

# Demystifying FEMA's Flood Maps: Fact vs. Fiction



NFA Webinar

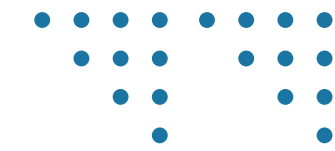
Andy Yesaitis  
Derik Pierson  
Kori Eskelin  
Jennifer Haun

# NFIP Definition of Flood



- A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (at least one of which is the policyholder's property) from:
  - Overflow of inland or tidal waters;
  - Unusual and rapid accumulation or runoff of surface waters from any source; or
  - Mudflow
- -OR- Collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood from the overflow of inland or tidal waters, as defined above.

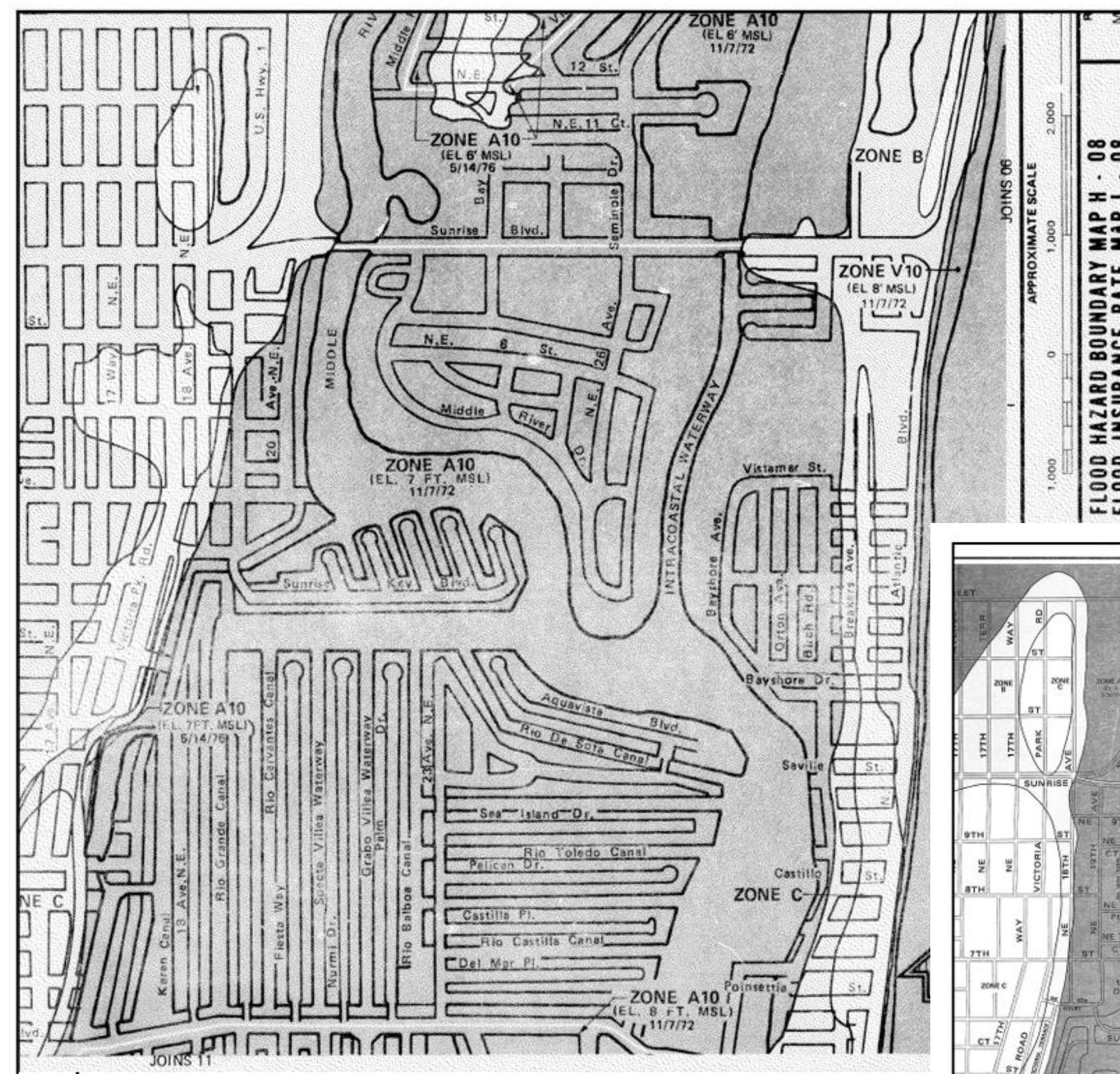
# Where does flooding occur?



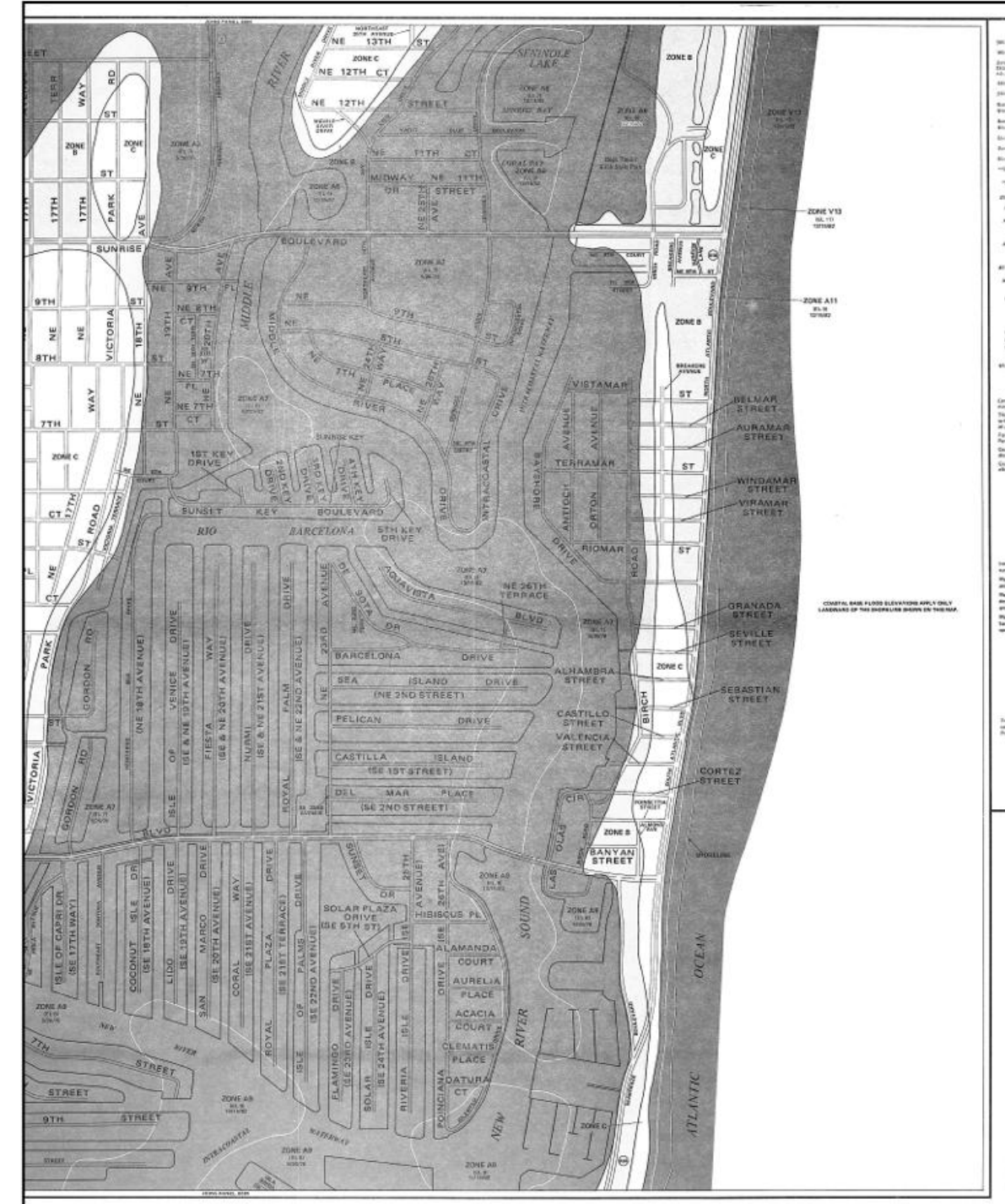
- Flooding Happens Everywhere !!!
  - [Floodsmart.gov](https://www.floodsmart.gov)
- A common misconception about flood insurance is that only people who live along the coasts or riverbanks need it. In fact, at least 40% of National Flood Insurance Program claims filed between 2015-2019 came from outside high-risk flood areas.
  - [Flood Maps | FEMA.gov](https://www.fema.gov)
- Floods occur naturally and can happen almost anywhere there is water or rain can fall. They may not even be near a body of water, although river and coastal flooding are two of the most common types. Heavy rains, poor drainage, and even nearby construction projects can put you at risk for flood damage.
  - [Record Rainfall is Causing Flash Flooding in Unexpected Areas | The National Flood Insurance Program for Agents](#)



|    |  |  |                                    |
|----|--|--|------------------------------------|
| 90 | DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT<br>Federal Insurance Administration<br>FORT LAUDERDALE, FL |  |                                    |
|    | APPROXIMATE SCALE<br>1000 0 2000 4000 6000 FEET  |  |                                    |
|    | FIA FLOOD HAZARD BOUNDARY MAP<br>No. H 06  | FIA FLOOD INSURANCE RATE MAP<br>No. I 06 | Effective Date<br>NOVEMBER 3, 1972 |



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT  
Federal Insurance Administration  
**CITY OF FORT LAUDERDALE, FL**  
IRRODWARD CO. I  
**FLOOD HAZARD BOUNDARY MAP H - 08**  
APPROXIMATE SCALE 1,000 0 1,000 2,000



**KEY TO MAP**

Zone A10 (EL. 7 FT. MSL) 11/7/72  
Zone B  
Zone V10 (EL. 8' MSL) 11/7/72

**EXPLANATION OF ZONE DESIGNATIONS**

Zone A10 (EL. 7 FT. MSL) 11/7/72  
Zone B  
Zone V10 (EL. 8' MSL) 11/7/72

**NOTES TO USER**

1. This map shows the flood hazard boundaries and insurance rate zones for the City of Fort Lauderdale, Florida, as of November 3, 1972. It is based on the Flood Hazard Boundary Map (FHBM) and Flood Insurance Rate Map (FIRM) for the City of Fort Lauderdale, Florida, as of November 3, 1972.

2. The flood hazard boundaries and insurance rate zones shown on this map are based on the Flood Hazard Boundary Map (FHBM) and Flood Insurance Rate Map (FIRM) for the City of Fort Lauderdale, Florida, as of November 3, 1972.

3. The flood hazard boundaries and insurance rate zones shown on this map are based on the Flood Hazard Boundary Map (FHBM) and Flood Insurance Rate Map (FIRM) for the City of Fort Lauderdale, Florida, as of November 3, 1972.

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5. The flood hazard boundaries and insurance rate zones shown on this map are based on the Flood Hazard Boundary Map (FHBM) and Flood Insurance Rate Map (FIRM) for the City of Fort Lauderdale, Florida, as of November 3, 1972.

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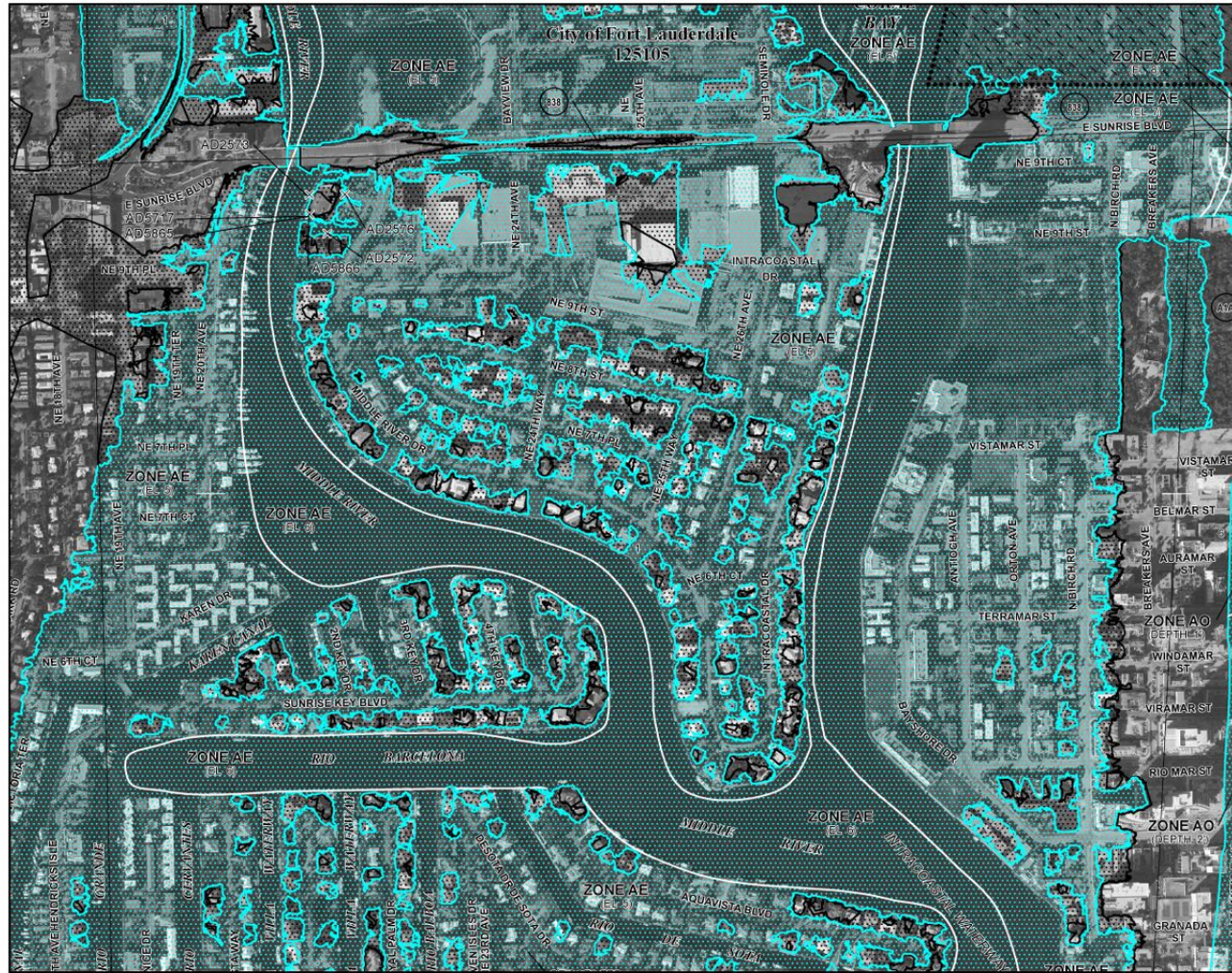
7. The flood hazard boundaries and insurance rate zones shown on this map are based on the Flood Hazard Boundary Map (FHBM) and Flood Insurance Rate Map (FIRM) for the City of Fort Lauderdale, Florida, as of November 3, 1972.


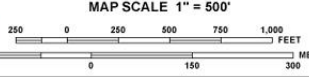
8. The flood hazard boundaries and insurance rate zones shown on this map are based on the Flood Hazard Boundary Map (FHBM) and Flood Insurance Rate Map (FIRM) for the City of Fort Lauderdale, Florida, as of November 3, 1972.

9. The flood hazard boundaries and insurance rate zones shown on this map are based on the Flood Hazard Boundary Map (FHBM) and Flood Insurance Rate Map (FIRM) for the City of Fort Lauderdale, Florida, as of November 3, 1972.

10. The flood hazard boundaries and insurance rate zones shown on this map are based on the Flood Hazard Boundary Map (FHBM) and Flood Insurance Rate Map (FIRM) for the City of Fort Lauderdale, Florida, as of November 3, 1972.

NATIONAL FLOOD INSURANCE PROGRAM  
**FIRM**  
FLOOD INSURANCE RATE MAP  
CITY OF FORT LAUDERDALE, FLORIDA  
IRRODWARD COUNTY  
PANEL 7 OF 10  
COMMUNITY PANEL NUMBER 12516A, 0077 D  
MAP RELEASED DECEMBER 13, 1992  
Flood Insurance Management Agency



  
**MAP SCALE 1" = 500'**  


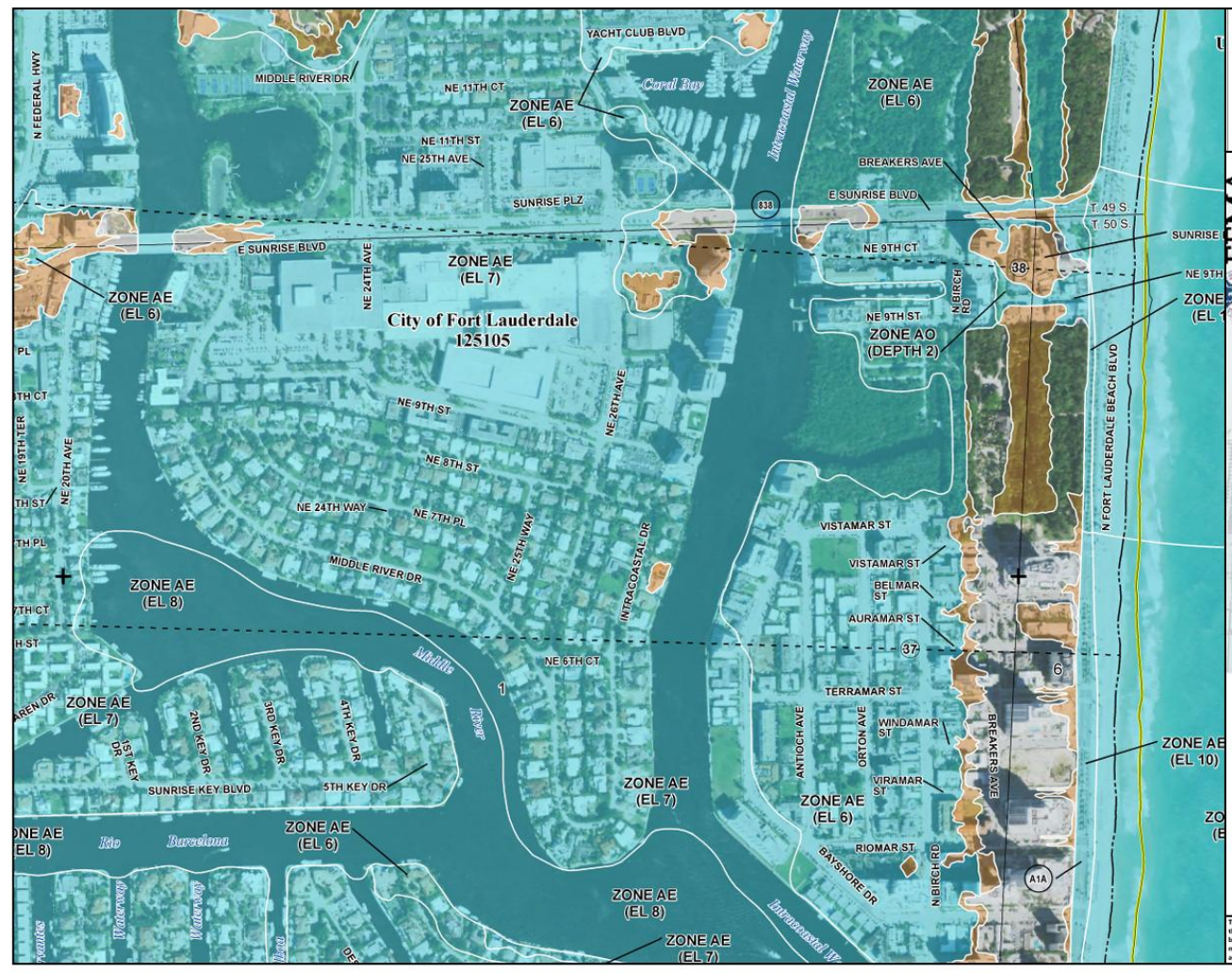
**NATIONAL FLOOD INSURANCE PROGRAM**  
**PANEL 0388H**  
**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**BROWARD COUNTY, FLORIDA**  
**AND INCORPORATED AREAS**


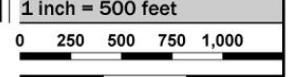
**PANEL 388 OF 751**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)  
 COMMUNITY NUMBER PANEL SUFFIX  
 BROWARD COUNTY 12010 0388  
 FORT LAUDERDALE, CITY OF 12510 0388  
 WILTON MANORS, CITY OF 12516 0388

NOTE: This map was released on September 20, 2014 to make a correction. This release requires no previous approval. See the Federal Emergency Management Agency website for details.  
THIS MAP INCLUDES BENEFITS OF THE COASTAL BARRIER RESOURCES SYSTEM ESTABLISHED UNDER THE COASTAL BARRIER RESOURCES ACT OF 1982 AND/OR SUBSEQUENT AMENDMENTS.  
NOTE TO USER: The Map Number shown herein should be used when filing for insurance. The Community Number shown herein should be used on insurance applications for the subject property.

**MAP NUMBER**  
**12011C0388H**  
**EFFECTIVE DATE**  
**AUGUST 18, 2014**  
 Federal Emergency Management Agency

This is an official FEMA map showing a portion of the above-referenced Flood map created from the MSC FIRMMap Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Update Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://www.fema.gov>.



  
**1 inch = 500 feet**  


**NATIONAL FLOOD INSURANCE PROGRAM**  
**FLOOD INSURANCE RATE MAP**  
**BROWARD COUNTY, FLORIDA**  
**AND INCORPORATED AREAS**  
**PANEL 388 OF 751**

Panel Contains:  
 COMMUNITY NUMBER PANEL SUFFIX  
 BROWARD COUNTY 12010 0388  
 FORT LAUDERDALE, CITY OF 12510 0388  
 WILTON MANORS, CITY OF 12516 0388

**FEMA**  
**National Flood Insurance Program**

**VERSION NUMBER**  
**2.6.3.5**  
**MAP NUMBER**  
**12011C0388H**  
**MAP REVISED**  
**JULY 31, 2024**

This is an official FEMA map showing a portion of the above-referenced Flood map created from the MSC FIRMMap Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Update Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://www.fema.gov>.

# LOMC Confusion after Flooding

## FEMA removed dozens of Camp Mystic buildings from 100-year flood map before expansion, records show

The July Fourth flood moved so quickly in the middle of the night that it caught many off guard in a county that lacked a warning system.

BY RYAN J. FOLEY, CHRISTOPHER L. KELLER AND JIM MUSTIAN, [ASSOCIATED PRESS](#)

[REPUBLIC](#) [SHARE](#)

JULY 12, 2025, 12:00 P.M. CENTRAL



Campers' belongings are seen at the Camp Mystic campgrounds on July 9 in Hunt. © Ronaldo Bolaños/The Texas Tribune

In a statement, FEMA downplayed the significance of the flood map amendments.

“Flood maps are snapshots in time designed to show minimum standards for floodplain management and the highest risk areas for flood insurance,” the agency wrote. “They are not predictions of where it will flood, and they don’t show where it has flooded before.”



NATIONAL  
FLOOD  
ASSOCIATION

EDUCATE. INFORM. COLLABORATE.

# LOMC Confusion after Flooding

INVESTIGATIONS

## New data reveals FEMA missed major flood risks at Camp Mystic

UPDATED JULY 10, 2025 · 7:17 PM ET

HEARD ON MORNING EDITION

ENVIRONMENT

### Under water: How FEMA's outdated flood maps incentivize property owners to take risks


About 75% of the nation's flood insurance maps are outdated, leaving the door open for property owners to seek their own flood mapping and appeal.

U.S.

**FEMA's flood maps often miss dangerous flash flood risks, leaving homeowners unprepared**




Page 1 of 2 | Date: October 15, 2013 | Case No.: 14-06-0062A | LOMA-OAS


**Federal Emergency Management Agency**  
 Washington, D.C. 20472

**LETTER OF MAP AMENDMENT**  
**DETERMINATION DOCUMENT (OUT AS SHOWN)**

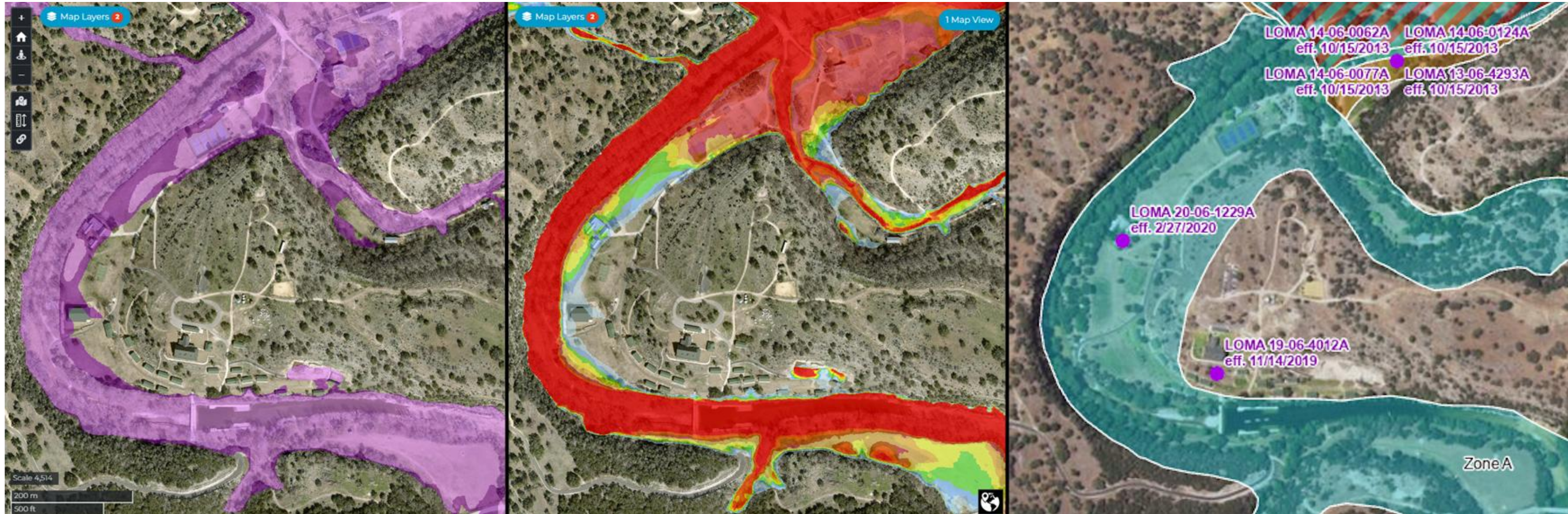
| COMMUNITY AND MAP PANEL INFORMATION  |  |             |                 | LEGAL PROPERTY DESCRIPTION  |              |  |   |                                |
|--|--|-------------|-----------------|---|--------------|--|---|--------------------------------|
| COMMUNITY  | KERR COUNTY, TEXAS<br>(Unincorporated Areas) |             |                 | A parcel of land, as described in the Deed filed for record on July 10, 1962, in the Office of the County Clerk, Kerr County, Texas |              |  |   |                                |
|  | COMMUNITY NO.: 480419                        |             |                 |   |              |  |   |                                |
| AFFECTED MAP PANEL   | NUMBER: 48265C0450F                          |             |                 | APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 30.009, -99.370<br>SOURCE OF LAT & LONG: GOOGLE EARTH PRO<br>DATUM: NAD 83            |              |  |   |                                |
|  | DATE: 3/3/2011                               |             |                 |   |              |  |   |                                |
| FLOODING SOURCE: CYPRESS CREEK; EDMUNSON CREEK; SOUTH FORK GUADALUPE RIVER |  |             |                 |   |              |  |   |                                |
| DETERMINATION  |  |             |                 |   |              |  |   |                                |
| LOT  | BLOCK/SECTION                                | SUBDIVISION | STREET          | OUTCOME<br>WHAT IS OUTSIDE OF THE SFHA  | FLOOD ZONE   | 1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88) | LOWEST ADJACENT GRADE ELEVATION (NAVD 88) | LOWEST LOT ELEVATION (NAVD 88) |
| --   | --   | --          | 2689 Highway 39 | Structure (Building 8)  | X (unshaded) | --   | --  | --                             |

Page 1 of 3 | Date: November 14, 2019 | Case No.: 19-06-4012A | LOMA


**Federal Emergency Management Agency**  
 Washington, D.C. 20472

**LETTER OF MAP AMENDMENT**  
**DETERMINATION DOCUMENT (REMOVAL)**

| COMMUNITY AND MAP PANEL INFORMATION |  |             |            | LEGAL PROPERTY DESCRIPTION   |              |  |   |                                |
|-------------------------------------|--|-------------|------------|--|--------------|--|---|--------------------------------|
| COMMUNITY                           | KERR COUNTY, TEXAS<br>(Unincorporated Areas) |             |            | A parcel of land, as described in the Warranty Deed recorded in Volume 112, Pages 606, 607, and 608, in the Quit Claim Deed recorded as Document No. 75 236, in Volume 177, Pages 282 and 283, in the Warranty Deed recorded as Document No. 796746, in Volume 228, Pages 186 through 191, in the Warranty Deed recorded as Document No. 804411, in Volume 238, Pages 417 through 422, in the Warranty Deed recorded as Document No. 820840, in Volume 257, Pages 480 through 483, and in the Warranty Deed recorded as Document No. 8798, in Volume 452, Pages 237 through 240, all in the Office of the County Clerk, Kerr County, Texas |              |  |   |                                |
|                                     | COMMUNITY NO.: 480419                        |             |            |  |              |  |   |                                |
| AFFECTED MAP PANEL                  | NUMBER: 48265C0450F                          |             |            | APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 30.004506, -99.372993<br>SOURCE OF LAT & LONG: LOMA LOGIC<br>DATUM: NAD 83   |              |  |   |                                |
|                                     | DATE: 3/3/2011                               |             |            |  |              |  |   |                                |
| FLOODING SOURCE: CYPRESS CREEK      |  |             |            |  |              |  |   |                                |
| DETERMINATION                       |  |             |            |  |              |  |   |                                |
| LOT                                 | BLOCK/SECTION                                | SUBDIVISION | STREET     | OUTCOME<br>WHAT IS REMOVED FROM THE SFHA   | FLOOD ZONE   | 1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88) | LOWEST ADJACENT GRADE ELEVATION (NAVD 88) | LOWEST LOT ELEVATION (NAVD 88) |
| --                                  | --   | --          | 2689 TX-39 | Structure (Building 10)  | X (unshaded) | --   | 1877.2 feet                               | --                             |

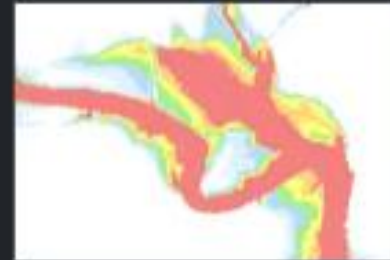


Flood Extent (1% And 0.2%)



- High risk (1% flood zone)
- Low to moderate risk (0.2% flood zone)

Flood Depth (1%)



- |   |  |
|---|--|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: lightblue; margin-right: 5px;"></span> ≤ 1 foot  | <span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; margin-right: 5px;"></span> > 3 to 4 feet |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: blue; margin-right: 5px;"></span> > 1 to 2 feet  | <span style="display: inline-block; width: 15px; height: 15px; background-color: orange; margin-right: 5px;"></span> > 4 to 5 feet |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: green; margin-right: 5px;"></span> > 2 to 3 feet | <span style="display: inline-block; width: 15px; height: 15px; background-color: red; margin-right: 5px;"></span> > 5 feet         |

Flood Depth (0.2%)



- |   |  |
|---|--|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: lightblue; margin-right: 5px;"></span> ≤ 1 foot  | <span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; margin-right: 5px;"></span> > 3 to 4 feet |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: blue; margin-right: 5px;"></span> > 1 to 2 feet  | <span style="display: inline-block; width: 15px; height: 15px; background-color: orange; margin-right: 5px;"></span> > 4 to 5 feet |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: green; margin-right: 5px;"></span> > 2 to 3 feet | <span style="display: inline-block; width: 15px; height: 15px; background-color: red; margin-right: 5px;"></span> > 5 feet         |

- Flood Hazard Zones
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Area with Risk Due to Levee

# Flood Zone Determinations



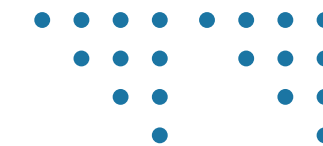
- **What it is...a Compliance Document**

- PURPOSE OF FORM: The SFHDF has been designated to facilitate compliance with the flood insurance purchase requirements of the National Flood Insurance Reform Act of 1994.

- **What it is not...a Due Diligence Document**

- This flood determination is provided solely for the use and benefit of the entity name in Section 1, Box 1 to comply with the 1994 Flood Insurance Reform Act and may not be used or relied upon by any other entity or individual for any purpose, including, but not limited to deciding whether to purchase a property or determining the value of a property.

# Common Misconceptions



- *All Flood Zone Determination providers use the same FIRMs. So, there should never be a discrepancy between vendors.*
- *An Elevation Certificate is an official FEMA document. So, it can be used to overturn a Flood Zone Determination, right?*
- *The surveyor/engineer or appraiser says that the structure is not affected by the SFHA. So, you should be able to revise the determination.*

# Elevation Certificates, LOMCs, & Mandatory Purchase

## Requirement Removal

### Community Perspective

- Compliance with local, state, and federal floodplain management ordinances.

### Property Owner Perspective

- Better understand flood risk
- Mitigate
- LOMCs



Federal Emergency Management Agency

Washington, D.C. 20472

### ADDITIONAL INFORMATION REGARDING LETTERS OF MAP AMENDMENT

When making determinations on requests for Letters of Map Amendment (LOMAs), the Department of Homeland Security's Federal Emergency Management Agency (FEMA) bases its determination on the flood hazard information available at the time of the determination. Requesters should be aware that flood conditions may change or new information may be generated that would supersede FEMA's determination. In such cases, the community will be informed by letter.

Requesters also should be aware that removal of a property (parcel of land or structure) from the Special Flood Hazard Area (SFHA) means FEMA has determined the property is not subject to inundation by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This does not mean the property is not subject to other flood hazards. The property could be inundated by a flood with a magnitude greater than the base flood or by localized flooding not shown on the effective National Flood Insurance Program (NFIP) map.


The effect of a LOMA is it removes the Federal requirement for the lender to require flood insurance coverage for the property described. The LOMA is *not* a waiver of the condition that the property owner maintain flood insurance coverage for the property. *Only* the lender can waive the flood insurance purchase requirement because the lender imposed the requirement. *The property owner must request and receive a written waiver from the lender before canceling the policy.* The lender may determine, on its own as a business decision, that it wishes to continue the flood insurance requirement to protect its financial risk on the loan.

The LOMA provides FEMA's comment on the mandatory flood insurance requirements of the NFIP as they apply to a particular property. A LOMA is not a building permit, nor should it be construed as such. Any development, new construction, or substantial improvement of a property impacted by a LOMA must comply with all applicable State and local criteria and other Federal criteria.


Even though structures are not located in an SFHA, as mentioned above, they could be flooded by a flooding event with a greater magnitude than the base flood. In fact, more than 25 percent of all claims paid by the NFIP are for policies for structures located outside the SFHA in Zones B, C, X (shaded), or X (unshaded). More than one-fourth of all policies purchased under the NFIP protect structures located in these zones. The risk to structures located outside SFHAs is just not as great as the risk to structures located in SFHAs. Finally, approximately 90 percent of all federally declared disasters are caused by flooding, and homeowners insurance does not provide financial protection from this flooding. Therefore, FEMA encourages the widest possible coverage under the NFIP.

LOMAs are based on minimum criteria established by the NFIP. State, county, and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction in the SFHA. If a State, county, or community has adopted more restrictive and comprehensive floodplain management criteria, these criteria take precedence over the minimum Federal criteria.


Page 1 of 2 | Date: October 15, 2013 | Case No.: 14-06-0062A | LOMA-OAS


**Federal Emergency Management Agency**  
 Washington, D.C. 20472


**LETTER OF MAP AMENDMENT**  
**DETERMINATION DOCUMENT (OUT AS SHOWN)**



| COMMUNITY AND MAP PANEL INFORMATION  |  | LEGAL PROPERTY DESCRIPTION  |                 |   |              |  |   |                                |
|--|--|---|-----------------|---|--------------|--|---|--------------------------------|
| COMMUNITY  | KERR COUNTY, TEXAS<br>(Unincorporated Areas) | A parcel of land, as described in the Deed filed for record on July 10, 1962, in the Office of the County Clerk, Kerr County, Texas |                 |   |              |  |   |                                |
|  | COMMUNITY NO.: 480419                        |   |                 |   |              |  |   |                                |
| AFFECTED MAP PANEL   | NUMBER: 48265C0450F                          |   |                 |   |              |  |   |                                |
|  | DATE: 3/3/2011                               |   |                 |   |              |  |   |                                |
| FLOODING SOURCE: CYPRESS CREEK; EDMUNSON CREEK; SOUTH FORK GUADALUPE RIVER   |  | APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 30.009, -99.370<br>SOURCE OF LAT & LONG: GOOGLE EARTH PRO DATUM: NAD 83               |                 |   |              |  |   |                                |
| DETERMINATION  |  |   |                 |   |              |  |   |                                |
| LOT  | BLOCK/SECTION                                | SUBDIVISION   | STREET          | OUTCOME<br>WHAT IS OUTSIDE OF THE SFHA  | FLOOD ZONE   | 1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88) | LOWEST ADJACENT GRADE ELEVATION (NAVD 88) | LOWEST LOT ELEVATION (NAVD 88) |
| --   | --   | --  | 2689 Highway 39 | Structure (Building 8)  | X (unshaded) | --   | --  | --                             |
| Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).   |  |   |                 |   |              |  |   |                                |
| ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)  |  |   |                 |   |              |  |   |                                |
| PORTIONS REMAIN IN THE FLOODWAY  |  |   |                 |   |              |  |   |                                |
| <p>This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the structure(s) on the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). The subject property is correctly shown outside the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. If the policy has been written using an incorrect zone, it can be endorsed to correct the zone for the current policy year and one prior policy term. Please contact the insurance agent or company involved to request endorsement of the policy. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.</p> <p>This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4805.</p> |  |   |                 |   |              |  |   |                                |
|  |  |   |                 | <br>Luis Rodriguez, P.E., Chief<br>Engineering Management Branch<br>Federal Insurance and Mitigation Administration |              |  |   |                                |



Page 1 of 9 | Date: August 11, 2023 | Case No.: 23-04-4754A | LOMA-DEN


**Federal Emergency Management Agency**  
 Washington, D.C. 20472

**LETTER OF MAP AMENDMENT**  
**DETERMINATION DOCUMENT (NON-REMOVAL)**

| COMMUNITY AND MAP PANEL INFORMATION  |   | LEGAL PROPERTY DESCRIPTION  |                        |  |            |  |   |                                |
|--|---|---|------------------------|--|------------|--|---|--------------------------------|
| COMMUNITY  | BALDWIN COUNTY, ALABAMA<br>(Unincorporated Areas) | Units 4001 through 4015, 5001 through 5008, 6001 through 6037, 7001 through 7014, and 7016 through 7029, The Rookery 3, as shown on the Plat recorded in Book 26, Pages 116 and 117, in the Office of the Judge of Probate, Baldwin County, Alabama |                        |  |            |  |   |                                |
|  | COMMUNITY NO.: 015000                             |   |                        |  |            |  |   |                                |
| AFFECTED MAP PANEL   | NUMBER: 01003C1031M                               |   |                        |  |            |  |   |                                |
|  | DATE: 4/19/2019                                   |   |                        |  |            |  |   |                                |
| FLOODING SOURCE: BON SECOUR BAY; GULF OF MEXICO  |   | APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 30.237439, -87.923156<br>SOURCE OF LAT & LONG: LOMA LOGIC DATUM: NAD 83   |                        |  |            |  |   |                                |
| DETERMINATION  |   |   |                        |  |            |  |   |                                |
| LOT  | BLOCK/SECTION                                     | SUBDIVISION   | STREET                 | OUTCOME<br>WHAT IS NOT REMOVED FROM THE SFHA   | FLOOD ZONE | 1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88) | LOWEST ADJACENT GRADE ELEVATION (NAVD 88) | LOWEST LOT ELEVATION (NAVD 88) |
| --   | --  | The Rookery 3   | 5781 State Highway 180 | Structure (Unit 4001)  | AE         | 10.0 feet                                  | 7.0 feet                                  | --                             |
| Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).   |   |   |                        |  |            |  |   |                                |
| ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)  |   |   |                        |  |            |  |   |                                |
| DETERMINATION TABLE (CONTINUED)  |   |   |                        |  |            |  |   |                                |
| <p>This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the structure(s) on the property(ies) is/are located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). Therefore, flood insurance is required for the property described above. The lowest adjacent grade elevation to a structure must be at or above the Base Flood Elevation for a structure to be outside of the SFHA.</p> <p>This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination and information regarding your options for obtaining a Letter of Map Amendment. If you have any questions about this document, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-8426.</p> |   |   |                        |  |            |  |   |                                |
|  |   |   |                        | <br>Patrick "Rick" F. Sacibit, P.E., Branch Chief<br>Engineering Services Branch<br>Federal Insurance and Mitigation Administration |            |  |   |                                |

| Page 1 of 5   | Date: April 27, 2020                                  | Case No.: 20-06-1828A   | LOMR-F              |   |               |  |   |   |
|---|---|---|---------------------|---|---------------|--|---|---|
|  <b>Federal Emergency Management Agency</b><br>Washington, D.C. 20472  |   |   |                     |   |               |  |   |   |
| <b>LETTER OF MAP REVISION BASED ON FILL DETERMINATION DOCUMENT (REMOVAL)</b>  |   |   |                     |   |               |  |   |   |
| COMMUNITY AND MAP PANEL INFORMATION   |   | LEGAL PROPERTY DESCRIPTION  |                     |   |               |  |   |   |
| COMMUNITY   | CITY OF YOUNGVILLE,<br>LAFAYETTE PARISH,<br>LOUISIANA | Lots 9, 11, 15, 16, 83, 91, 97, 101, 127, 143, 144, 145, and 158 through 161, Southlake Plantation, as shown on the Plat recorded as File No. 2002-00013827, in the Office of the Recorder, Lafayette Parish, Louisiana |                     |   |               |  |   |   |
|   | COMMUNITY NO.: 220358                                 |   |                     |   |               |  |   |   |
| AFFECTED MAP PANEL  | NUMBER: 22055C0250J<br>DATE: 12/21/2018               |   |                     |   |               |  |   |   |
| FLOODING SOURCE: ANSELM COULEE  |   | APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 30.105688, -92.029857<br>SOURCE OF LAT & LONG: LOMA LOGIC<br>DATUM: NAD 83  |                     |   |               |  |   |   |
| <b>DETERMINATION</b>  |   |   |                     |   |               |  |   |   |
| LOT   | BLOCK/SECTION   | SUBDIVISION   | STREET              | OUTCOME<br>WHAT IS<br>REMOVED FROM<br>THE SFHA  | FLOOD<br>ZONE | 1% ANNUAL<br>CHANCE<br>FLOOD<br>ELEVATION<br>(NAVD 88) | LOWEST<br>ADJACENT<br>GRADE<br>ELEVATION<br>(NAVD 88) | LOWEST<br>LOT<br>ELEVATION<br>(NAVD 88) |
| 101   | --  | Southlake<br>Plantation   | 206 Beaufort Circle | Structure   | X<br>(shaded) | --   | 22.3 feet   | --                                      |
| Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).  |   |   |                     | ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.) |               |  |   |   |
| DETERMINATION TABLE (CONTINUED)   |   | STATE LOCAL CONSIDERATIONS  |                     | PORTIONS REMAIN IN THE SFHA<br>SUPERSEDES PREVIOUS DETERMINATION  |               |  |   |   |
| <p>This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Revision based on Fill for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the structure(s) on the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document revises the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.</p> <p>This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, Engineering Library, 3601 Eisenhower Ave Ste 500, Alexandria, VA 22304-6426.</p> |   |   |                     |   |               |  |   |   |
| <br>Luis V. Rodriguez, P.E., Director<br>Engineering and Modeling Division<br>Federal Insurance and Mitigation Administration   |   |   |                     |   |               |  |   |   |

| Page 1 of 3  | Follows Conditional No.: 20-04-0705C         | Date: August 16, 2022   | Case No.: 22-04-4688A | LOMR-F   |                            |  |   |   |
|--|--|---|-----------------------|--|----------------------------|--|---|---|
|  <b>Federal Emergency Management Agency</b><br>Washington, D.C. 20472   |  |   |                       |  |                            |  |   |   |
| <b>LETTER OF MAP REVISION BASED ON FILL DETERMINATION DOCUMENT (REMOVAL)</b>   |  |   |                       |  |                            |  |   |   |
| COMMUNITY AND MAP PANEL INFORMATION  |  | LEGAL PROPERTY DESCRIPTION  |                       |  |                            |  |   |   |
| COMMUNITY  | CITY OF PALM BAY, BREVARD<br>COUNTY, FLORIDA | Lots 6 through 33, Block J; Lots 59 through 62, Block K; Lots 1 through 14, Block L; Lots 1 through 24, Block M; Lots 1 through 6, Block N; Lots 1 through 31, Block Q; Lots 1 through 18, Block R; and Lots 1 through 7, Block S, St Johns Preserve, Phase 3, as shown on the Plat recorded as File No. 2022109616, in Plat Book 71, Pages 54 through 58, in the Office of the Clerk of the Circuit Court, Brevard County, Florida |                       |  |                            |  |   |   |
|  | COMMUNITY NO.: 120404                        |   |                       |  |                            |  |   |   |
| AFFECTED MAP PANEL   | NUMBER: 12009C0590G<br>DATE: 3/17/2014       |   |                       |  |                            |  |   |   |
| FLOODING SOURCE: ST. JOHN'S RIVER  |  | APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 28.009922, -80.742641<br>SOURCE OF LAT & LONG: LOMA LOGIC<br>DATUM: NAD 83  |                       |  |                            |  |   |   |
| <b>DETERMINATION</b>   |  |   |                       |  |                            |  |   |   |
| LOT  | BLOCK/SECTION                                | SUBDIVISION   | STREET                | OUTCOME<br>WHAT IS<br>REMOVED FROM<br>THE SFHA | FLOOD<br>ZONE              | 1% ANNUAL<br>CHANCE<br>FLOOD<br>ELEVATION<br>(NAVD 88) | LOWEST<br>ADJACENT<br>GRADE<br>ELEVATION<br>(NAVD 88) | LOWEST<br>LOT<br>ELEVATION<br>(NAVD 88) |
| 6-33   | J  | St Johns<br>Preserve,<br>Phase 3  | --                    | Property                                       | X<br>(unshaded)            | --   | --  | 20.7 feet                               |
| Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).   |  | ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)   |                       |  |                            |  |   |   |
| DETERMINATION TABLE (CONTINUED)  |  | FILL RECOMMENDATION   |                       |  | STATE LOCAL CONSIDERATIONS |  |   |   |
| <p>This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Revision based on Fill for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document revises the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan.</p> <p>This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426.</p> |  |   |                       |  |                            |  |   |   |
| <br>Patrick "Rick" F. Sacbibit, P.E., Branch Chief<br>Engineering Services Branch<br>Federal Insurance and Mitigation Administration  |  |   |                       |  |                            |  |   |   |



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# MAPPING THE PAST, CONSIDERING THE FUTURE

Analyzing FEMA FIRMs vs. Predictive Flood Models



# FEMA FIRMs: The Regulatory Baseline

## On-Ground Field Studies

FEMA FIRMs are built on engineering-level data derived from direct on-ground physical studies/analysis.

- ✓ **Physical Surveys:** Real-world cross-sectional surveys of channels and structural elements.
- ✓ **Hydrologic Analysis:** Determination of peak flow rates based on local stream gauges and physical basin characteristics.
- ✓ **Hydraulic Modeling:** 1D/2D studies that establish Base Flood Elevations (BFEs) for specific reaches.
- ✓ **Regulatory Mandate:** The official standard for building codes and insurance requirements under the NFIP.



# The FEMA FIRM Methodology



## Historical Foundation

Relies heavily on historic flood events and tidal and stream gauge records to define the 1% annual chance floodplain (SFHA) and associated BFE.



## Binary Risk

Creates a strict "In or Out" boundary. This determines legal requirements for flood insurance and floodplain management but lacks risk nuance.



## Update Cycle

Significant effort for "Engineering Level" accuracy results in slower refresh rates, often missing recent urban development.

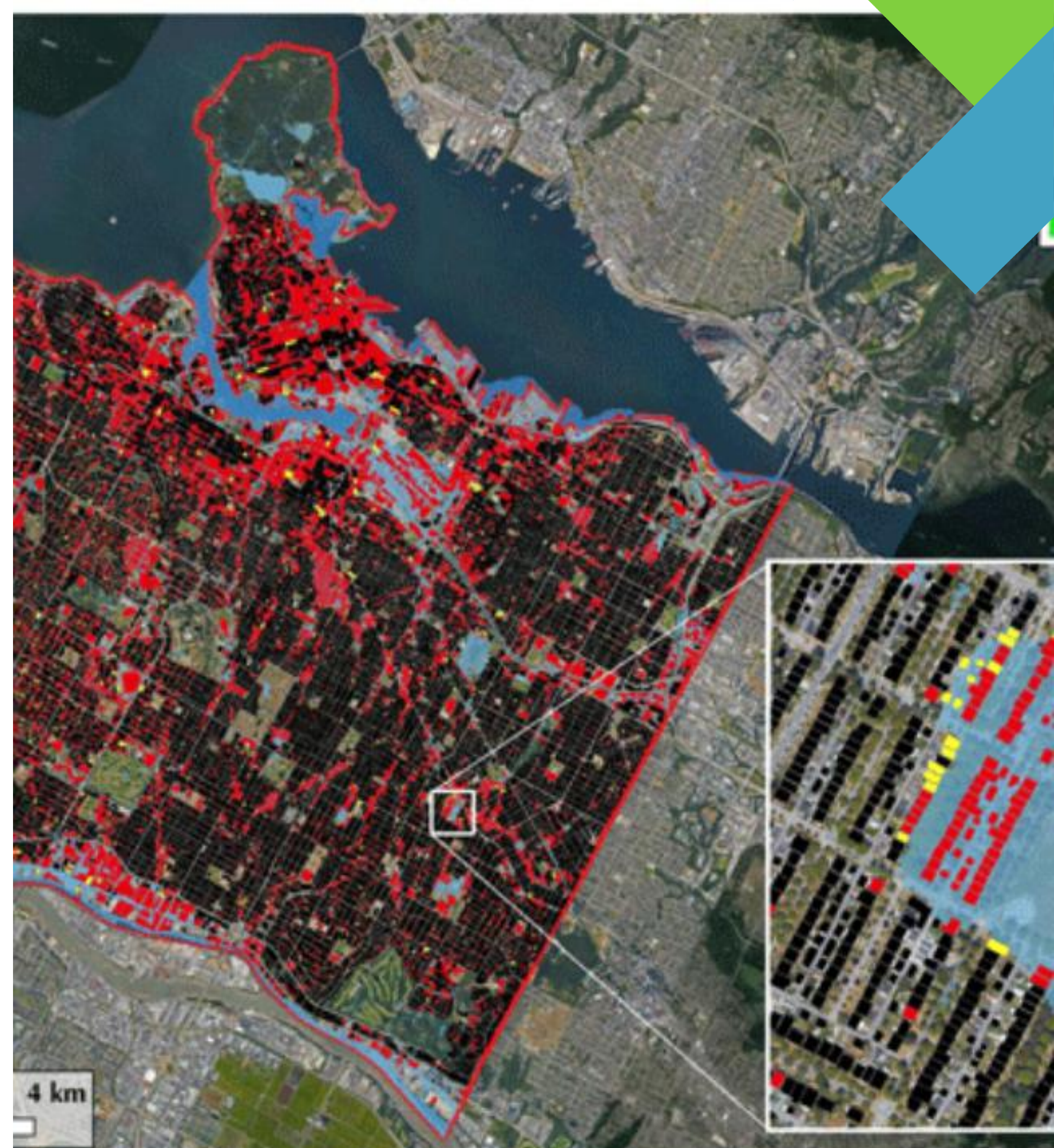
# Future Flood Risk Models: The Predictive Frontier

## Dynamic Climate Modeling

Unlike physical FIRM surveys, models like Flood Factor are predictive and simulated, not based on local on-ground engineering studies.

They utilize advanced computational hydrology to simulate rainfall and river routing over 30-year future horizons, factoring in sea-level rise and changing precipitation patterns.

**Property-Level Scalability:** Evaluates risks across 140M+ structures by substituting local ground surveys with broad, computational elevation datasets.



# Future Flood Risk Models: Agility & Accessibility

# 1 Year

Average Model Refresh Cycle

*vs. FEMA's multi-year/decadal cycle*

## Dynamic Data Ingestion

Future models ingest data at scale from various sources (USGS, NOAA, USACE) to update probabilities annually.

This provides a "Risk Gradient" (Score 1-10) rather than a binary zone, helping owners understand the severity of potential flooding beyond the regulator line.

# Unmapped Risks: Pluvial & Tributaries

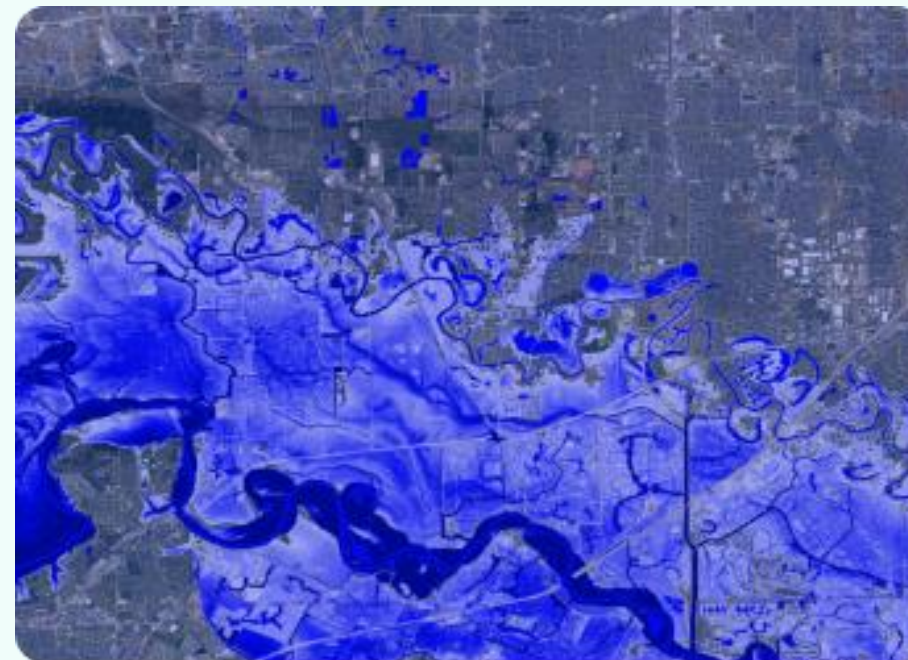
## FEMA STANDARD LIMIT



### Regulatory FIRM Scope

Focuses strictly on major riverine and coastal corridors where high-budget physical cross-sections are surveyed on-site.

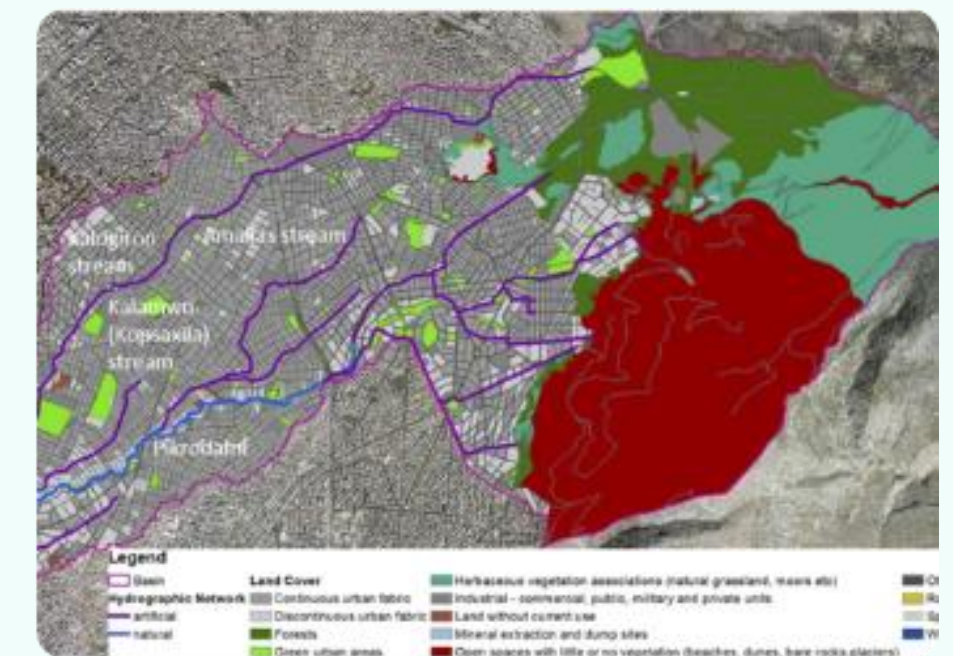
## FUTURE MODEL EXCLUSIVE



### Pluvial (Surface) Modeling

Captures intense localized rainfall accumulation and urban drainage overload missed entirely by traditional river-only studies.

## FUTURE MODEL EXCLUSIVE



### Tributary Risk Analysis

Simulates flow through small upstream unmapped catchments. Future models map risks down to individual local creeks and streams.

# Future Flood Risk Models VS. FIRM:

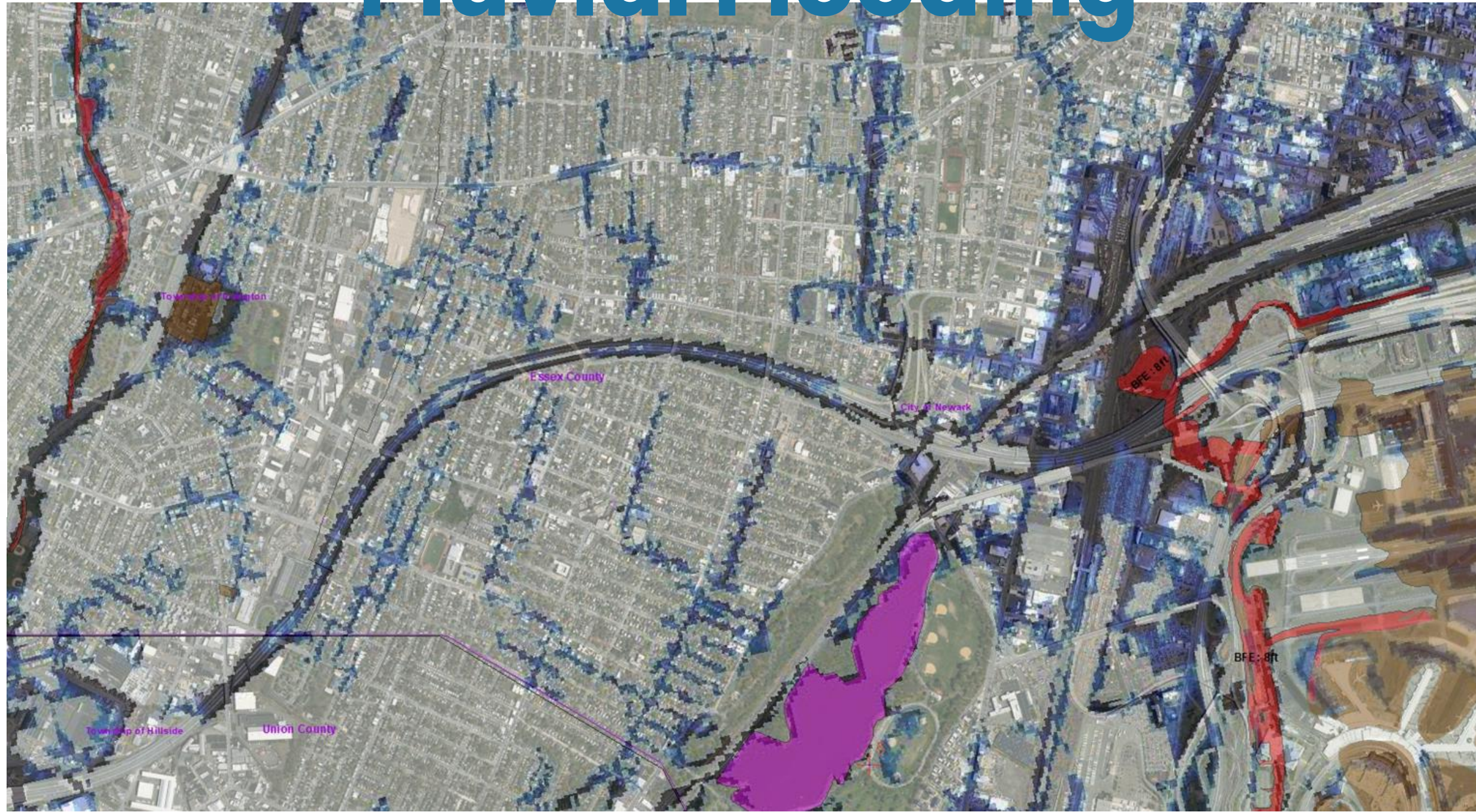
## Pluvial Flooding

| COMMUNITY      | NUMBER | PANEL | SUFFIX |
|----------------|--------|-------|--------|
| NEWARK CITY OF | 340189 | 0154  | F      |



MAP NUMBER  
34013C0154F  
EFFECTIVE DATE:  
JUNE 4, 2007

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# Future Flood Risk Models VS. FIRM:

## Tributary Flooding



COMMUNITY NUMBER PANEL SUFFIX  
BRICK, TOWNSHIP OF 345285 0203 F

MAP NUMBER  
34029C0203F

EFFECTIVE DATE  
SEPTEMBER 29, 2006



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# FEMA Engineering Data vs. Predictive Modeling

| Feature                 | FEMA FIRM (Engineering)                           | Future Models (Predictive)                     |
|-------------------------|---|--|
| <b>Data Basis</b>       | On-ground studies, local gauges, physical surveys | Simulation-based, climate-informed projections |
| <b>Risk Definition</b>  | Binary (In or Out of Zone)                        | Gradient (1-10 Risk Score)                     |
| <b>Time Horizon</b>     | Historical Record & Current Reality               | Future Conditions (15 - 30 Years)              |
| <b>Primary Goal</b>     | Regulation & Insurance Mandates                   | Public Risk Awareness & Resilience             |
| <b>Update Frequency</b> | Low (Every 5 - 10+ Years)                         | High (Annual Refresh)                          |

# Risk Rating 2.0: The Hybrid Future

FEMA is evolving insurance pricing to mirror "Individual Risk" similar to future models.

- ✓ **Beyond the Line:** Insurance rates no longer depend purely on the SFHA boundary, Flood Zone, and BFE.
- ✓ **Individual Variables:** Distance to water, first-floor elevation, and replacement cost.
- ✓ **Actuarial Accuracy:** Correcting the cross-subsidization between low-risk and high-risk properties.

Flood Probability (RR 2.0)

First Floor Elevation

Distance to Source

Replacement Cost

Factors driving individual insurance premiums under RR 2.0

# Choosing the Right Tool



## For Compliance

Use FEMA FIRMs for mortgage requirements (MPR), permitting, and minimum building standards.



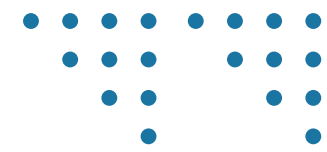
## For Resilience

Use Future Models to understand property value stability and long-term adaptation needs.



## The Synthesis

Combining engineering-level on-ground studies (FIRM) with predictive climate models offers the most robust view of risk.



# Thank you!

Should you have questions about this webinar, please reach out to us at [webinars@nfaflood.com](mailto:webinars@nfaflood.com).

