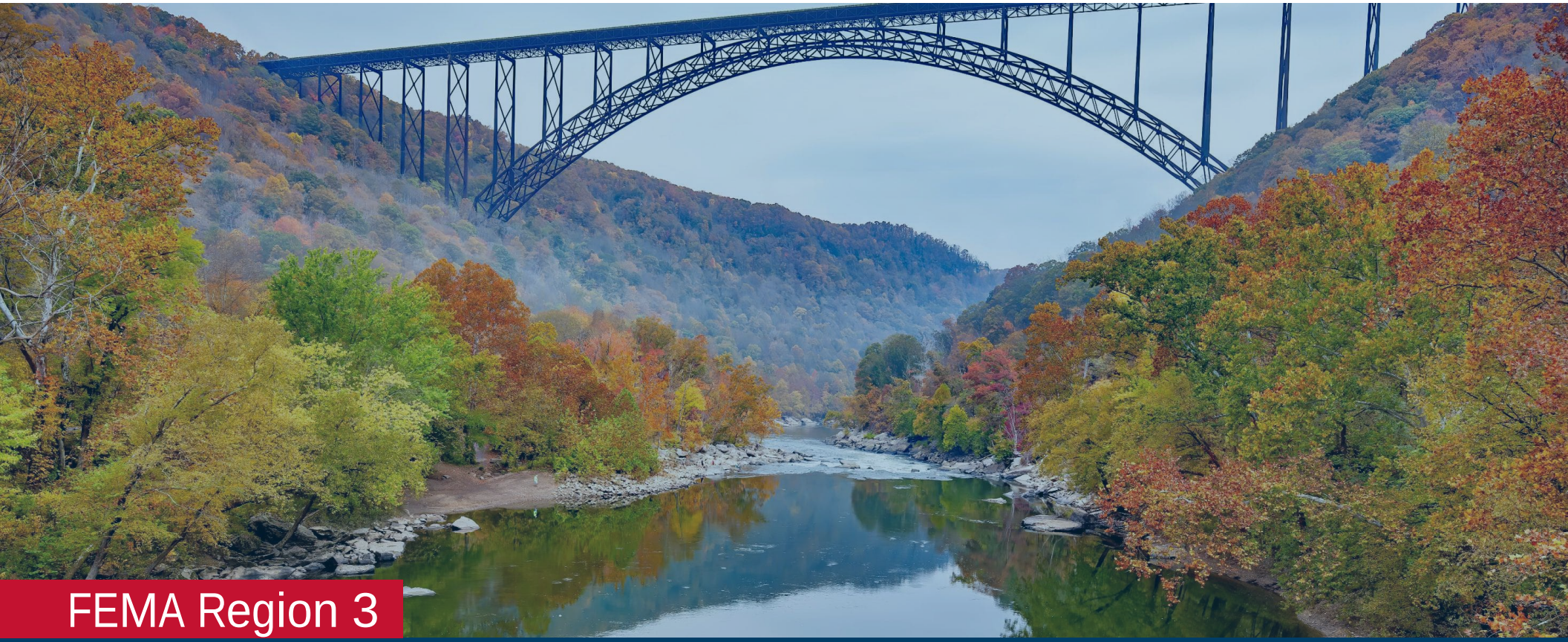


FEMA Region 3

Flood Risk Review Meeting

Wyoming County, West Virginia

May 30, 2025

FEMA

Agenda

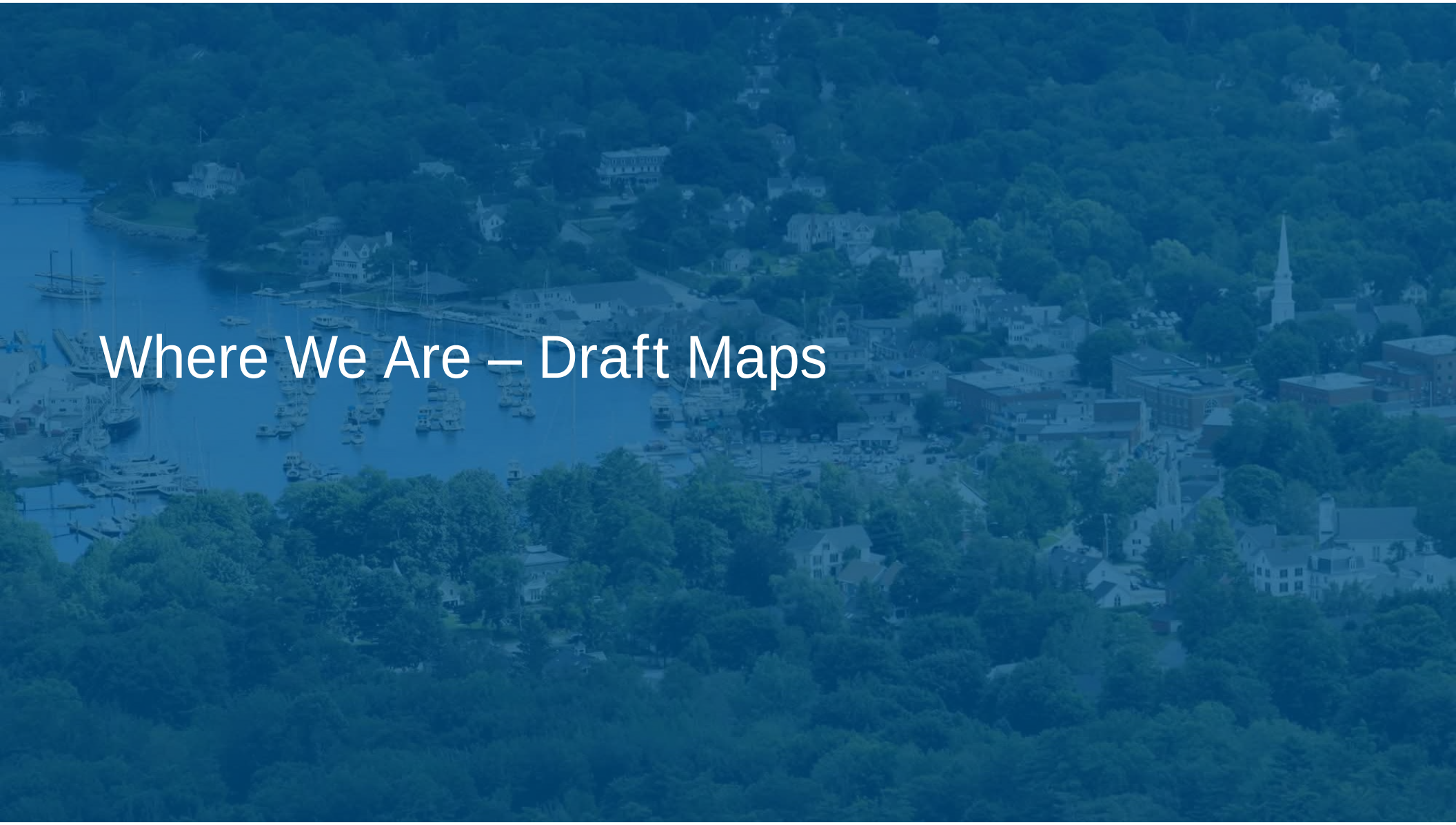
1. Welcome and Introductions
2. Where We Are - Draft Maps
3. Flood Study Update
4. Using Flood Risk Data to Reduce Risk
5. Floodplain Management
6. Discussion

FEMA

Introductions

Please Introduce Yourself

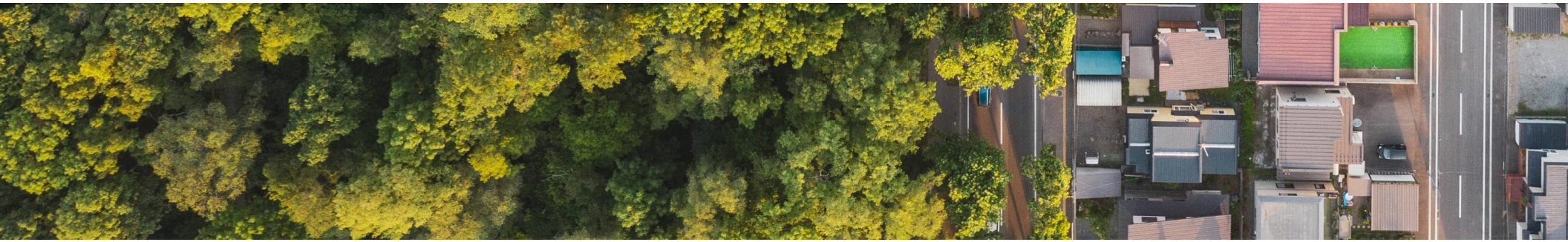
- Name
- Position
- Organization



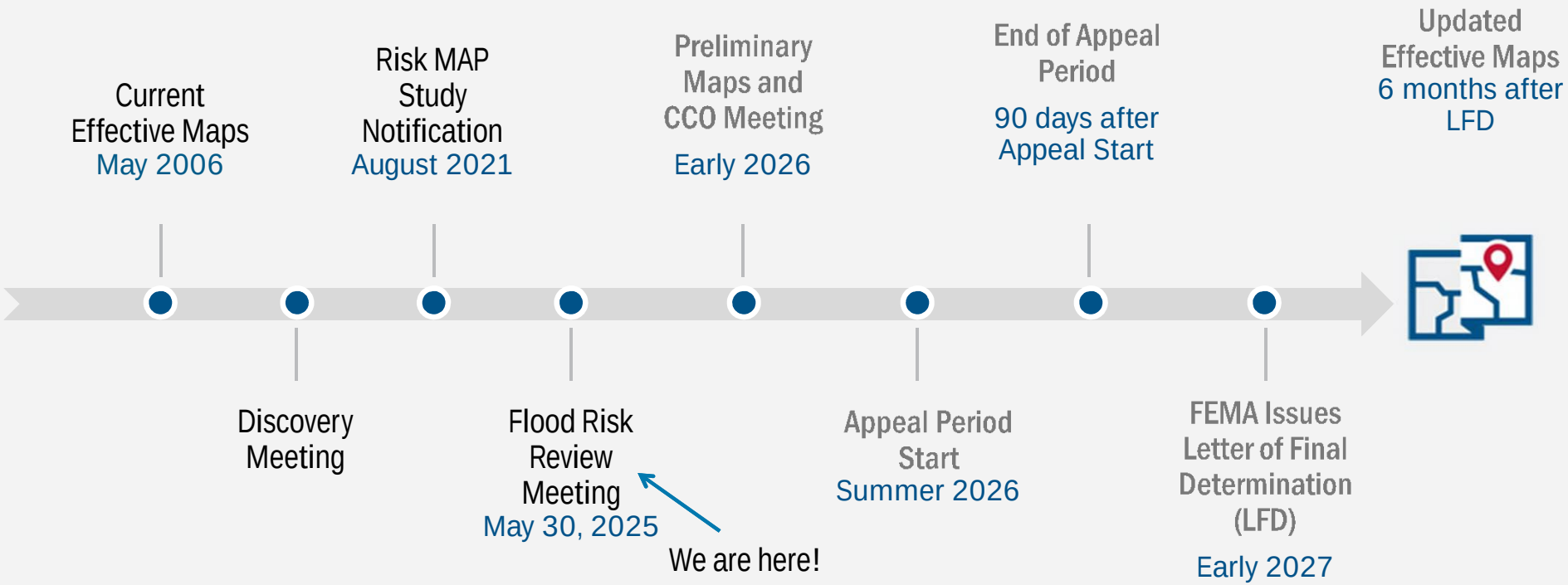
Where We Are – Draft Maps

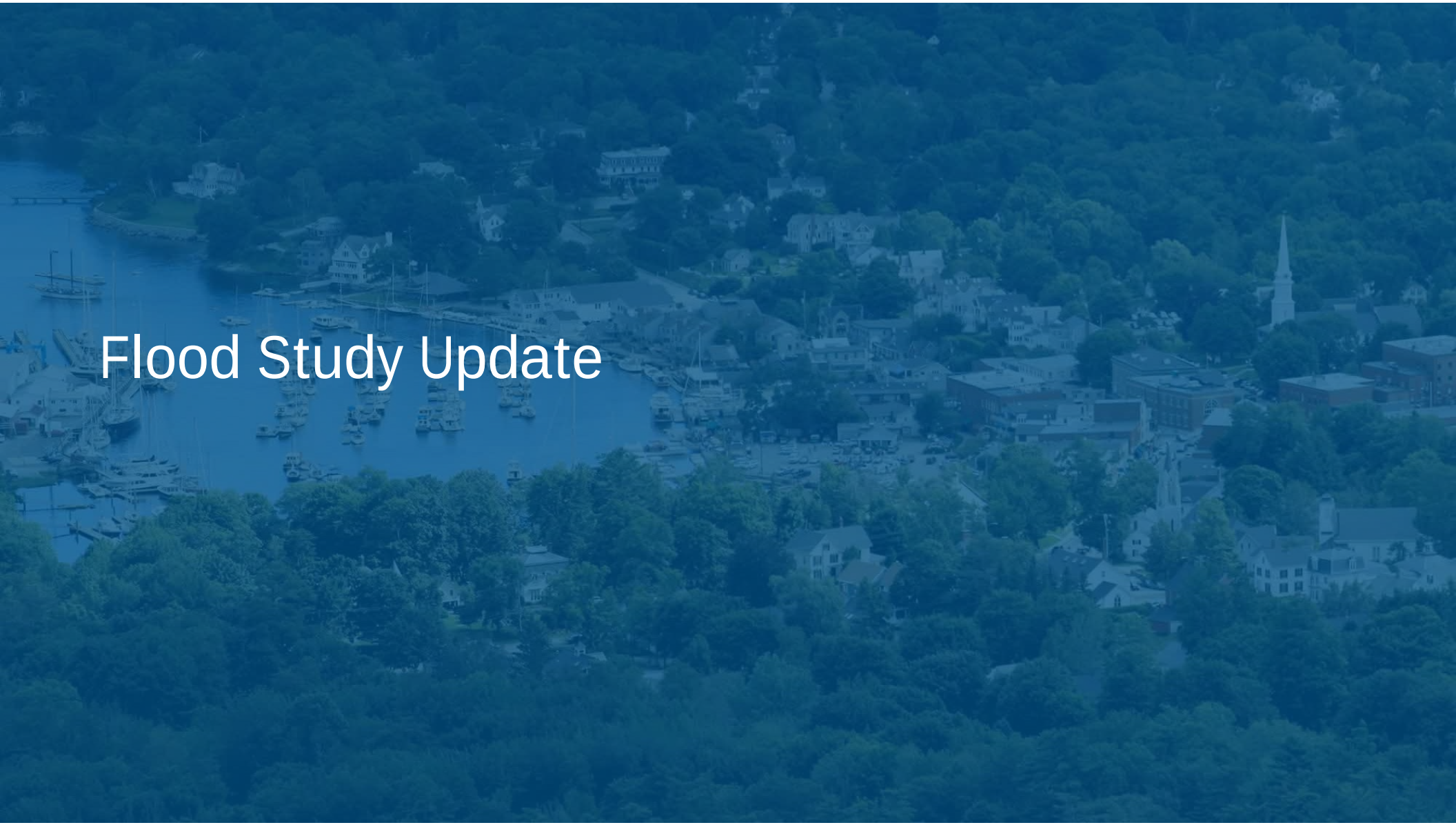
3 Reasons We Are Here Today

- To preview and discuss the draft floodplain mapping that will update the Flood Insurance Study (FIS) report and Flood Insurance Rate Map (FIRM) for Wyoming County, West Virginia
- To examine the new study areas, discuss how the analysis and mapping have changed since the previous FIRM, and discuss current and future implications for these changes
- To present a timeline of next steps



Timeline


Current Effective Maps
May 2006
Risk MAP Study Notification
August 2021
Preliminary Maps and CCO Meeting
Early 2026
End of Appeal Period
90 days after Appeal Start
Updated Effective Maps
6 months after LFD
Discovery Meeting
Flood Risk Review Meeting
May 30, 2025
We are here!
Appeal Period Start
Summer 2026
FEMA Issues Letter of Final Determination (LFD)
Early 2027

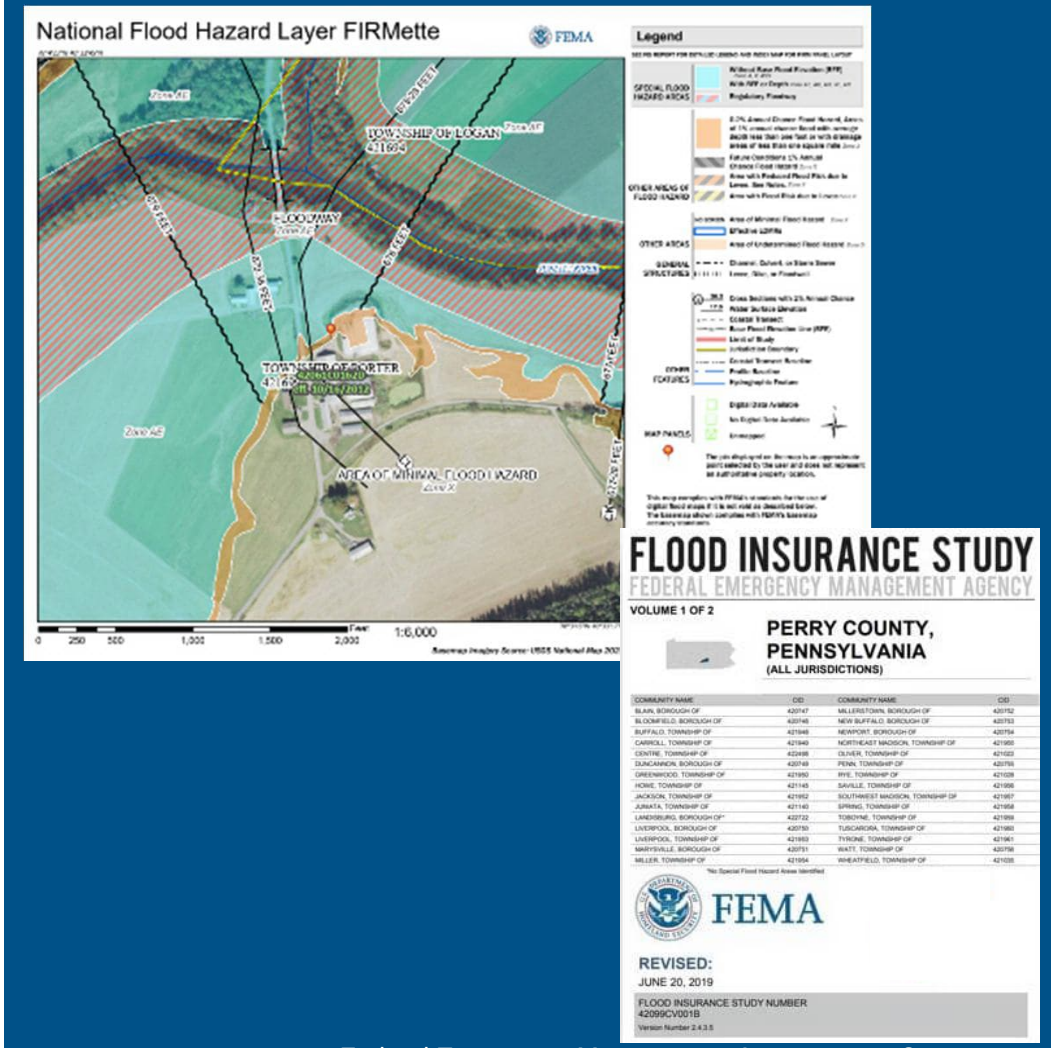


Flood Study Update

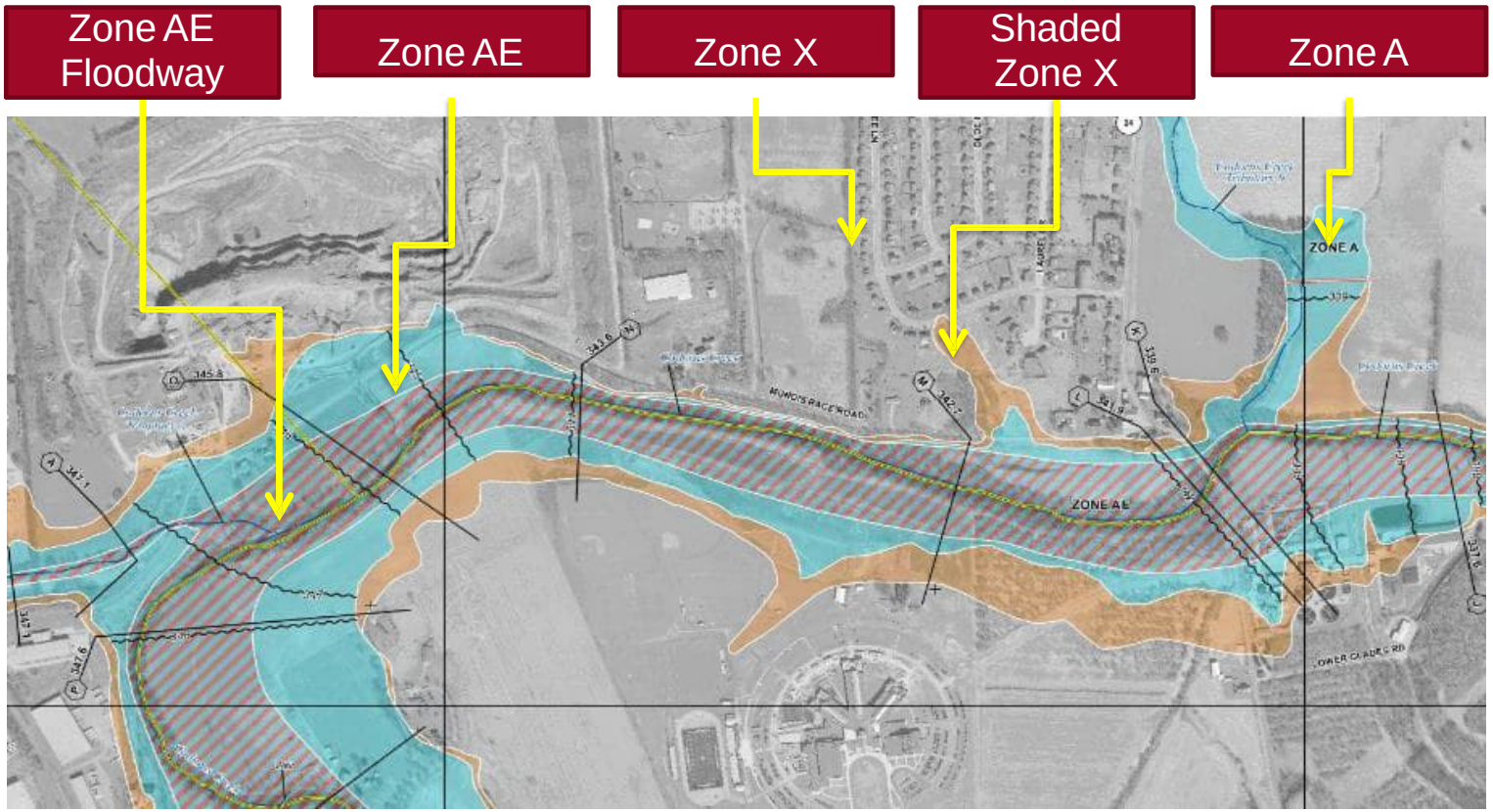
Flood Insurance Rate Maps and Studies

Key Terms:

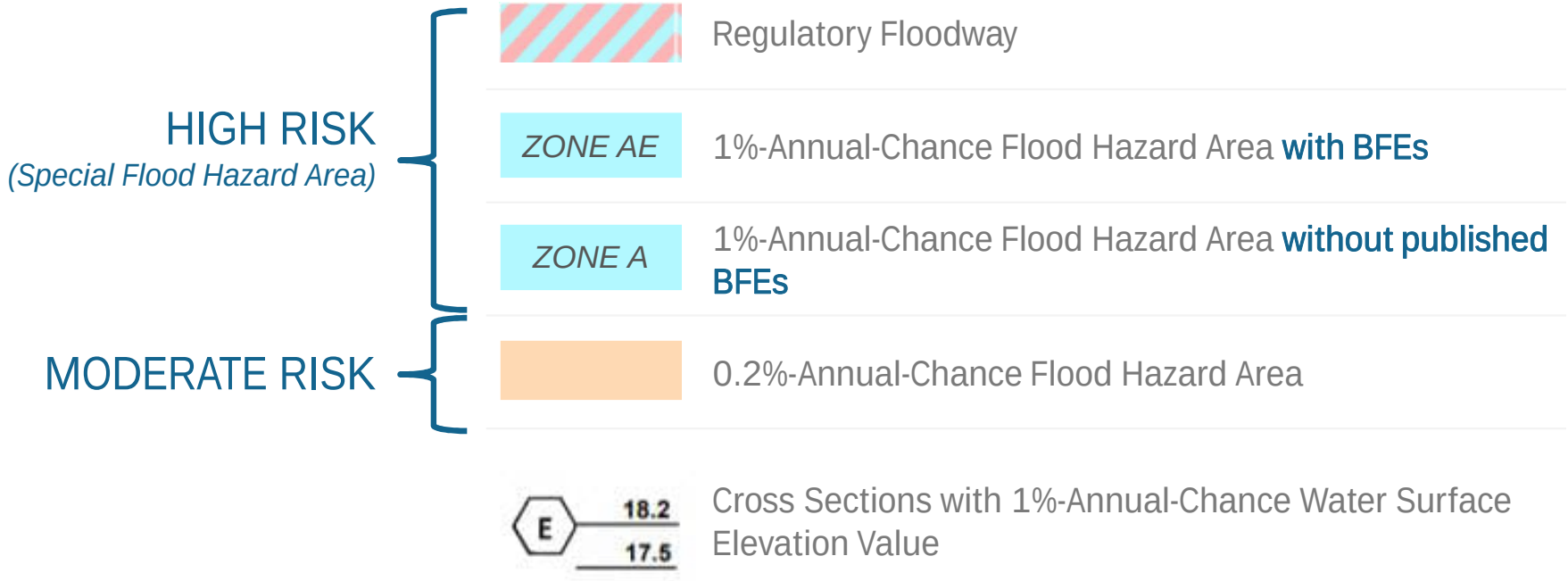
- Flood Insurance Rate Map (**FIRM**)
- Flood Insurance Study (**FIS**) Report
- Special Flood Hazard Area (**SFHA**)
- Flood Zone
- Base Flood Elevation (**BFE**)
- Regulatory Floodway
- Cross Section



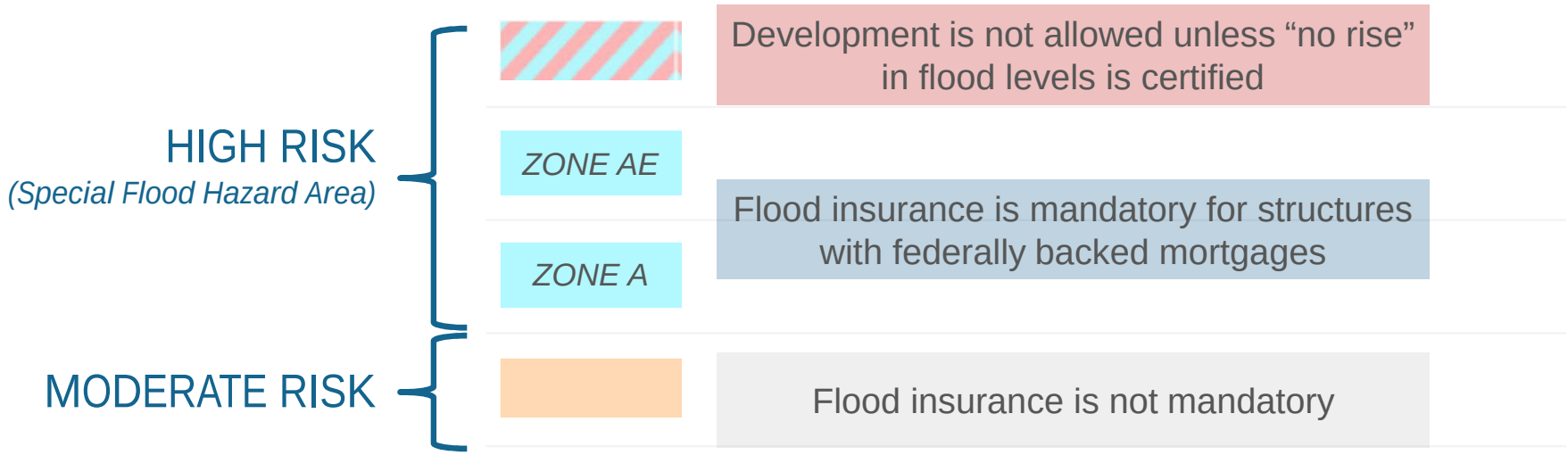
Typical FIRM Panel and Flood Zones



Floodplain Map Overview



Floodplain Map Overview



Study Overview

Revised Modeling and Mapping, including:

- Updated GIS-based regulatory products, including:
  - Updated FIRMs / GIS database / FIS report formats based on new FEMA guidelines and specifications
- Used high-resolution topographic data (for modeling and mapping)
- Detailed “Zone AE” Studies – 158 miles
- Model-backed Approximate “Zone A” Studies – 263 miles

Study Overview (continued)

Revised Modeling and Mapping, including:

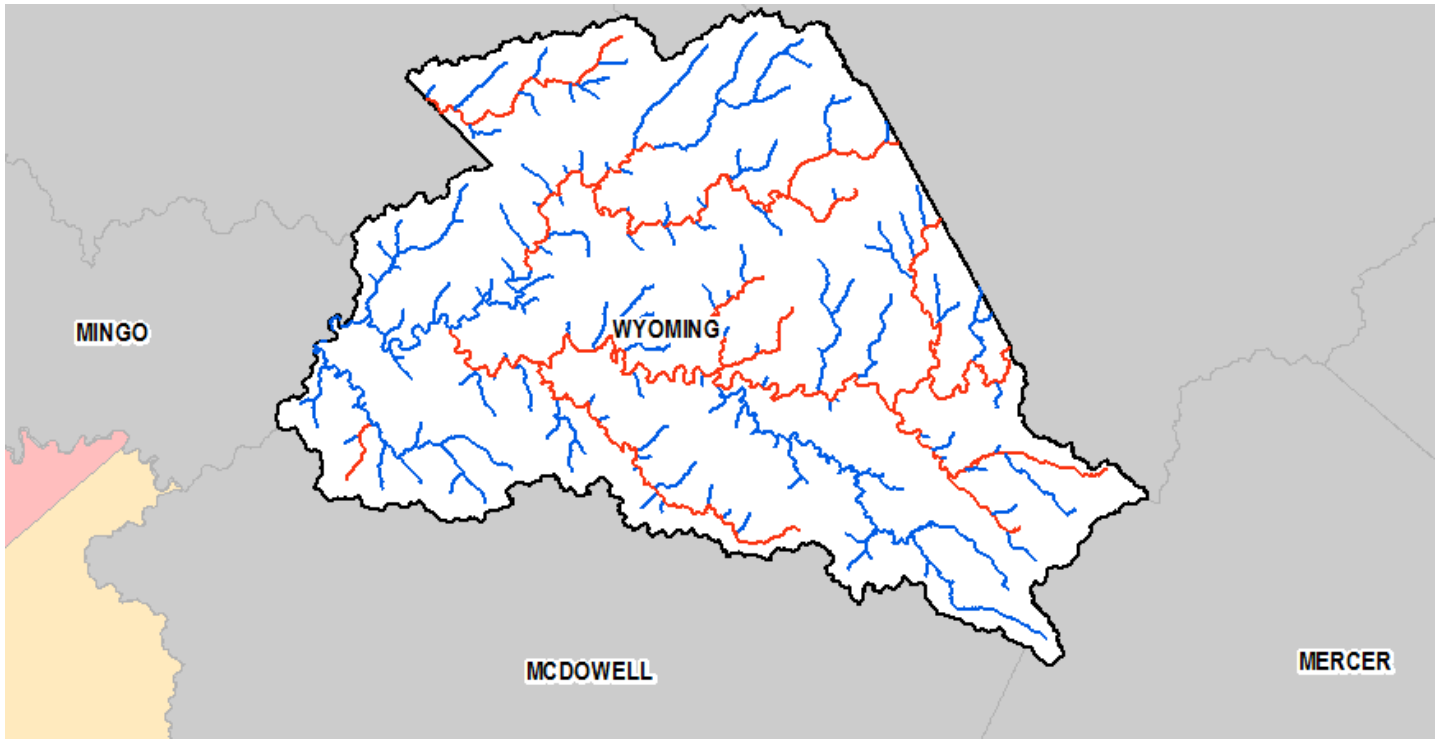
- Evaluation of Letters of Map Change (LOMCs)
  - Case-by-case results shown in a Summary of Map Actions (SOMA) that is sent to applicable communities with Preliminary Maps and Letters of Final Determination (LFDs)
  - Letters of Map Revision (LOMRs)
  - Letters of Map Amendment (LOMAs) – including rectified LOMA locations on the WV Flood Tool
- Production of associated non-regulatory flood risk

Study Area

The Project Area

Legend

- Zone AE
- Zone A
- WV County Boundaries
- Wyoming County
- Kentucky
- West Virginia
- Virginia



Topographic Data

2018-2020 LiDAR-Based Digital Elevation Model

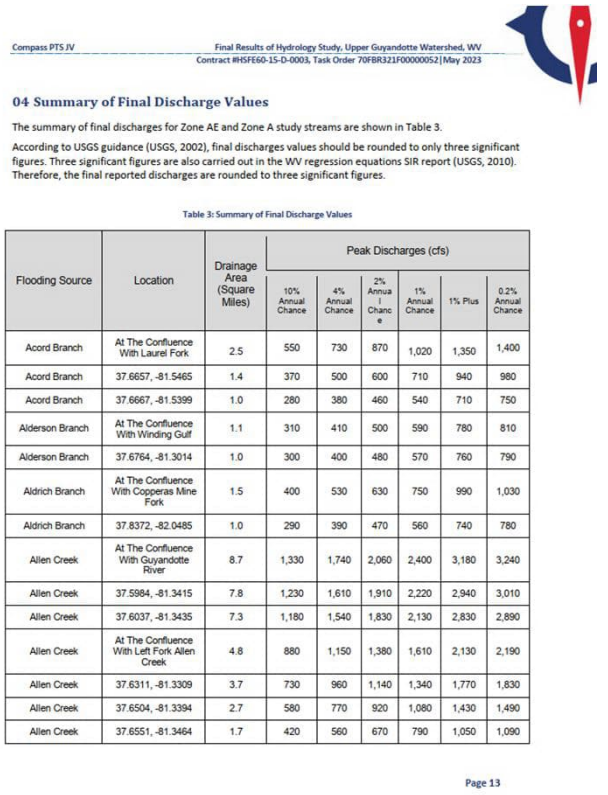
LiDAR = Light Detection and Ranging

- *Uses light pulses and GPS to survey elevation data*
- *Improves the level of detail for hydraulic modeling and floodplain delineation*

Hydrologic Analyses

- Hydrologic study methods included:
  - USGS Regression Equations
  - Regression Equations Supplemented with USGS Gage Analysis (Bulletin 17C)
  - Regulated Flow Analysis for Guyandotte River downstream of the R. D. Bailey Lake Dam
- A comprehensive **Hydrology Report** details the study methods for each reach and compares the effective and proposed discharges.
- The hydrologic study methods will also be published in the FIS Report.

Sample page from the Risk MAP Hydrology Report



04 Summary of Final Discharge Values

The summary of final discharges for Zone AE and Zone A study streams are shown in Table 3.

According to USGS guidance (USGS, 2002), final discharges values should be rounded to only three significant figures. Three significant figures are also carried out in the WV regression equations SIR report (USGS, 2010). Therefore, the final reported discharges are rounded to three significant figures.

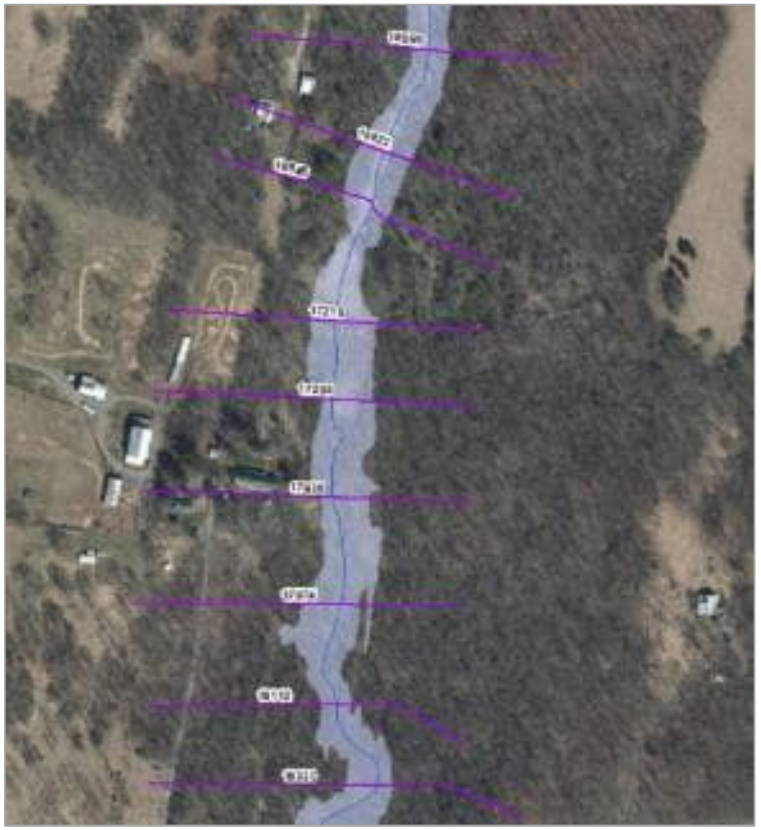
Table 3: Summary of Final Discharge Values

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharges (cfs)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	1% Plus	0.2% Annual Chance
Acord Branch	At The Confluence With Laurel Fork	2.5	550	730	870	1,020	1,350	1,400
Acord Branch	37.6657, -81.5465	1.4	370	500	600	710	940	980
Acord Branch	37.6667, -81.5399	1.0	280	380	460	540	710	750
Alderson Branch	At The Confluence With Winding Gulf	1.1	310	410	500	590	780	810
Alderson Branch	37.6764, -81.3014	1.0	300	400	480	570	760	790
Aldrich Branch	At The Confluence With Copperas Mine Fork	1.5	400	530	630	750	990	1,030
Aldrich Branch	37.8372, -82.0485	1.0	290	390	470	560	740	780
Allen Creek	At The Confluence With Guyandotte River	8.7	1,330	1,740	2,060	2,400	3,180	3,240
Allen Creek	37.5984, -81.3415	7.8	1,230	1,610	1,910	2,220	2,940	3,010
Allen Creek	37.6037, -81.3435	7.3	1,180	1,540	1,830	2,130	2,830	2,890
Allen Creek	At The Confluence With Left Fork Allen Creek	4.8	880	1,150	1,380	1,610	2,130	2,190
Allen Creek	37.6311, -81.3309	3.7	730	960	1,140	1,340	1,770	1,830
Allen Creek	37.6504, -81.3394	2.7	580	770	920	1,080	1,430	1,490
Allen Creek	37.6551, -81.3464	1.7	420	560	670	790	1,050	1,090

Hydraulic Analyses – Zone A

Approximate "Zone A" Base Level Study (263 miles)

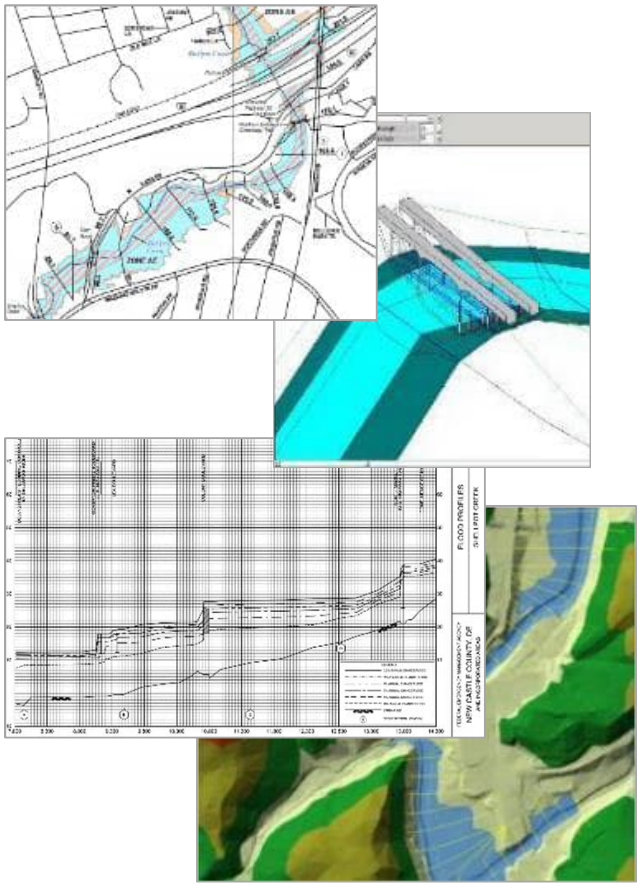
- Generally used in areas with lower development or lower development potential
- Cross sections generated from LiDAR (automated processes)
  - Does not include channel bathymetry
  - No hydraulic structures are surveyed or modeled
- FIRM **will not** show Floodway or BFEs (**but** FIRM database will include cross sections and their associated water surface elevations in the FIRM GIS Database, **which will be viewable on the WV Flood Tool!**)
- FIS Report **will not** show flood profiles for Zone A reaches



Hydraulic Analyses – Zone AE

Detailed "Zone AE" Study (158 miles)

- Generally used in areas with higher development or higher development potential
- Cross sections use information from survey and field reconnaissance
  - Include channel bathymetry
  - Structures are modeled (e.g., culverts, bridges)
- Detailed hydraulic parameter refinement (coefficients, obstructions, Manning's 'n' values)
- FIRM **will** show Floodway, BFEs, 1% and 0.2%-annual-chance event floodplains
- FIS Report **will** show flood profiles for 10-, 4-, 2-, 1-, 0.2-, and 1% Plus flood frequencies



Study Impacts

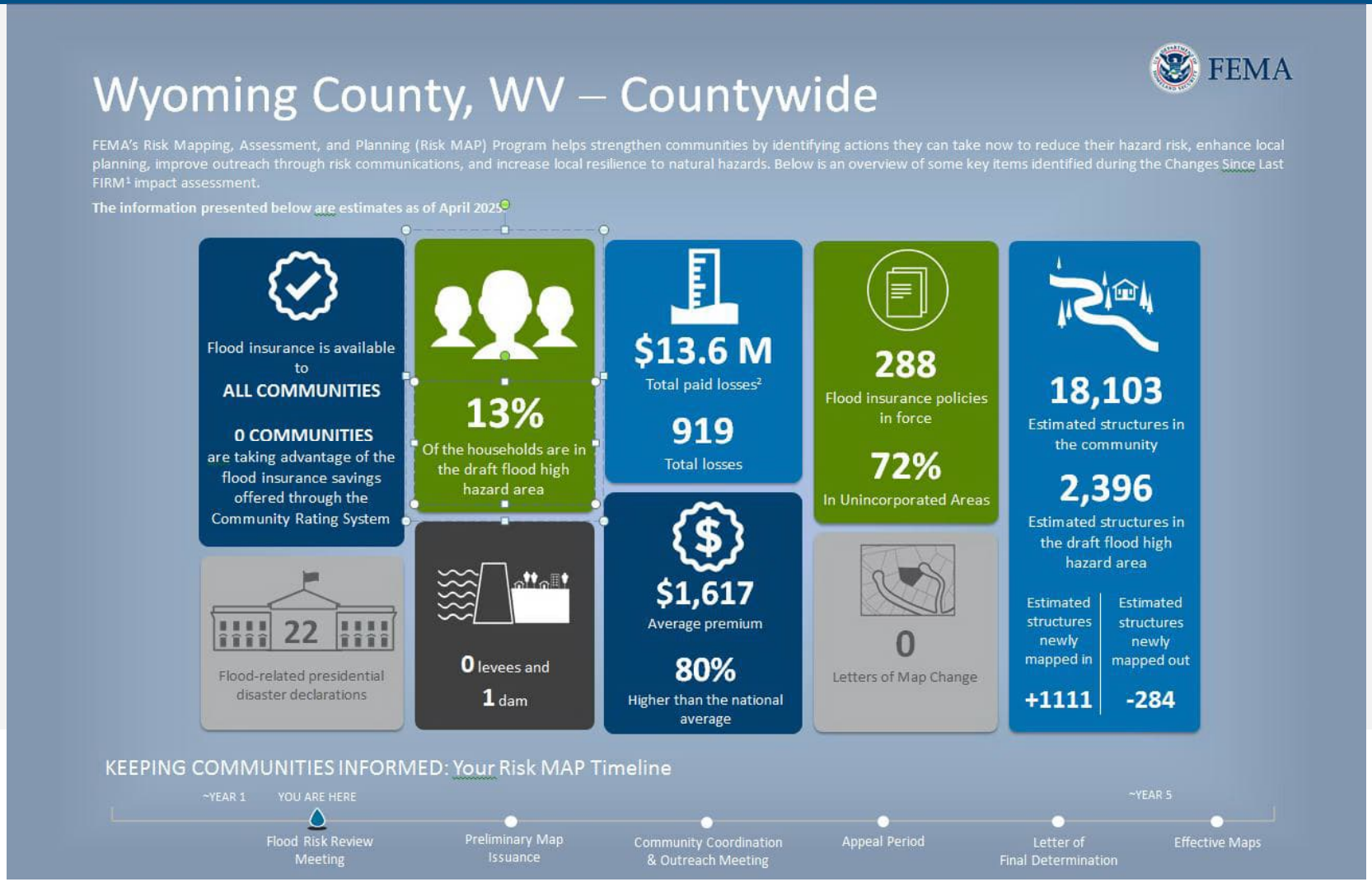
Significant Impacts Overview

- Compared to the effective NFHL, widening and narrowing of the 1%-annual-chance floodplain (SFHA) extent was observed throughout the county.
- Most streams experienced both increases and decreases when comparing the computed model WSELs to the current regulatory BFEs.
- Extended study reaches (with drainage areas of 1 square miles and greater, and not on current effective FIRM) result in new properties within the SFHA.
- More structures will be mapped in than mapped out due to newly added floodplain and floodplain increase.

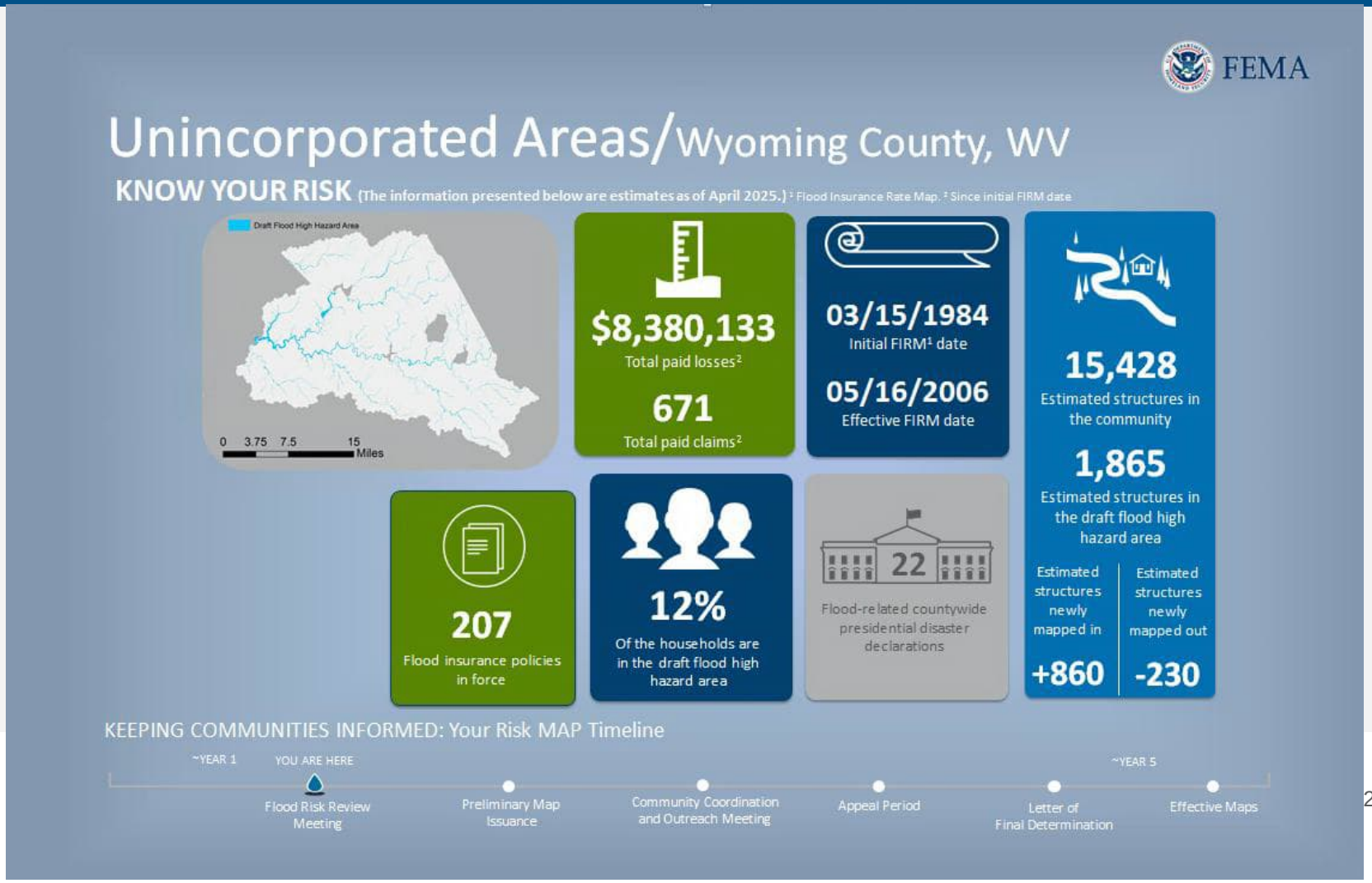
Future Map Conditions

Remaining in SFHA	Newly Mapped in SFHA	Newly Mapped out of SFHA	Total Structures in SFHA
1,285	1,111	284	2,396

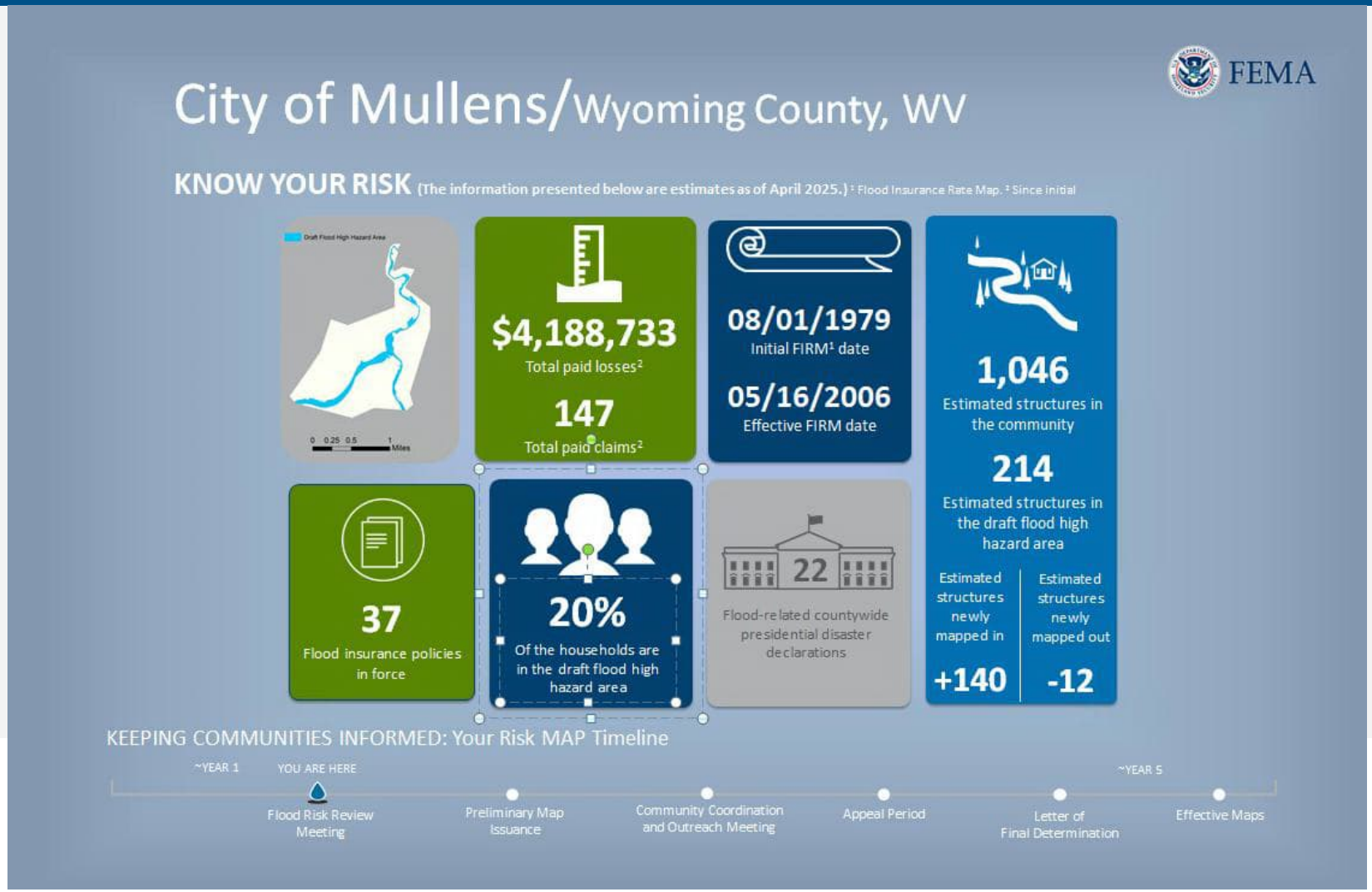
Flood Risk Dashboard



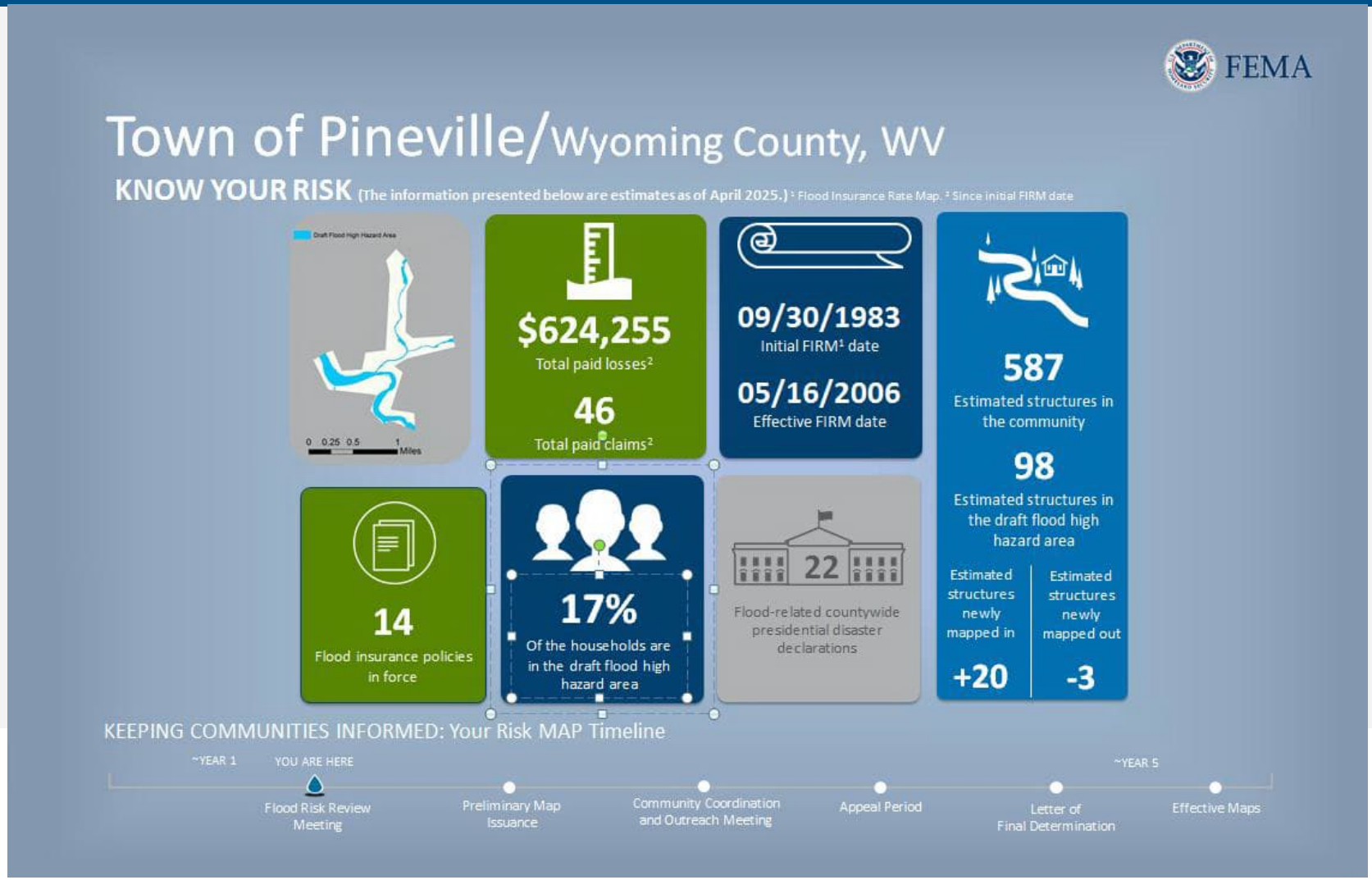
Flood Risk Dashboard



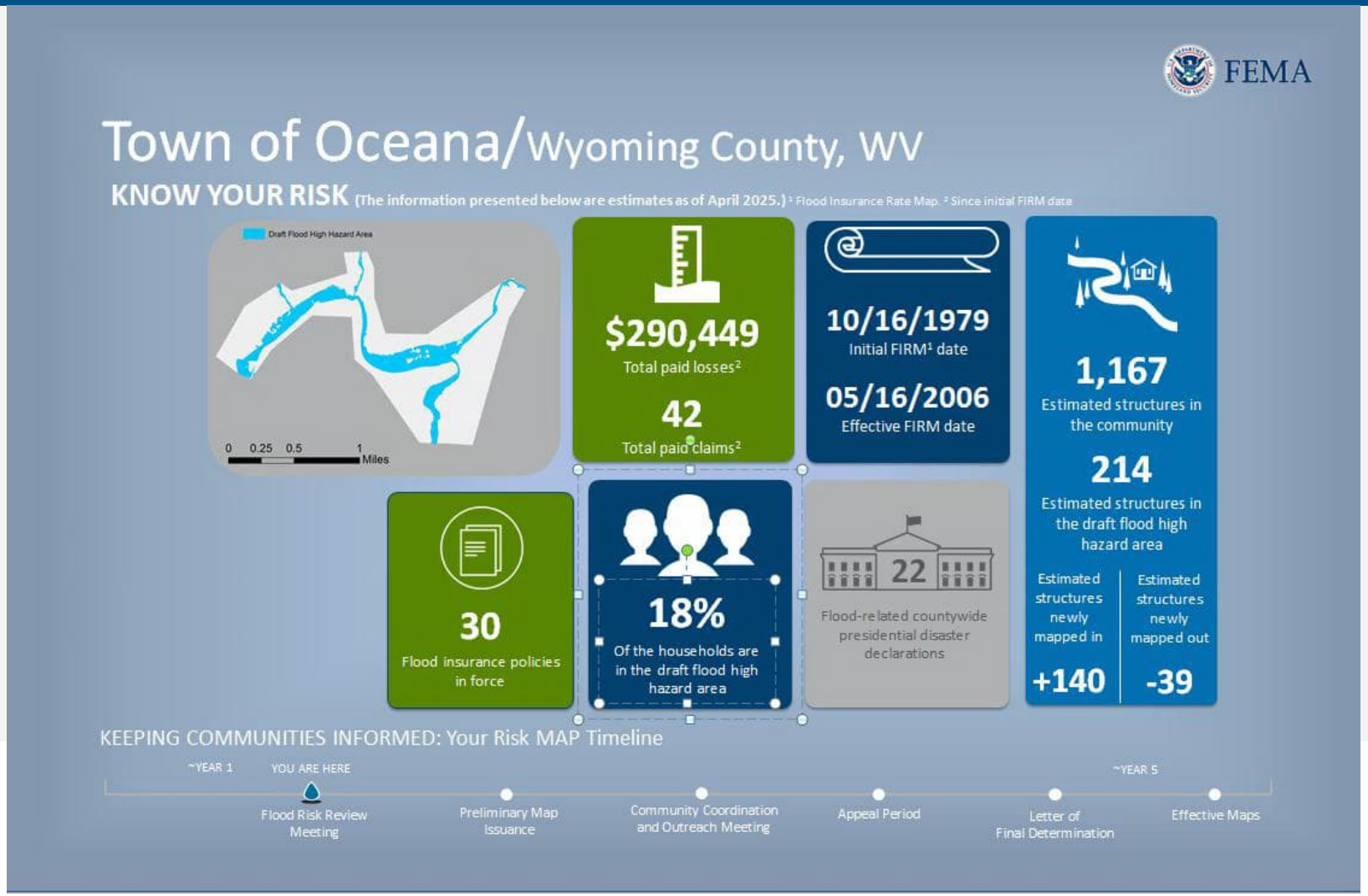
Flood Risk Dashboard



Flood Risk Dashboard



Flood Risk Dashboard



Flood Risk Dashboard

TAKE ACTION: Next Steps

Your Hazard Mitigation Plan was approved **October 2023 and** now may be the time to update and review. Some projects you identified to reduce flood risk were:

- Reduce or eliminate the impact of hazards on infrastructure throughout the State
- Provide consistent, continual education of the whole community on reducing long-term vulnerability throughout the State of West Virginia.

Find ideas to mitigate flood risk here: ***https://www.fema.gov/sites/default/files/2020-06/fema-mitigation-ideas_02-13-2013.pdf***

Immediate Next Steps:

1. Attend the Flood Risk Review Meeting

FRR Meeting is on **May 30, 2025** at **10:00am** (Digital/Online Meeting)

2. Review your preliminary FIRM/FIS[1]

The preliminary FIRMs are scheduled to be issued in the **Early 2026**

What's on the Horizon:

1. **Community Coordination and Outreach Meeting**

2. 90-day regulatory **Appeal Period** following the Community Coordination and Outreach Meeting

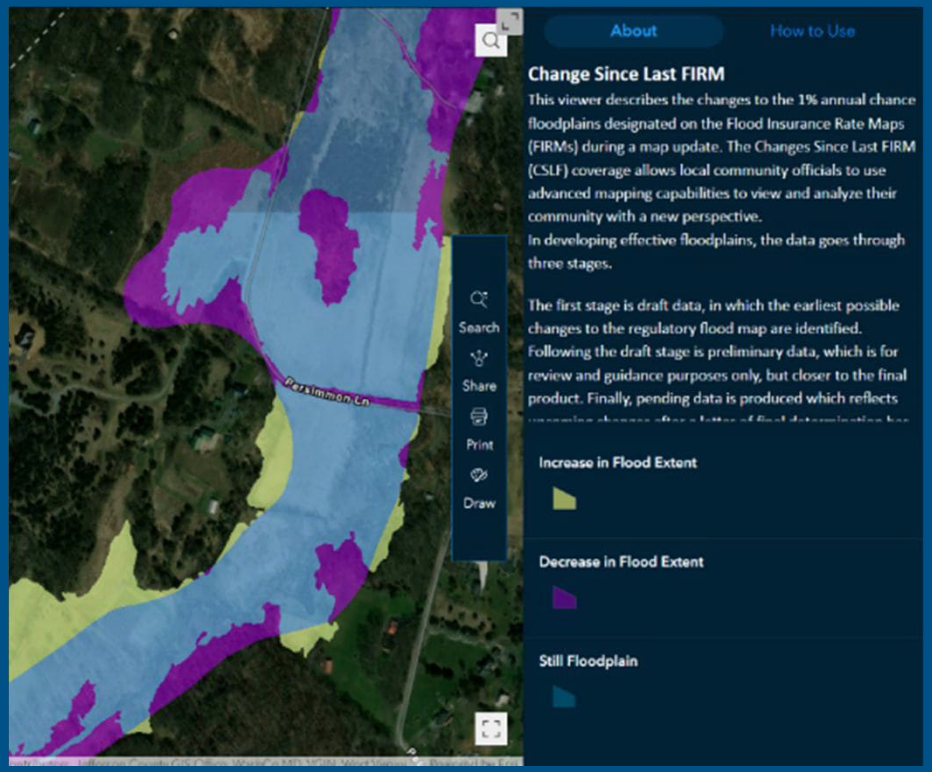
3. Letter of Final Determination issued following Appeal Period

[1] Flood Insurance Rate Map / Flood Insurance Study (FIRM/FIS)

How Did the Floodplain Maps Change?

- FEMA Region 3
  Changes Since Last FIRM (CSLF) Viewer:
  https://arcg.is/1GS0T80
- Change in Floodplain Extents:
  - o Purple – Decrease
  - o Blue – Still Floodplain
  - o Yellow – Increase

*Map view has scale-dependent layers

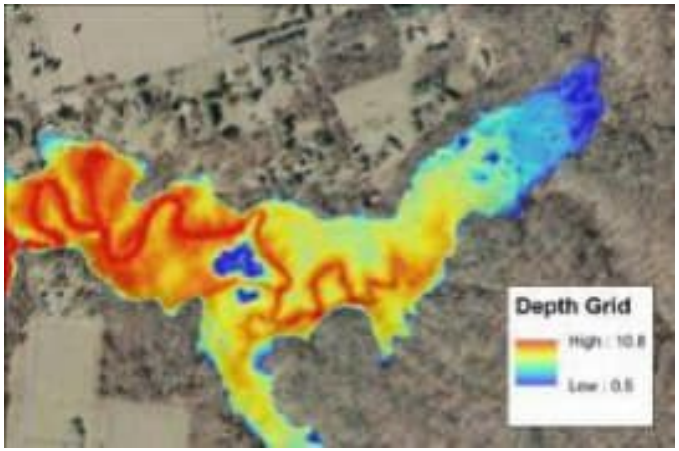


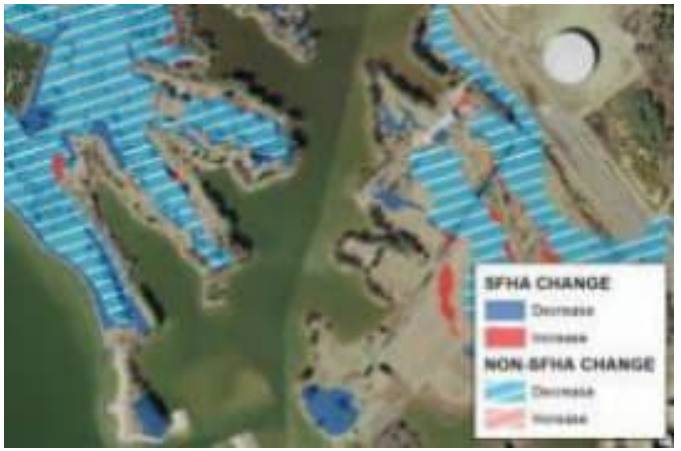
FEMA

Using Flood Risk Data to Identify and Reduce Risk

FEMA Flood Risk GIS Datasets

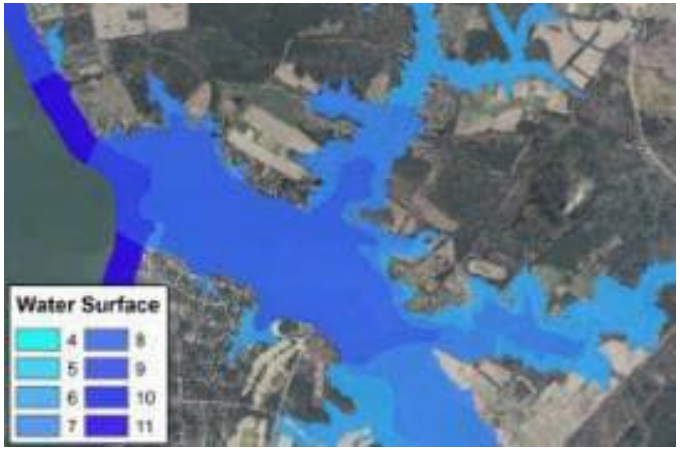
Flood Depth Grids





Changes Since Last FIRM

Water Surface Elevation Grids



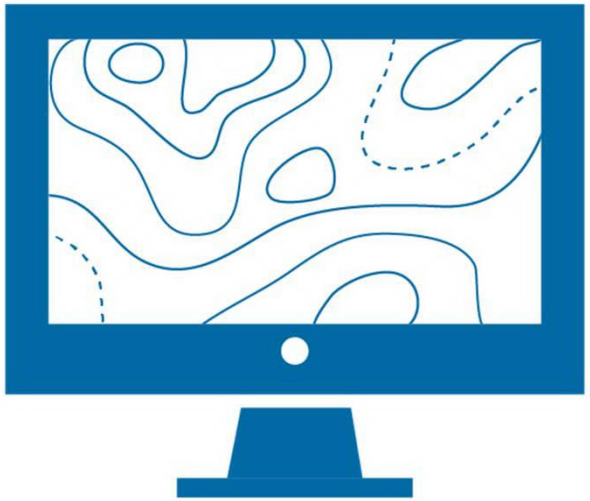
FEMA

Where to Find Flood Risk Data

- **FEMA's Flood Map Service Center (MSC)**
  - Here, you can view effective maps online. You can also download current effective flood hazard data and additional hazard and risk data.
  - https://msc.fema.gov/portal/home

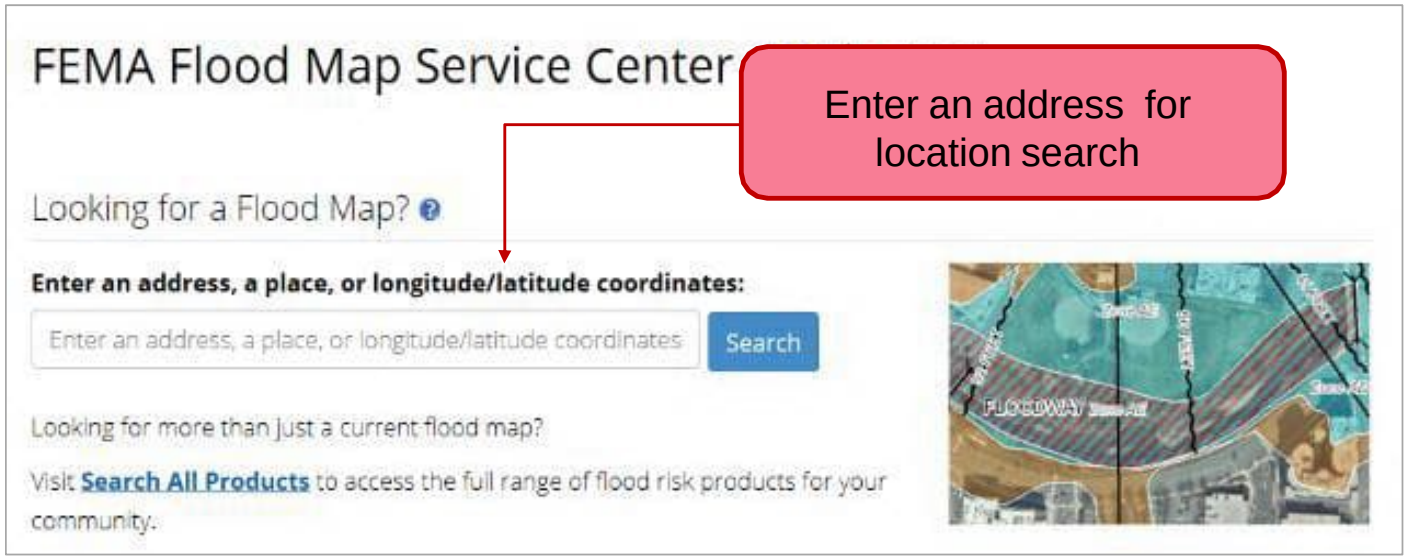
- **National Flood Hazard Layer (NFHL)**
  - This geospatial data viewer contains current effective flood hazard data.
  - https://www.fema.gov/flood-maps/national-flood-hazard-layer

- **State Flood Tool**
  - This geospatial data viewer contains current effective flood hazard data and additional hazard and risk data.
  - https://www.mapwv.gov/flood



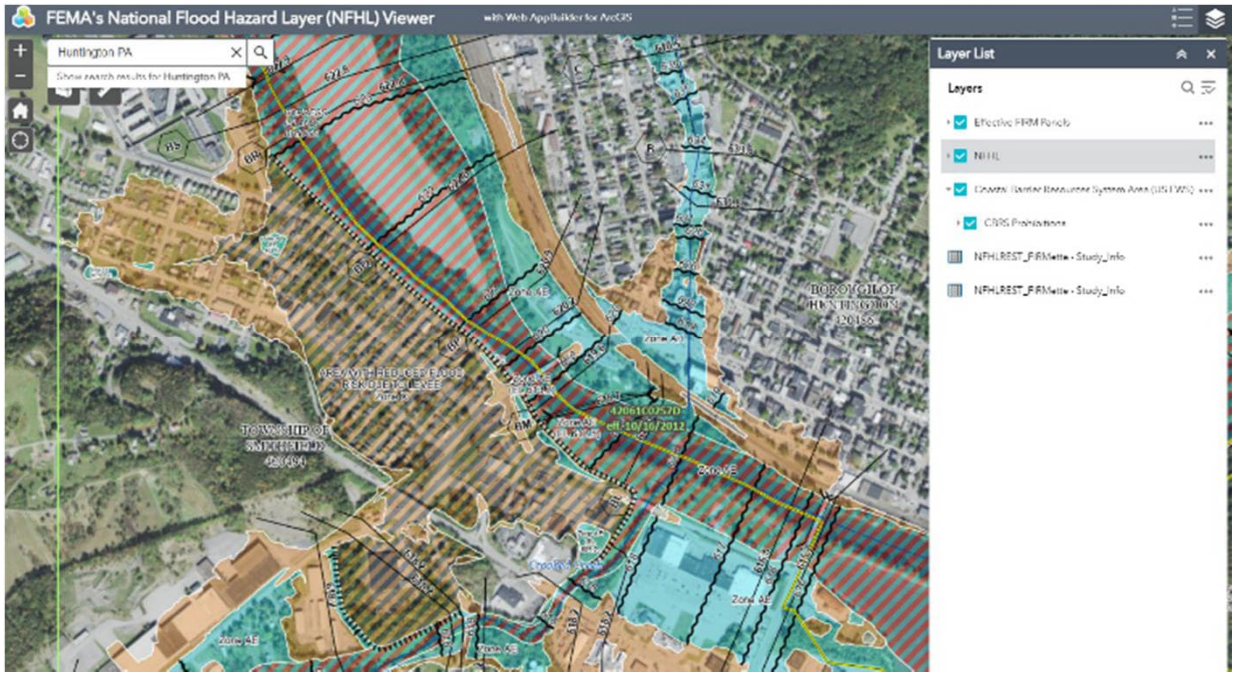
Where Can I Find My Flood Maps?

The FEMA Map Service Center (MSC) is the official public source for flood hazard information: https://msc.fema.gov/portal/home.



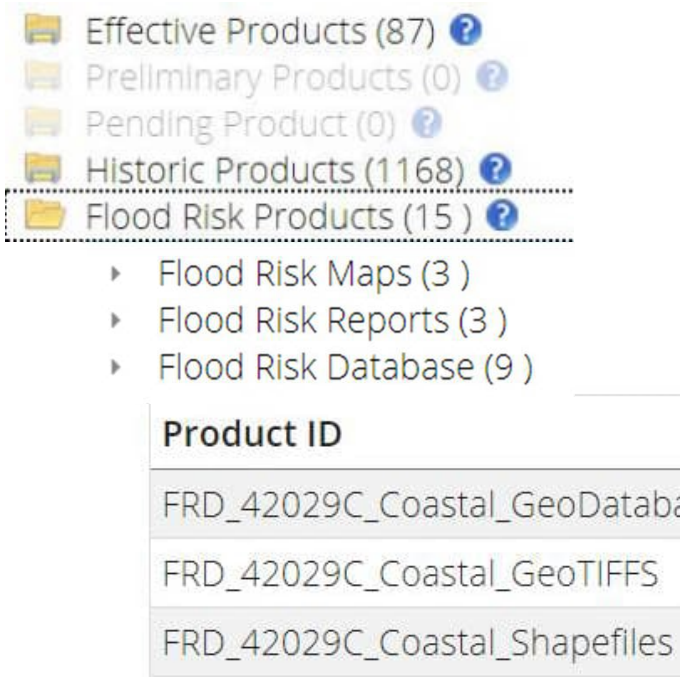
National Flood Hazard Layer

The NFHL shows the effective FEMA flood map data, including Letters of Map Revision (LOMRs).Visit https://www.fema.gov/national-flood-hazard-layer-nfhl for multiple options to view and download NFHL data.



Additional Hazard and Risk Data

If additional hazard and risk data are available for your community, the MSC Search Results will allow you to expand the Flood Risk Products folder.



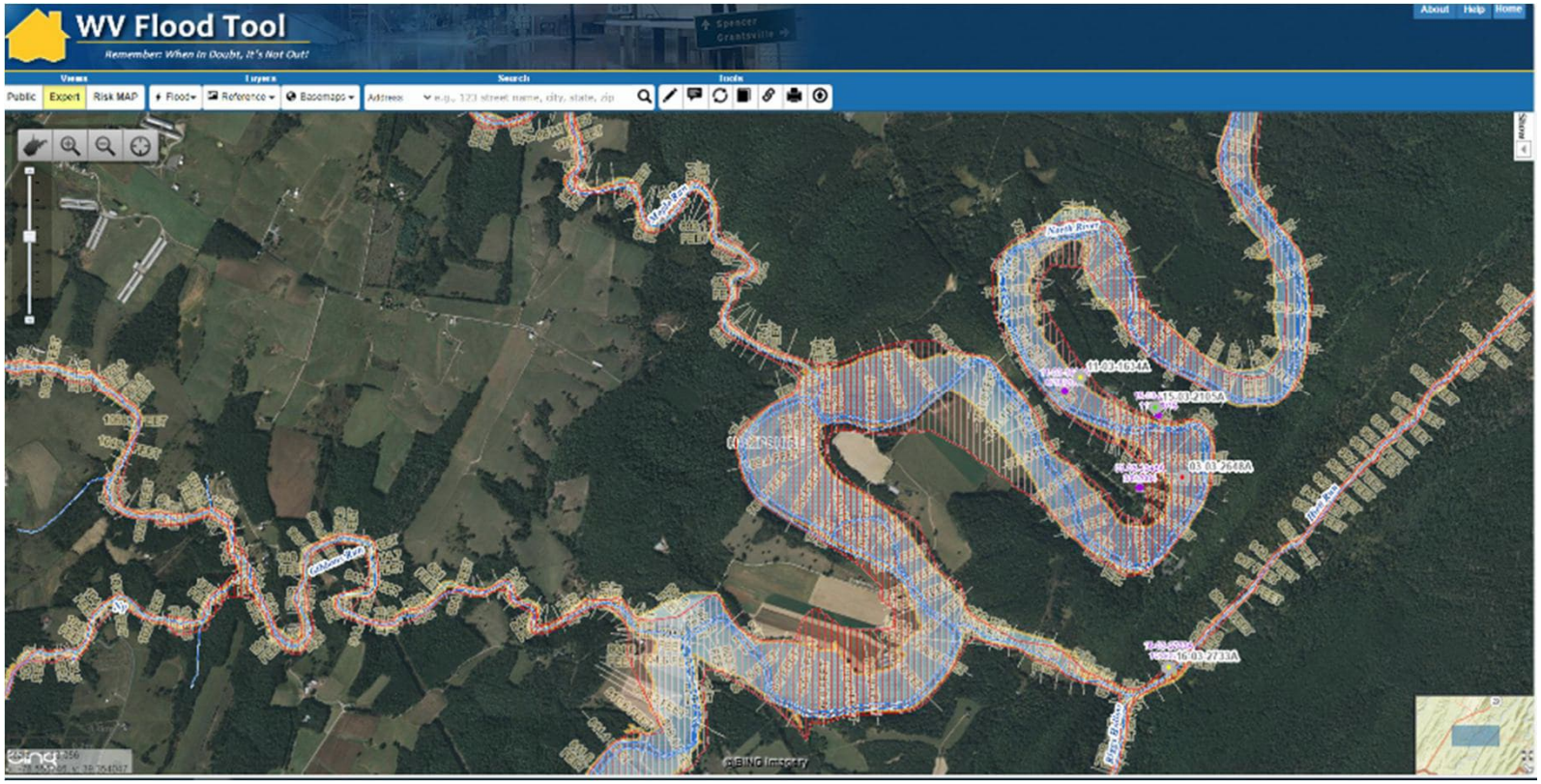
Water Surface Elevation Grids

Represents the continuous water surface elevations (as determined at modeled cross sections and interpolated between cross sections) for each of the modeled flood frequencies.

Depth Grids

Represents the difference between the ground surface elevation and the water surface elevations in feet for each of the modeled flood frequencies.

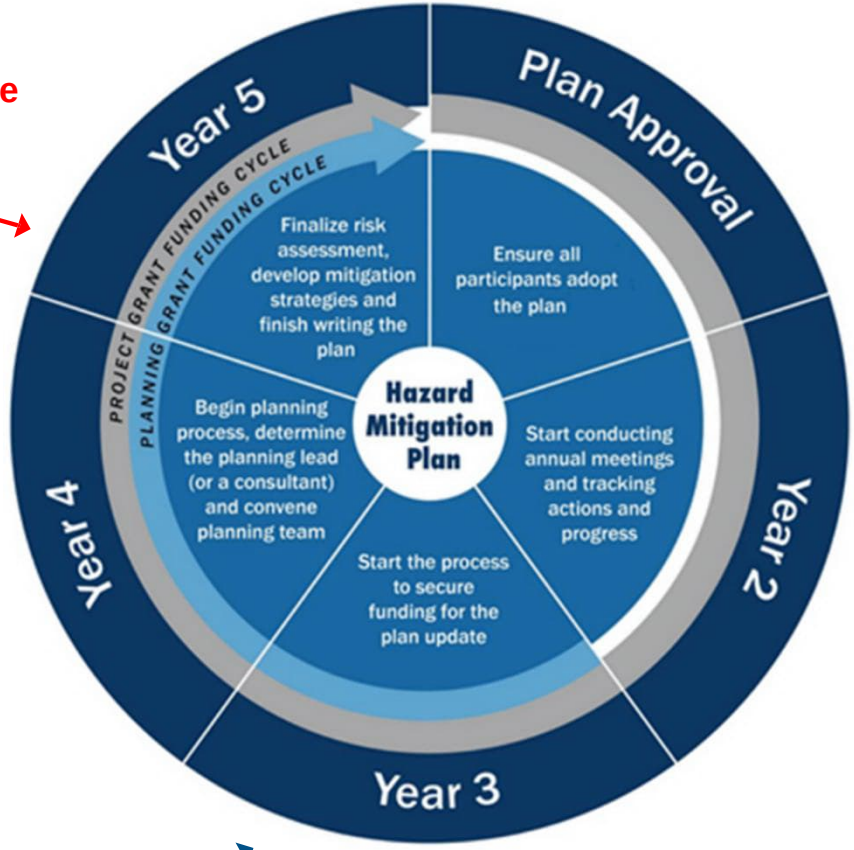
West Virginia Flood Risk Tool



[WV Flood Tool (mapwv.gov)]

Flood Hazard Mitigation Planning

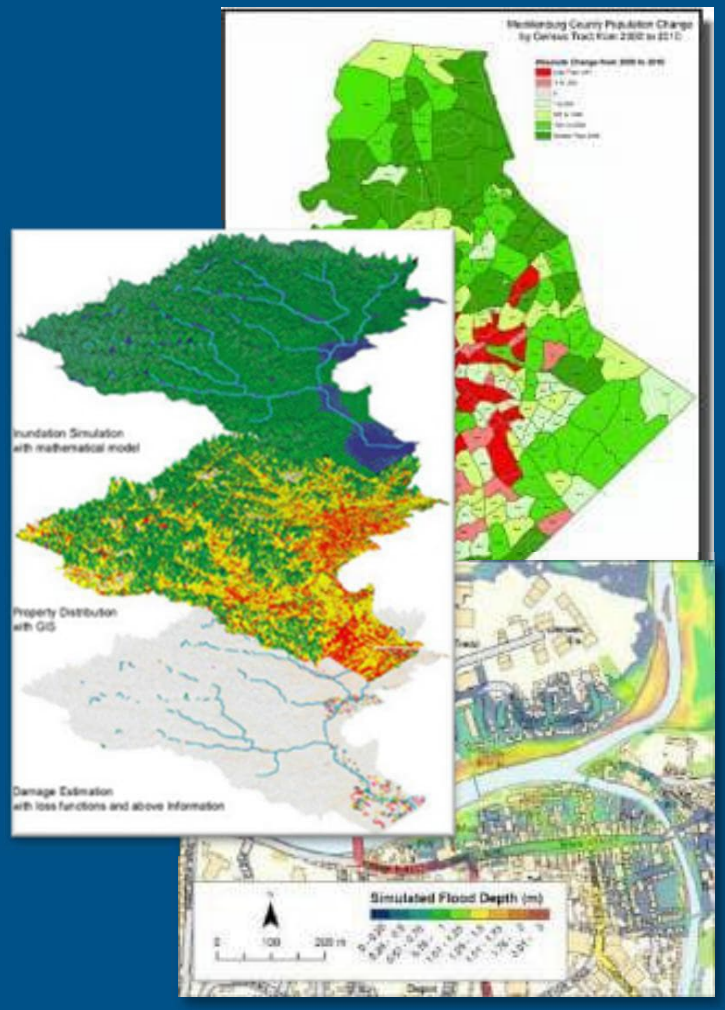
It's time to update the risk assessment in your hazard mitigation plan



The West Virginia State HMP is here

Using Flood Risk Data to Manage Development

- Structure-based depth of flooding analyses
- Prioritization of mitigation action
- Residential/commercial density in the floodplain
- Location/inundation area of historic events
- Properties with insurance policies and as a percentage of the population
- Areas of population growth
- Areas requiring protection



FEMA

Floodplain Management

Flood Risk Doesn't Stop at a Line

- 40% of all flood insurance claims come from outside high-risk areas.
- Your community can regulate to standards higher than the NFIP minimum standards. Consider strengthening regulations using:
  - 0.2%-annual-chance flood zone
  - "Freeboard" – require additional feet above a BFE
  - Buffer around SFHA
  - Flood depth grids

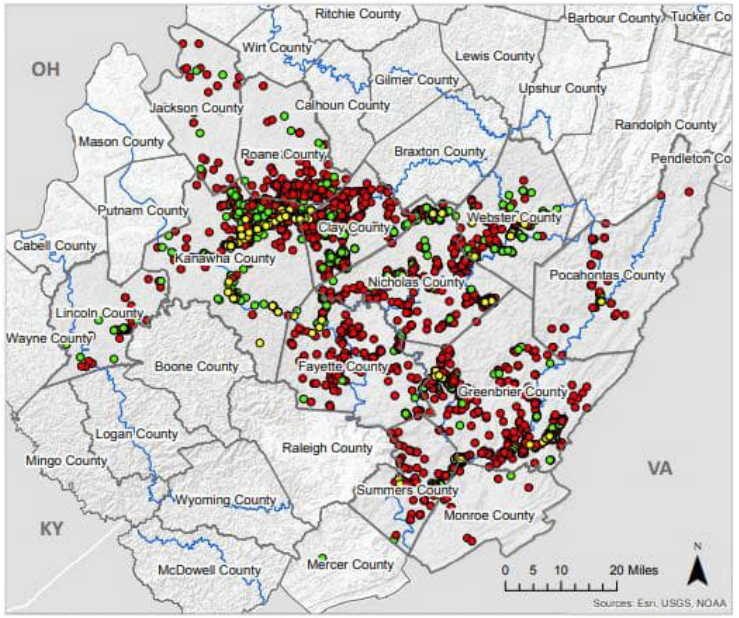


FIGURE 8: Location of NFIP Claims and Individual Assistance Applications. (green = inside 1% annual chance floodplain; yellow = inside 0.2% annual chance floodplain; red = outside mapped floodplain)

June 2016 –West Virginia

- Many homes outside the SFHA also flooded. Some of these households had flood insurance, but many did not. Homeowners with flood insurance recover more quickly than those without.
- The flood in June 2016 was not a rare, "1 in 1,000 year event." Although the amount of rain that fell was unusual; rainfall and flooding are different.
- The latest data shows that the level of flooding that occurred in 2016 could happen more frequently than previously thought. In many areas, the event has at least a 1% chance of happening each year in the future.

Source: https://www.fema.gov/sites/default/files/documents/Region_III_WV_FloodReport.pdf

Floodplain Management at FRR

Look at where there are changes to the SFHA in your community

Share with permitting, planning, and other colleagues to direct development outside of the SFHA today and in future

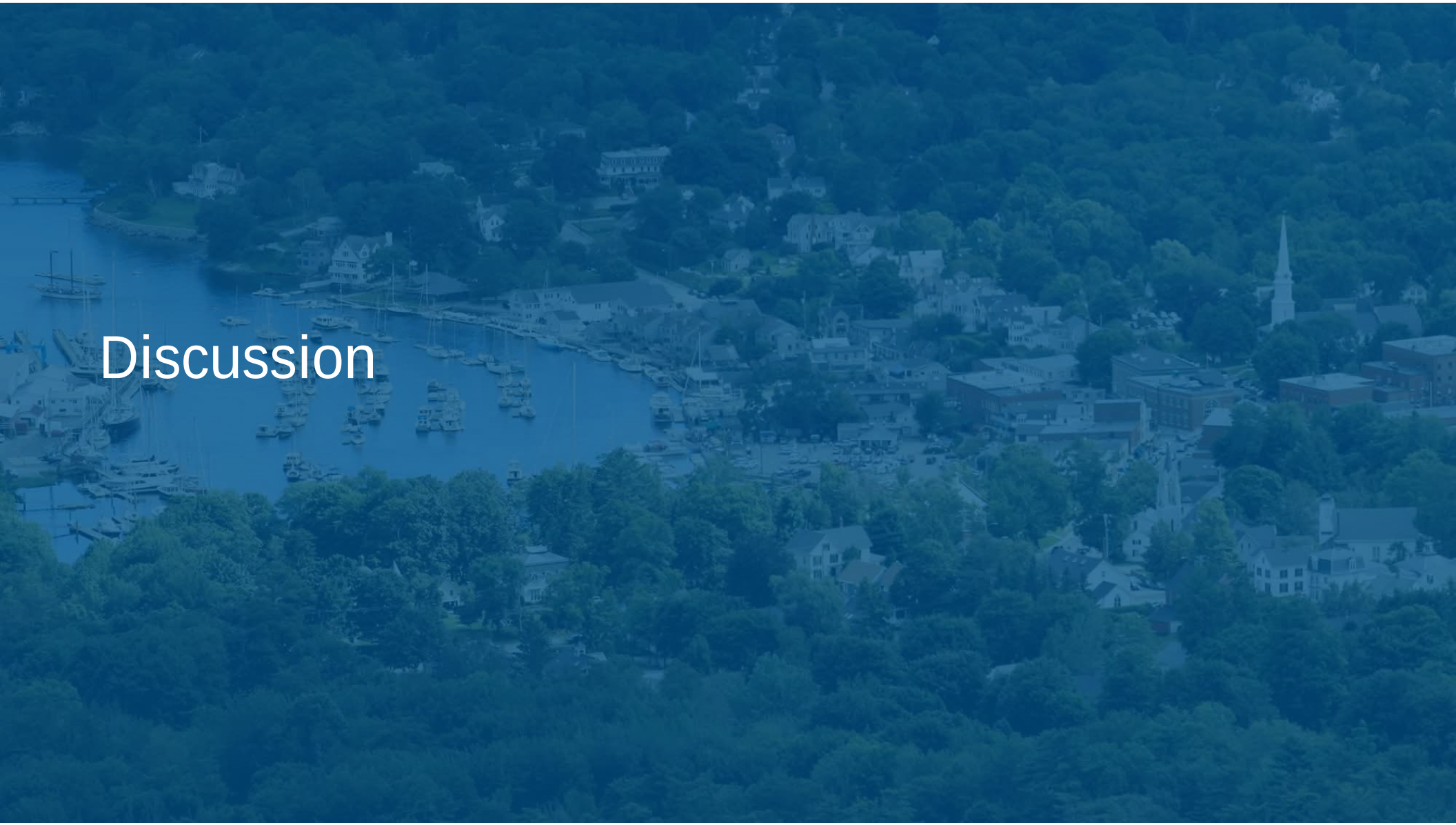
Consider higher standards or joining the Community Rating System to support your community

FRR: Flood Risk Review
SFHA: Special Flood Hazard Area

Floodplain Management Big Picture

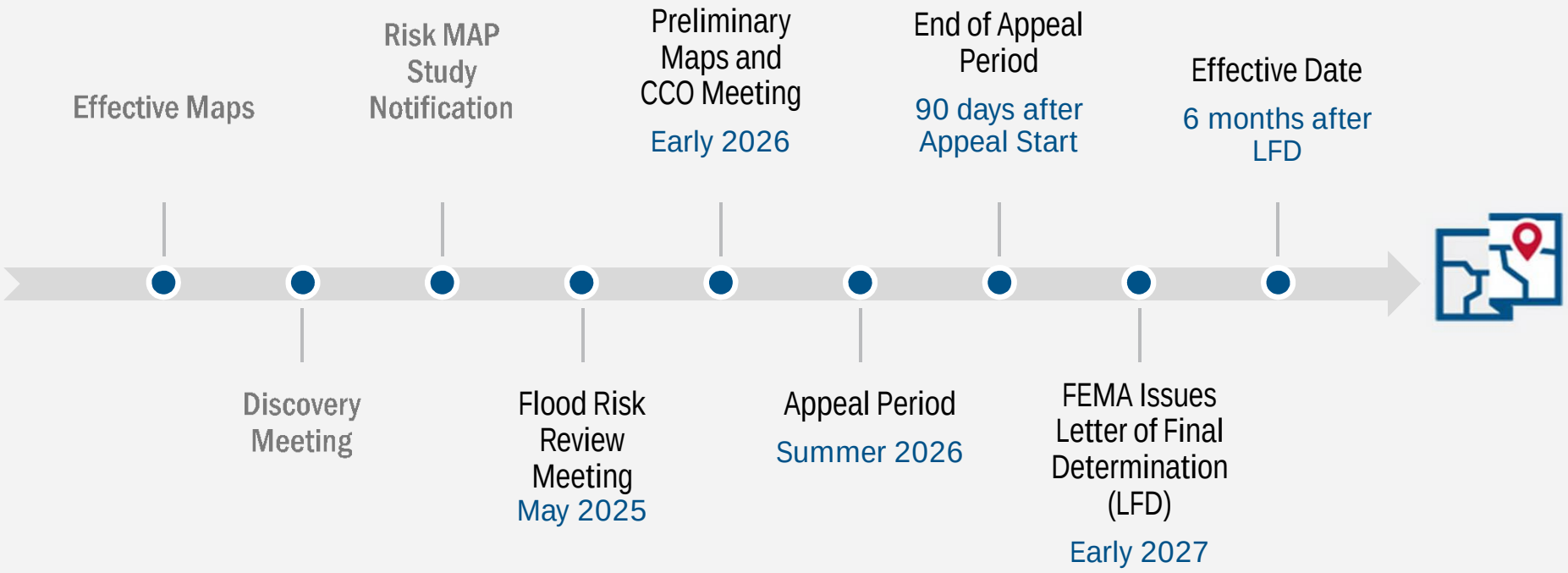
Build it right and lower the impact of future flood losses while improving resiliency

Build it wrong and the result could be increased flood losses and higher flood insurance premiums



Discussion

Timeline – Looking Ahead



We want to hear from you!

- 30-day review and comment period
- WV Flood Tool: https://www.mapwv.gov/flood
- Review the materials we will be sending you
- We are available to answer questions
- Talk about mitigation actions in your community
- *Thank you for your participation!*

Project Contacts – West Virginia

State NFIP/CTP Office:

Kevin Sneed
CTP Project Officer
(304) 957-2571
kevin.l.snead@wv.gov

Julie Sears
State NFIP Specialist
(304) 989-8330
julia.r.sears@wv.gov

FEMA Region 3:

Bob Pierson
FEMA Project Officer
(215) 931-5650
robert.pierson@fema.dhs.gov

Bill Kuhn
Community Planner
william.kuhn@fema.dhs.gov

Betsy Ranson
Floodplain Management Specialist
(215) 347-0686
elizabeth.ranson@fema.dhs.gov

Bill Bradfield
Insurance Specialist
(202) 880-5906
william.b.bradfield@fema.dhs.gov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FEMA