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WAYNE COUNTY COMMUNITY CONSULTATION OFFICERS (CCO) MEETING

February 27, 2019

FEMA

TODAY'S AGENDA

Review the Updated Flood Risk Data for Your County

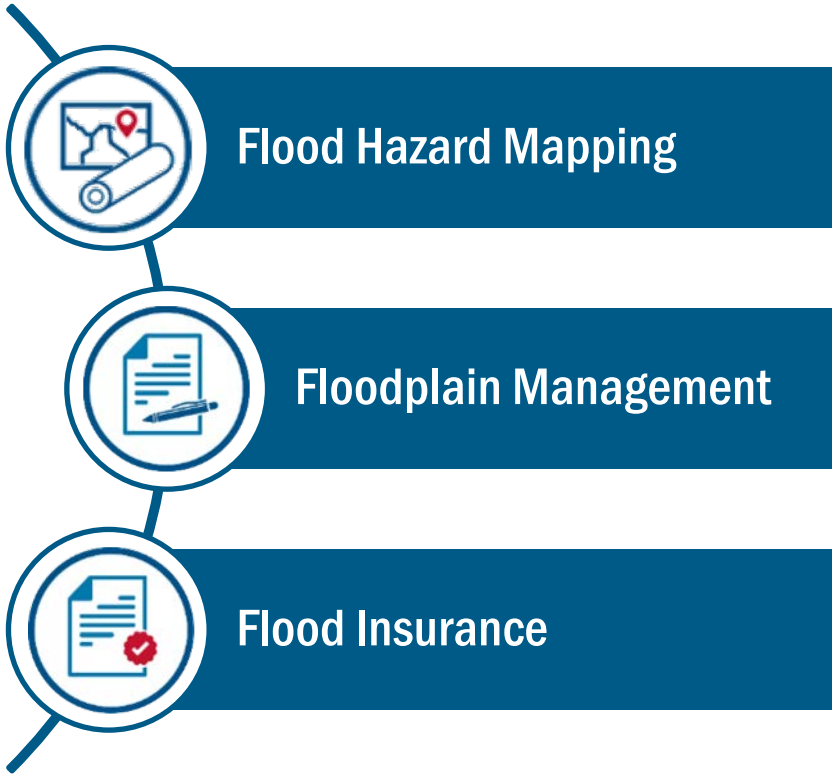
Next Steps in the Map Adoption Process

Understanding Flood Insurance

A Look at Hazard Mitigation

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

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Reviewing the Updated Flood Risk Data for Your County

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Why is FEMA Updating this Community's Flood Maps?

The Great Lakes Coastal Flood Study provides updated flood risk information across each of the Great Lakes, including Lake St. Clair, 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 & shoreline
- Changing technology and improved modeling techniques and data

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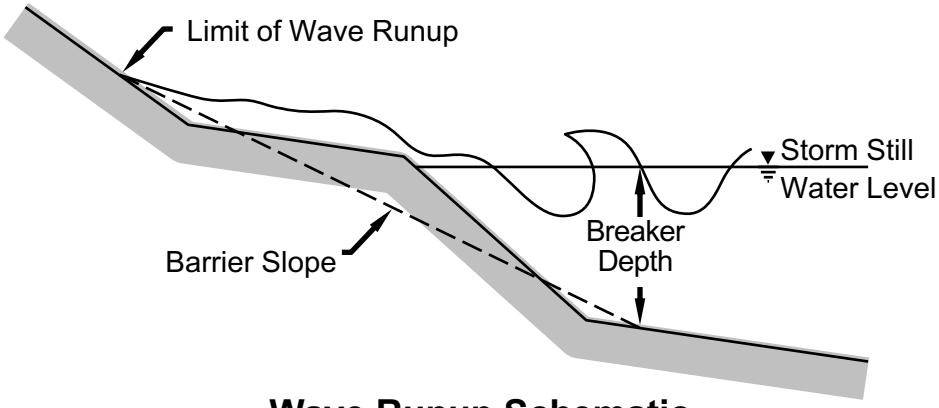
The Great Lakes Coastal Flood Study Approach

Regional Study Approach

- Lake-wide water level and wave analysis
  - 145 storms from 1960-2009
  - Modeling conducted by USACE in 2013
- 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 level tasks performed at county level
- Nearshore wave transformations
- Episodic erosion
- Wave setup and runup
- Overland wave propagation

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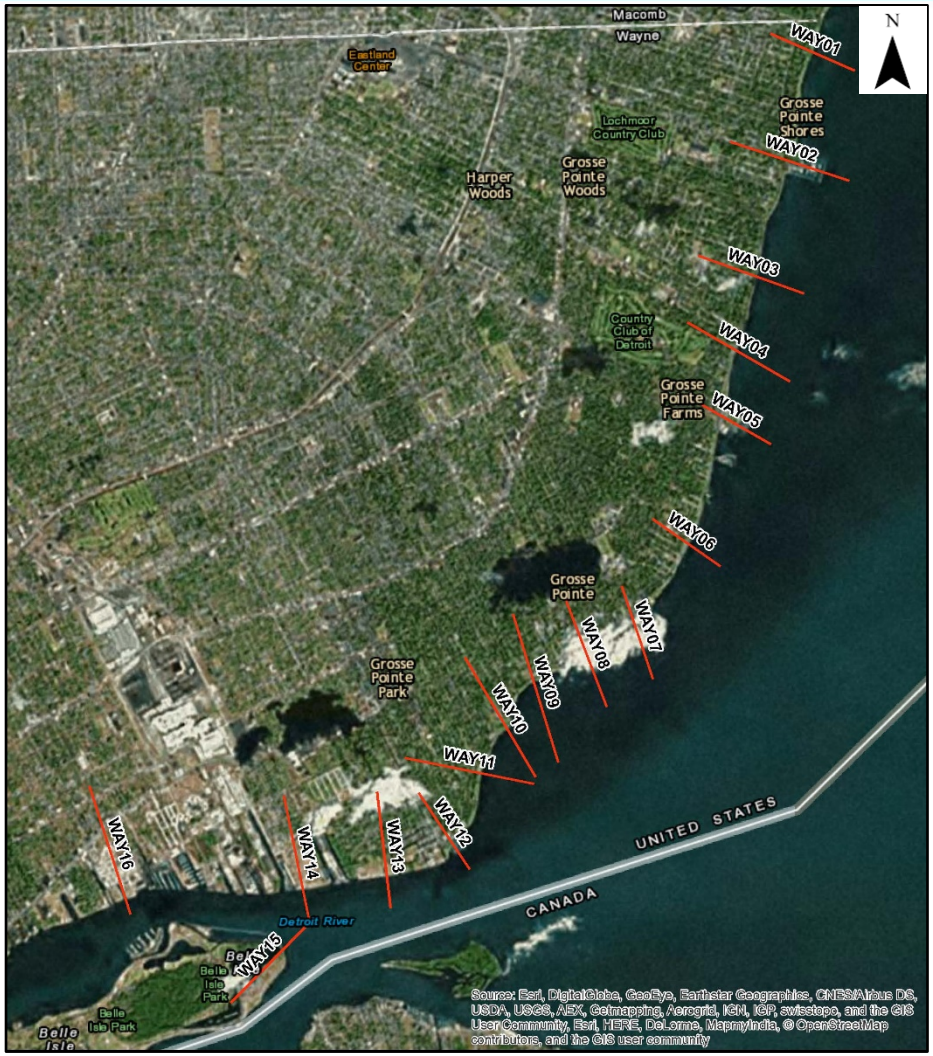
The Lake St. Clair Flood Study in Wayne County

Wayne County Coastal Flood Hazard Analysis:

- 23 Miles of Coastline
- 16 Coastal Transects
- Transects placed at representative shoreline reaches based on:
  - Topography
  - Exposure
  - Shoreline Material
  - Upland Development
- Riverine-Coastal Special Flood Hazard Area integration
- Topography
  - 2012 U.S. Army Corps of Engineers LiDAR



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The Lake Erie Flood Study in Wayne County

Wayne County Coastal Flood Hazard Analysis:

- 52 Miles of Coastline
- Riverine-Coastal Special Flood Hazard Area integration
- Topography
  - 2012 U.S. Army Corps of Engineers LiDAR
- 44 Coastal Transects
- Transects placed at representative shoreline reaches based on:
  - Topography
  - Exposure
  - Shoreline Material
  - Upland Development

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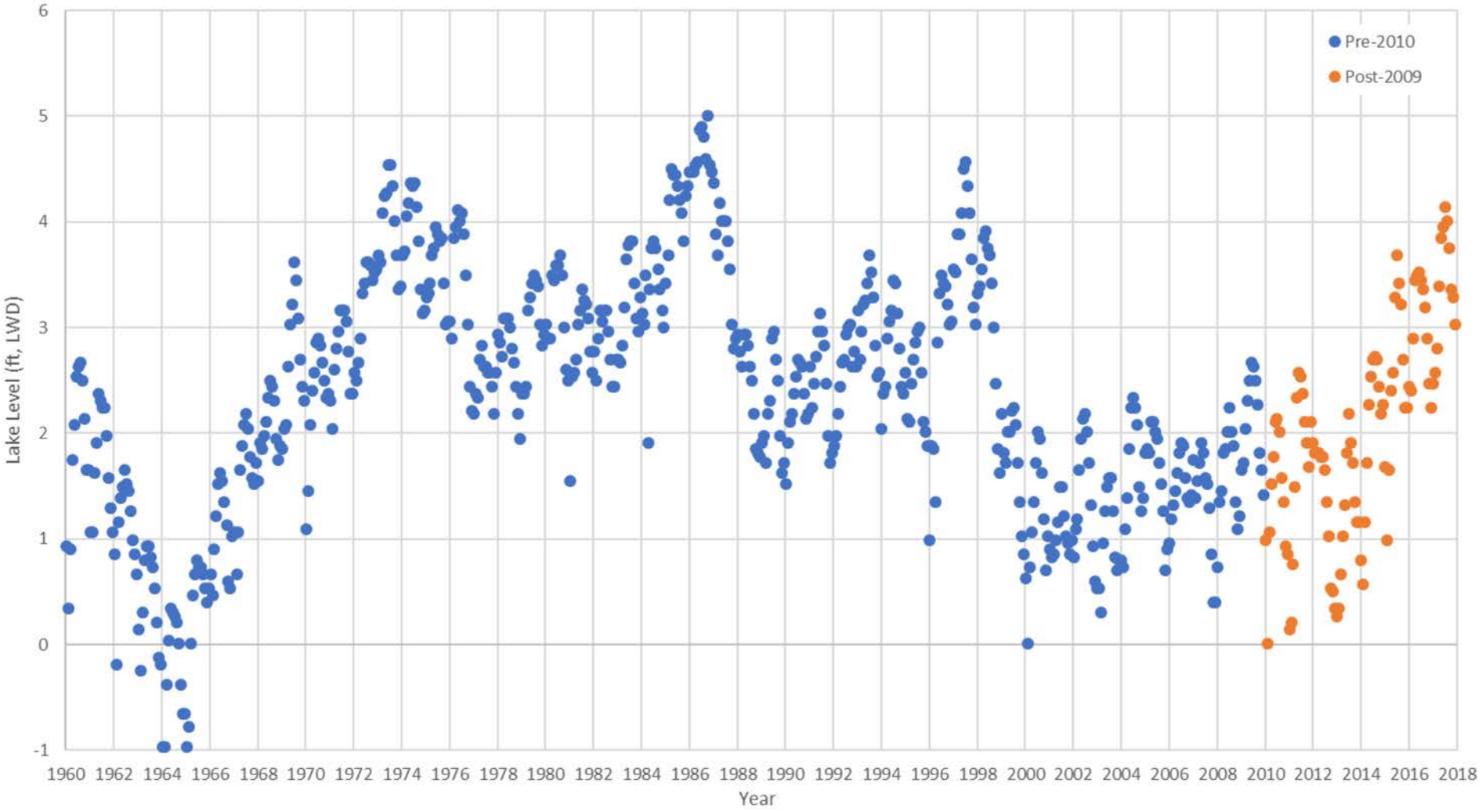
Lake St. Clair Water Levels



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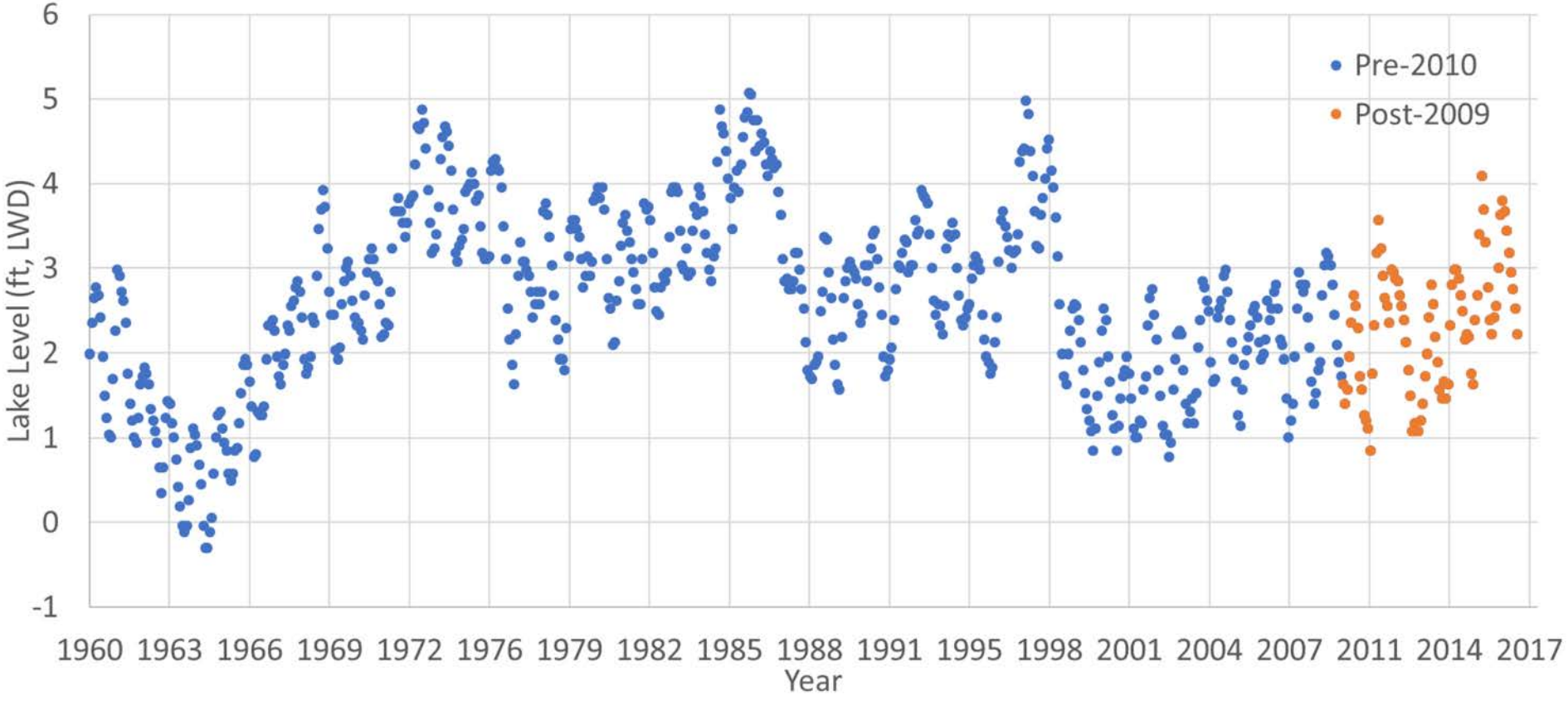
Lake Erie Water Levels



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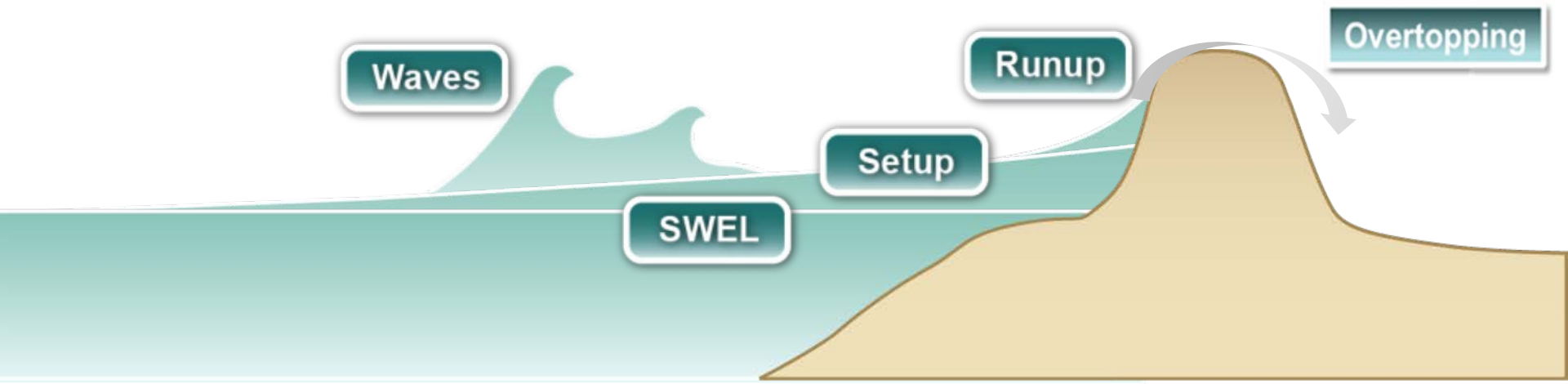
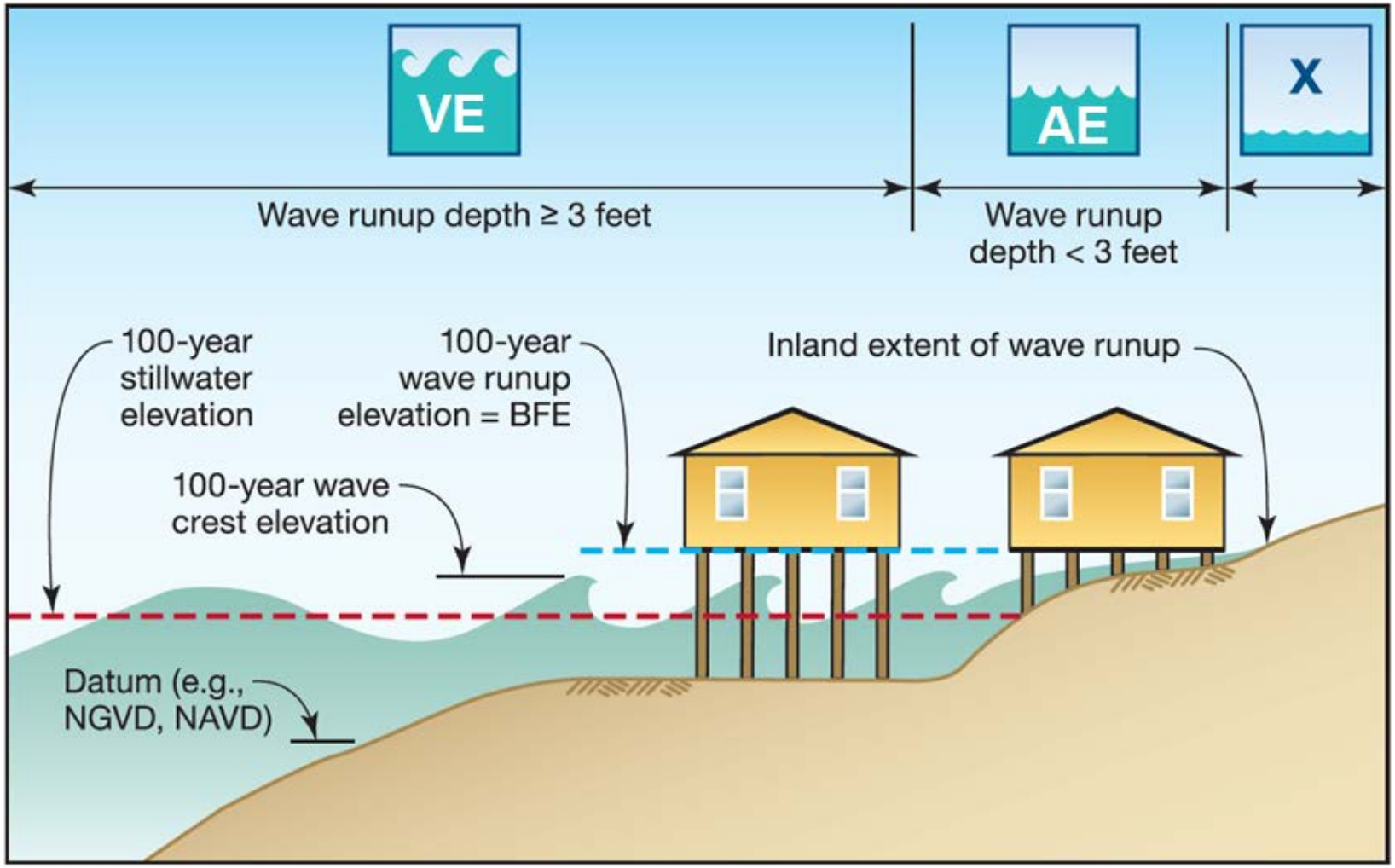
Measuring Coastal Base Flood Elevation



SWEL = Stillwater Elevation (storm surge level)

TWEL = Total Water Elevation (SWEL + wave effects)

Runup Mapping



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

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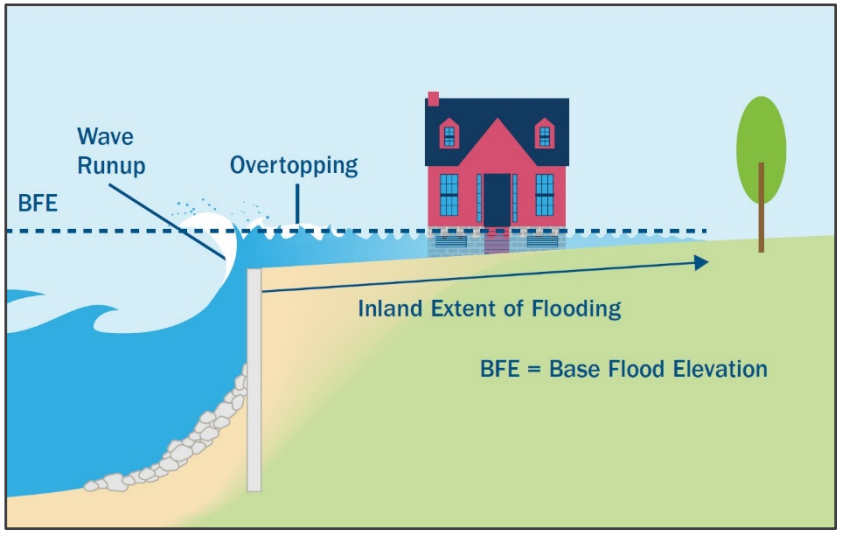
Wave Overtopping



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

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Photo: Green, M. Spencer. AP Photo. 2012. September 4,2014.

http://journalstar.com/ap/business/two-story-waves-on-great-lakes-halt-shipping/article_bcf2bb34-b528-52f5-8cd4-0c57e7ea8922.html

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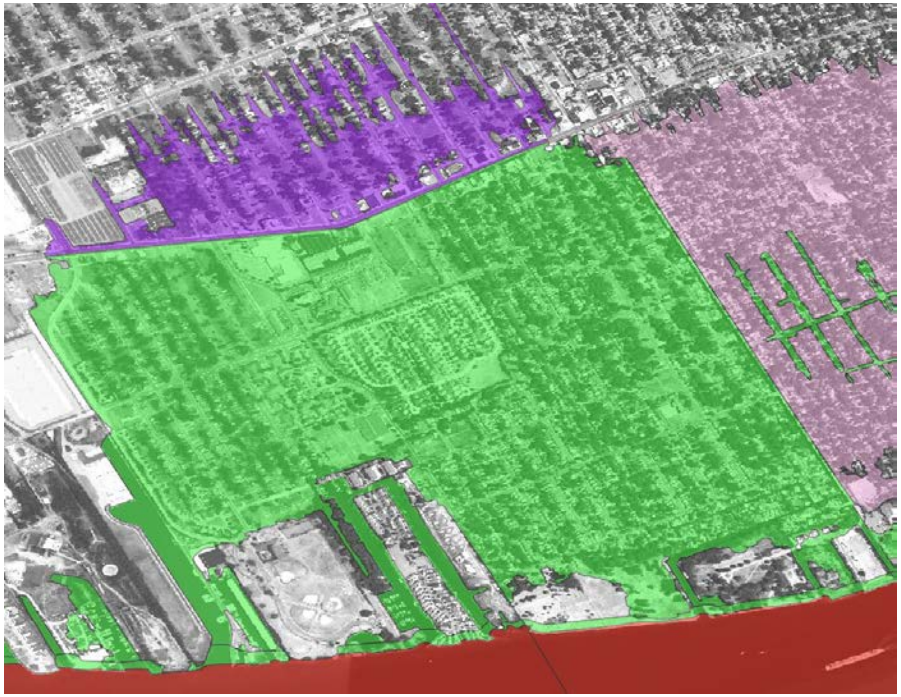
Special Flood Hazard Area (SFHA) Zones

- **Zone VE**
  - Coastal high-hazard zone areas where wave action and/or high-velocity water can cause structural damage during the 1-percent-annual-chance flood
  - Wave heights or wave runup > 3ft
  - Subdivided into elevation zones & 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 < 3ft
  - Subdivided into elevation zones & BFEs are assigned
- **Zone AO**
  - Applied in areas of sheet-flow & shallow flooding
  - Given an associated depth instead of a BFE

Stillwater Inundation – City of Detroit

Effective FIRM – February 2, 2012

Preliminary FIRM – December 21, 2018



Noted area where inundation by stillwater elevation is occurring, but waves cannot generate or propagate.

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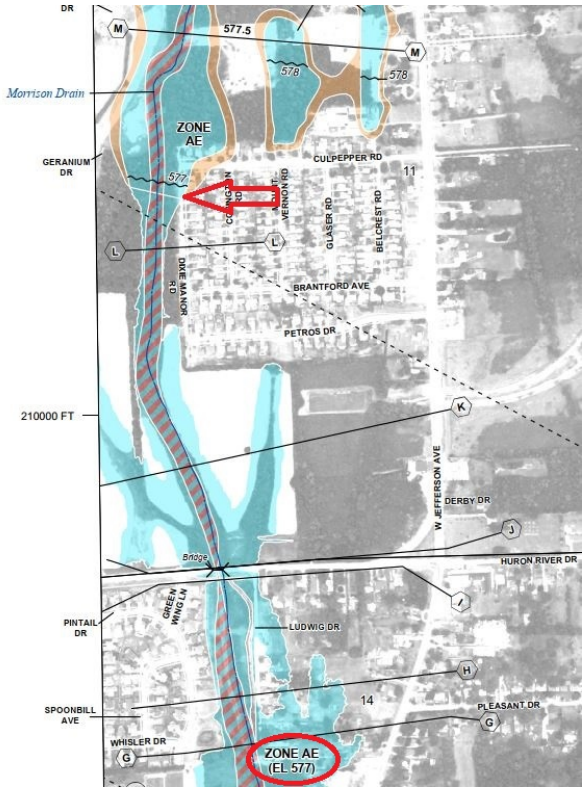
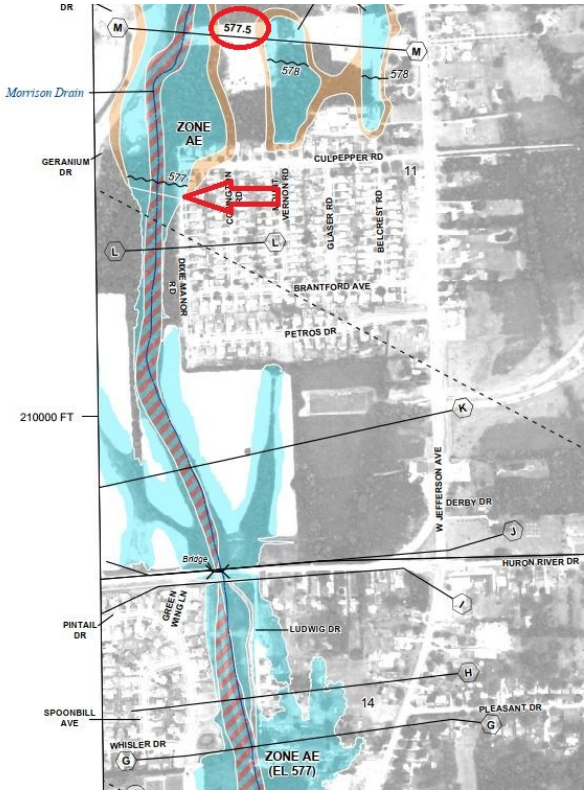
Scope of Work: Integrating Riverine and Coastal Data

Updated Coastal Stillwater BFE



Effective Riverine BFE



➡ Limits of Coastal Flood Effects from Lake Erie are shown on FIRM (white line) and in the Flood Insurance Study (in Table 24: Floodway Data and in Flood Profiles)

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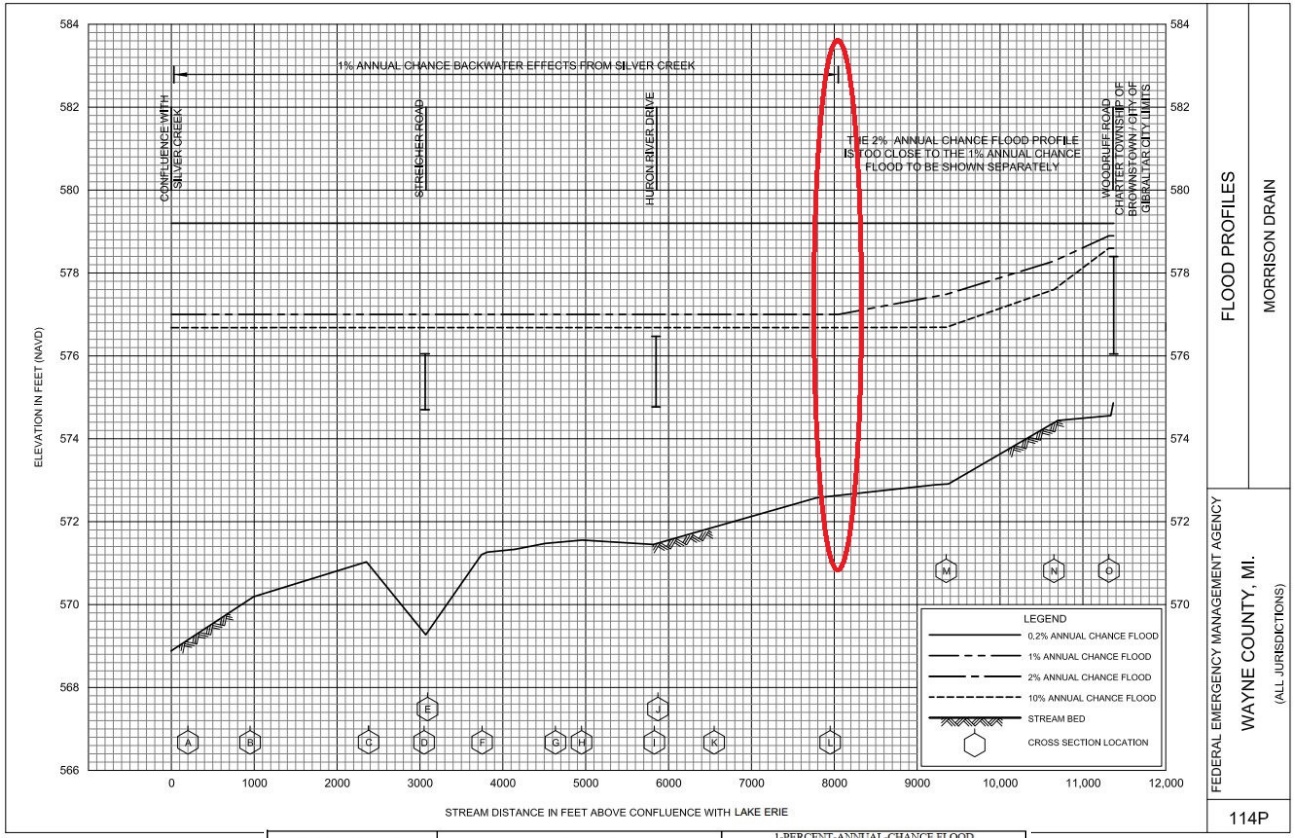
Scope of Work: Riverine-Coastal SFHA Integration



FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MORRISON DRAIN									
A	200	136	566	0.4		*	574.1[2]	574.2	0.1
B	950	136	433	0.5		*	574.1[2]	574.2	0.1
C	2,380	265	502	0.4		*	574.2[2]	574.3	0.1
D	3,050	14	42	4.8		*	574.2[2]	574.3	0.1
E	3,091	9	43	4.7		*	574.2[2]	574.3	0.1
F	3,750	198	253	0.8		*	574.6[2]	574.6	0.0
G	4,635	142	245	0.8		*	574.8[2]	574.8	0.0
H	4,950	150	258	0.8		*	574.9[2]	574.9	0.0
I	5,828	11	35	5.6		*	574.9[2]	575.0	0.1
J	5,871	11	51	3.9		*	576.2[2]	576.3	0.1
K	6,550	91	231	0.9		*	576.6[2]	576.6	0.0
L	7,950	112	215	0.9		*	576.9[2]	577.0	0.1
M	9,350	112	193	1.0		577.5	577.5	577.6	0.1

* Controlled by coastal flooding -- see Flood Insurance Rate Map for regulatory base flood elevation

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Scope of Work: Riverine-Coastal SFHA Integration

- **Detailed Zone AE**
  - Brownstown Creek
  - Ecorse Creek
  - Frank & Poet Drain
  - Huntington Creek
  - Jefferson Avenue Diversion
  - Morrison Drain
  - Silver Creek
  - Smith Creek/Silver Creek Overflow
- **Approximate Zone A**
  - Rouge River

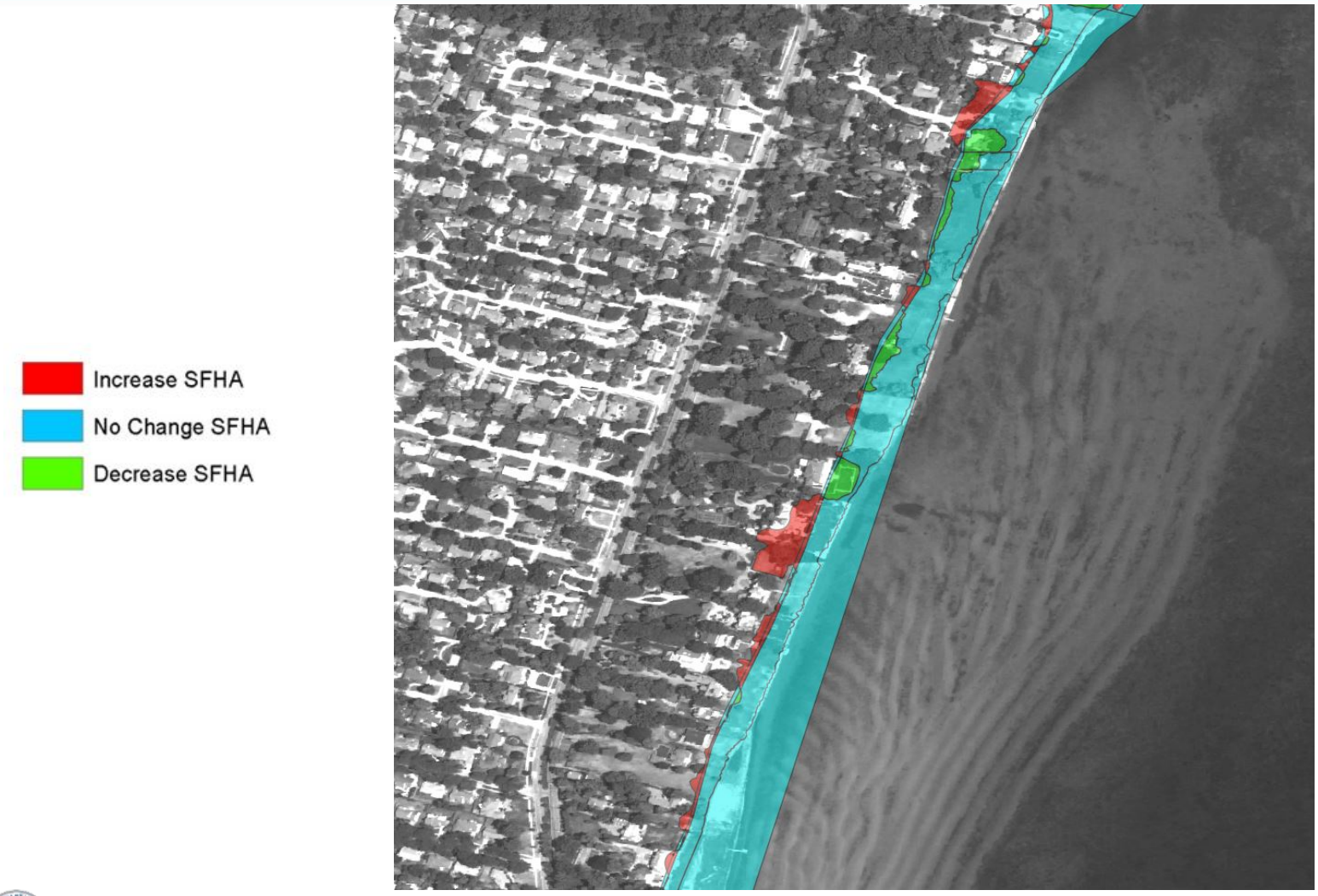
What are “Changes Since Last FIRM” in Wayne County ?

The “Changes Since Last FIRM” (CSLF) product compares the Effective Flood Insurance Rate Maps (FIRMs) to the new Preliminary FIRMs in GIS format.

In Wayne County, as in all counties along the Great Lakes:

- Coastal VE Zone replaced Effective Zone AE
  - Coastal High Hazard (Wave heights > 3ft)
- New Coastal AE Zones
  - Inland (behind shoreline) (Wave heights < 3ft)
- New Coastal AO Zones
  - Shallow Ponding Depths 1-3ft
- Riverine AE & A Zones were integrated
  - Coastal Stillwater Backwater Elevations were remapped, where applicable

Changes Since Last FIRM in Wayne County



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Summary of Wayne County's Letter of Map Changes (LOMCs)

SOMA-1

PRELIMINARY SUMMARY OF MAP ACTIONS

Community: ALLEN PARK, CITY OF Community No: 260217

2B. LOMCs on Unrevised Panels

LOMC	Case No.	Date Issued	Project Identifier	Original Panel	Current Panel
LOMA	95-05-2038A	11/21/1995	17205 ARLINGTON	2602170002B	26163C0263E
LOMA	00-05-5312A	10/11/2000	DEARBORN ECORSE TOWNLINE SUB #2, LOT 1008	2602170002C	26163C0264E
LOMA	03-05-0678A	12/04/2002	DEARBORN-ECORSE TOWNLINE SUB., LOT 733, &1/2 OF ALLEY; 17452 O'CONNOR	2602170002C	26163C0263E
LOMA	11-05-4530A	03/23/2011	Lot 107-108, Outer Drive Estates Subdivision - 16958 Cicotte Ave	2602170002C	26163C0264E
LOMA	11-05-5078A	04/22/2011	Lot 984,985, Dearborn Ecorse Townline No. 2 Subdivision - 17131 Cicotte Avenue	2602170002C	26163C0264E
LOMA	11-05-5134A	04/26/2011	Lot 106-107, Outer Drive Estates Subdivision Subdivision - 16972 Cicotte Avenue	2602170002C	26163C0264E
LOMA	11-05-5593A	05/13/2011	Lot 886, Dearborn Ecorse TownLine Subd'n No 2 Subdivision - 17070 Russell Ave	2602170002C	26163C0264E
LOMA	11-05-5633A	05/16/2011	Lot 101,102, Hamilton Boulevard Subdivision - 17209 Cicotte Avenue	2602170002C	26163C0264E
LOMA	11-05-5755A	05/19/2011	Lot 956, Dearborn Ecorse Townline Subd'n No. 2 Subdivision - 17103 Keppen Avenue	2602170002C	26163C0264E
LOMA	11-05-7932A	08/12/2011	Lot 968, Dearborn Ecorse Townline Subd'n No. 2 Subdivision - 17005 Keppen Avenue	2602170002C	26163C0264E
LOMA	12-05-2571A	01/20/2012	Lot 887, Dearborn Ecorse Townline Subd'n No. 2 Subdivision - 17078 Russell Avenue	2602170002C	26163C0264E
LOMA	12-05-3124A	02/14/2012	Lot 98-99, Hamilton Boulevard Subdivision - 17231 Cicotte Avenue	26163C0264E	26163C0264E
LOMA	12-05-3126A	02/14/2012	Lot 97-98, Hamilton Boulevard Subdivision - 17241 Cicotte Avenue	26163C0264E	26163C0264E
LOMA	12-05-4378A	03/27/2012	Lot 79, Outer Drive Estates Subdivision - 4661 Shenandoah Avenue	26163C0264E	26163C0264E
LOMA	12-05-5528A	05/08/2012	Lot 865 & 866, Dearborn Ecorse Townline No. 2 Subdivision - 17099 Russell Avenue	26163C0264E	26163C0264E

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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 Re-determined

Be sure to review the prelim SOMA for completeness

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

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Next Steps in the Map Adoption Process

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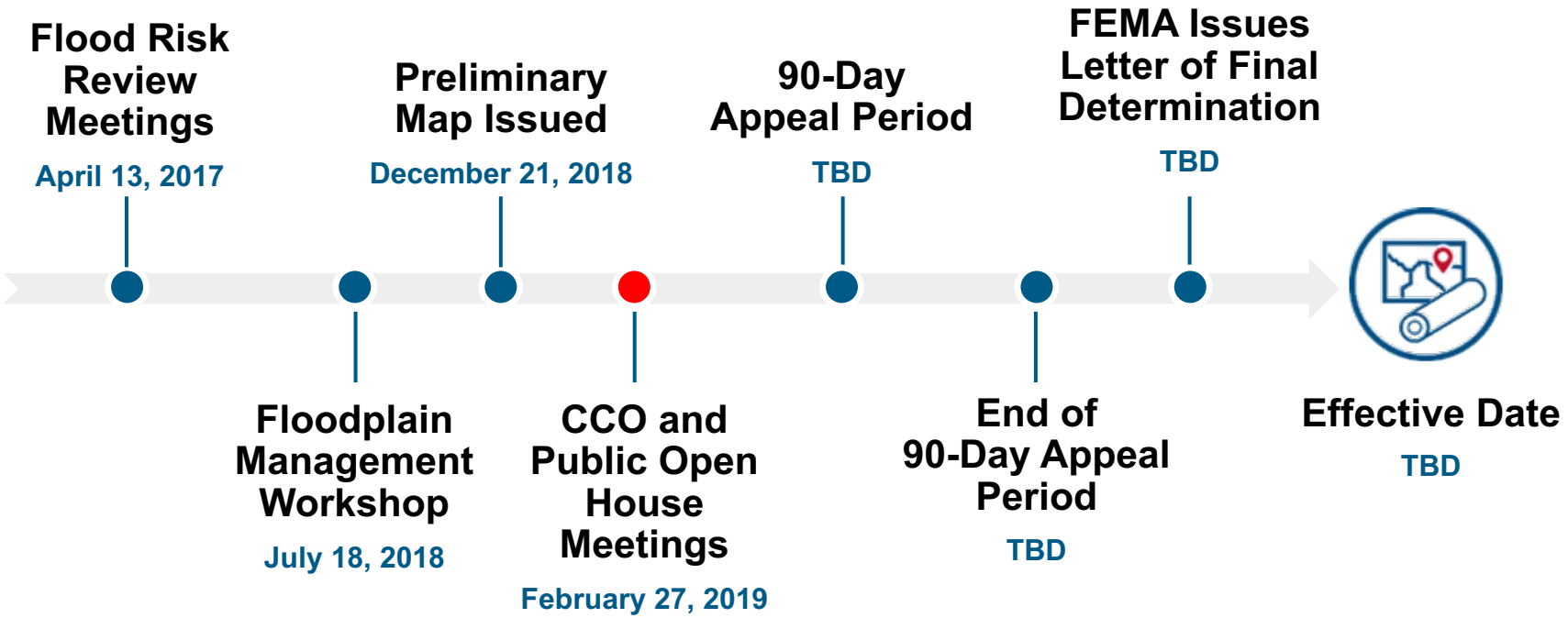
Timeline for Wayne County



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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 paper maps or map viewer
- Opportunity to share program info 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 request that community officials forward initial round of comments to FEMA no later than March 29, 2019

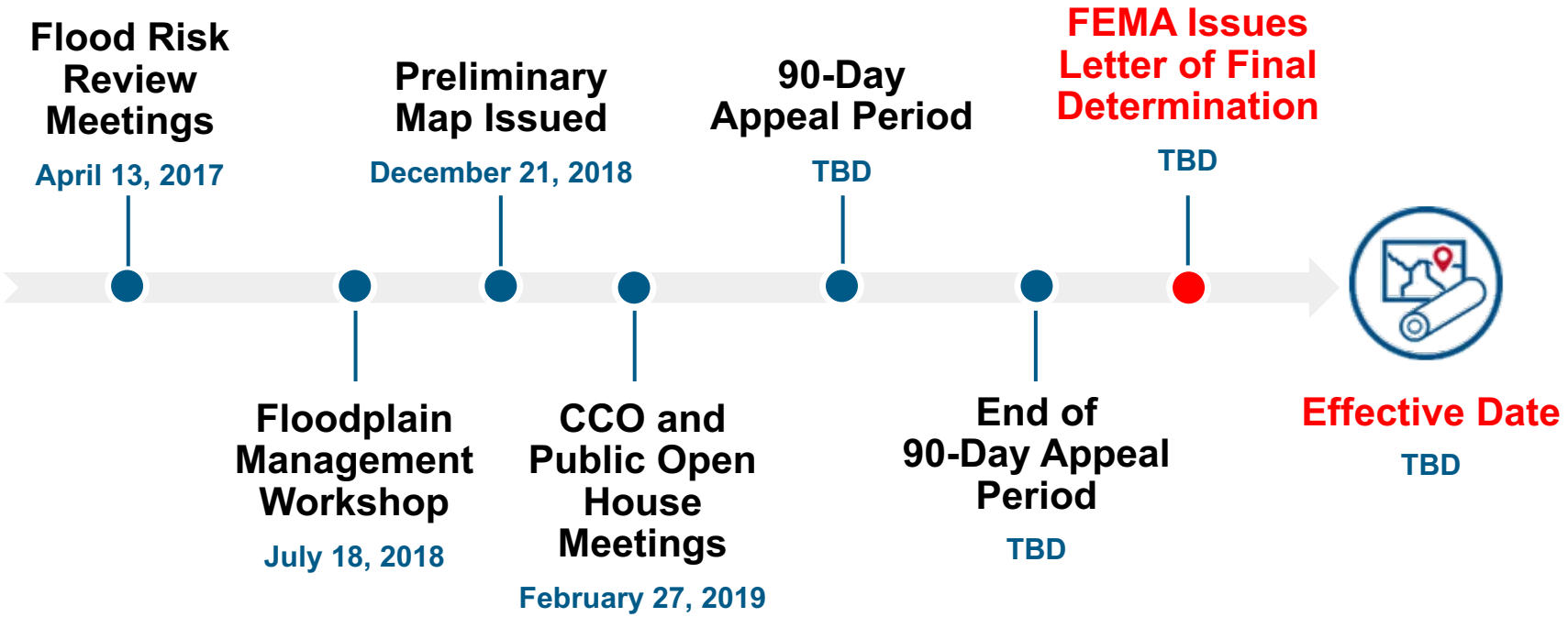
#3: Appeal Process

- **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 CEO
- **FEMA will evaluate all appeals and comments for resolution after the Appeal Period**

The Appeals Period: Appeals vs. Comments

- **To be considered an appeal, a submittal must:**
  - Include data that shows the proposed flood hazard information (e.g. new or modified Special Flood Hazard Area zones or boundaries, Base Flood Elevations, base flood depths, and/or floodway boundaries) is scientifically or technically incorrect;
  - Include the necessary revisions to the FIRM and/or FIS report (e.g. boundaries of revised floodplains);
  - Be received during the statutory 90-day appeal period
- **The term comment is used for any submittal that does not meet the requirements for an appeal as outlined above**

#4: Issuing the Letter of Final Determination



Understanding Floodplain Management Ordinance Requirements

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Participation in the National Flood Insurance Program

- 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).
- 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 ordinance to reference the effective date of FIRM & FIS (or community may be suspended from NFIP) before the end of the 6-month period.**

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

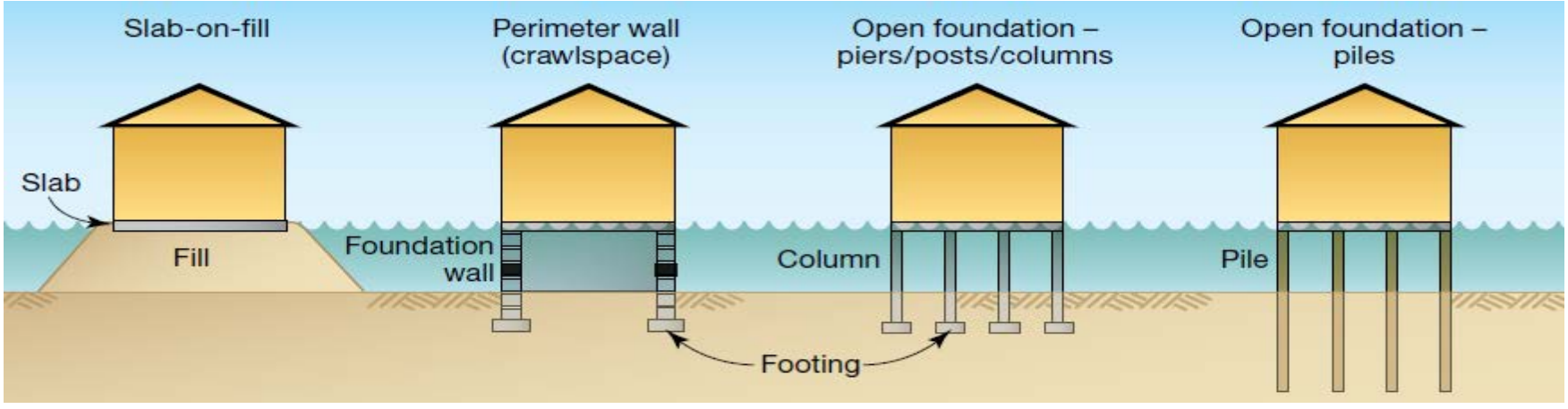
Differences in Development Requirements

A Zones

- Fill outside the floodway or which can be shown to not cause a rise to the BFE allowed.
- Fully-enclosed foundation wall (flood openings required) construction allowed.
- Lowest floor elevated to or above the base flood elevation (BFE).
- As-built lowest floor elevation required to be on file with permit records.

V Zones (and AE zones to the water side of a LiMWA)

- Fill not allowed for structural support of buildings.
- Open foundation on columns or piles free of obstructions or designed with break away walls.
- Bottom of lowest horizontal structural member to or above BFE, with as-built elevation on file.
- Professional Engineer or Architect shall certify the design, including wind loading, of the structure and 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 LiMWA or areas subject to waves greater than 1.5 feet.
- Currently no distinction for <u>insurance</u> purposes between AE zone and "coastal" AE zone to the water side of LiMWA.

Understanding Flood Insurance

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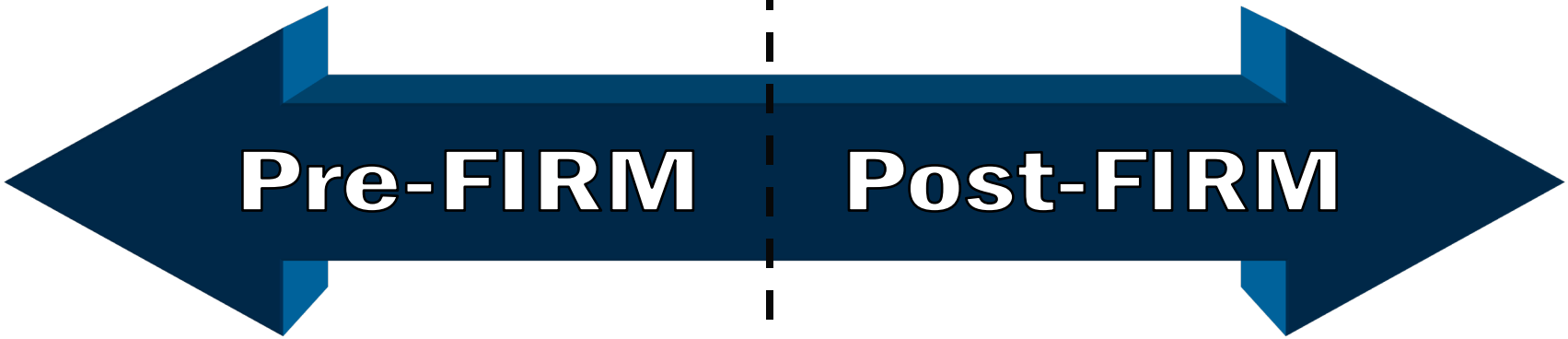
Flood Insurance Basic Concepts

- 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, occupancy
  - Subsidies are being phased out, with some categories increasing more quickly
- **Post-FIRM (actuarial) rates**
  - Uses the structure's elevation information to determine risk
  - Based on elevation difference between BFE (Base Flood Elevation) and lowest floor
  - Required for Post-FIRM structures, and optional for Pre-FIRM structures, if there is 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
    - A lender may require them to get an insurance policy
  - Remove a property from the SFHA
    - Lender may drop the insurance requirement
  - Change flood zone affecting property
    - Moving from an "A" zone to a "V" zone (or AE to 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 less costly premium, 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 SFHA from previous FIRM
  - Must have two or fewer losses from NFIP or disaster assistance
- **Grandfathering**
  - Keeps lower rate zone and/or BFE
- **Two Ways**
  - Continuous coverage (Pre & Post)
    - 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

Insurance Rating and Product Possibilities

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

- **Grandfathering (Standard)**
- **Exceptions**
  - Can't have lapse in coverage
  - Building can't be altered/substantially improved

Risk Rating and Policy Forms Redesign

"The NFIP's new rating methodology will have several important upgrades. First, RRR will reflect and communicate the risk of local flooding by integrating commercial catastrophe data models and the outputs of Risk Mapping, Assessment, & Planning. This will allow rates to reflect a graduated view of risk instead of the "in or out" view used today. The risk will be communicated using characteristics policyholders can easily understand, like their distance to flooding source and their elevation. Second, the rates will reflect the structural characteristics that drive risk. One of the primary changes will use replacement cost values so that premiums will depend on what it costs to rebuild the house. Finally, RRR will utilize credible data that is easy to collect and an automated rating engine to streamline the underwriting and policy issuance process – all to provide a better customer experience."

(Public-Facing Document on FEMA.GOV) dated Fall 2018

Resources for Insurance

- **FEMA.GOV**

- **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

Emergency Management and Homeland Security Division
Michigan State Police

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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.

Examples of local mitigation actions are:

- Removing existing structures from flood hazard areas
- Elevation 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 Mitigation Planning

- Increases public awareness and understanding of risk areas and vulnerabilities by engaging the whole community
- Builds partnerships with diverse stakeholders
- Identifies potential risk reduction measures
- **Stewards information produced by Risk MAP, and 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) funding programs**
  - Plan approval is a precondition for receiving HMA grants
- **Requires local governments to submit a plan to 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 to learn more about the application process.

EMHSD Mitigation Branch Contacts

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

FEMA

RiskMAP
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Questions and Additional Information

Visit:

www.greatlakescoast.org

www.fema.gov/preliminaryfloodhazarddata

FEMA ArcGIS Online Preliminary Map Viewer

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Next Step: Open House

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