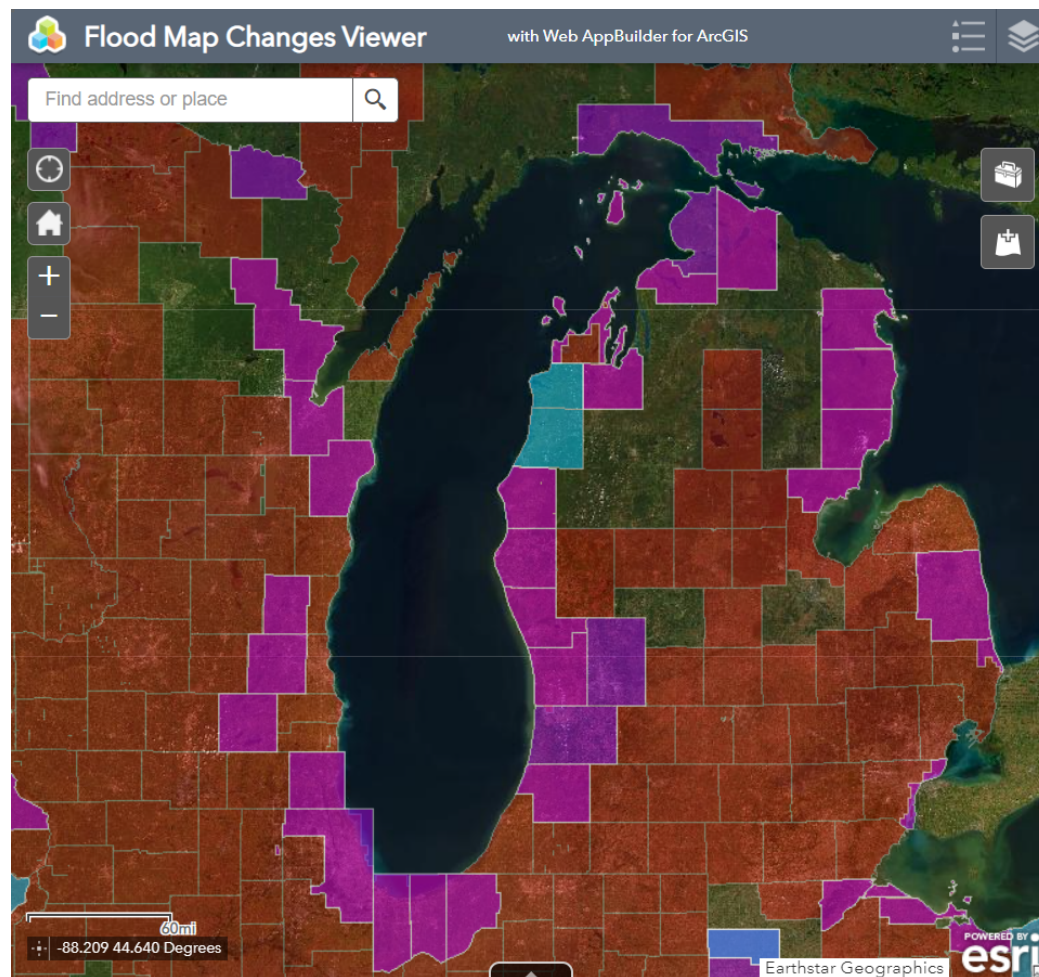
[www.msc.fema.gov/fmcv](http://www.msc.fema.gov/fmcv)

- ▶ **Preliminary Flood Hazard Data**

[www.fema.gov/view-your-communitys-preliminary-flood-hazard-data](http://www.fema.gov/view-your-communitys-preliminary-flood-hazard-data)

- ▶ **Steady State Program**

[www.msc.fema.gov](http://www.msc.fema.gov)



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# Questions and Additional Information

**Visit:**

**[www.greatlakescoast.org](http://www.greatlakescoast.org)**

**[www.fema.gov/preliminaryfloodhazarddata](http://www.fema.gov/preliminaryfloodhazarddata)**

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# Question & Answer Session



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