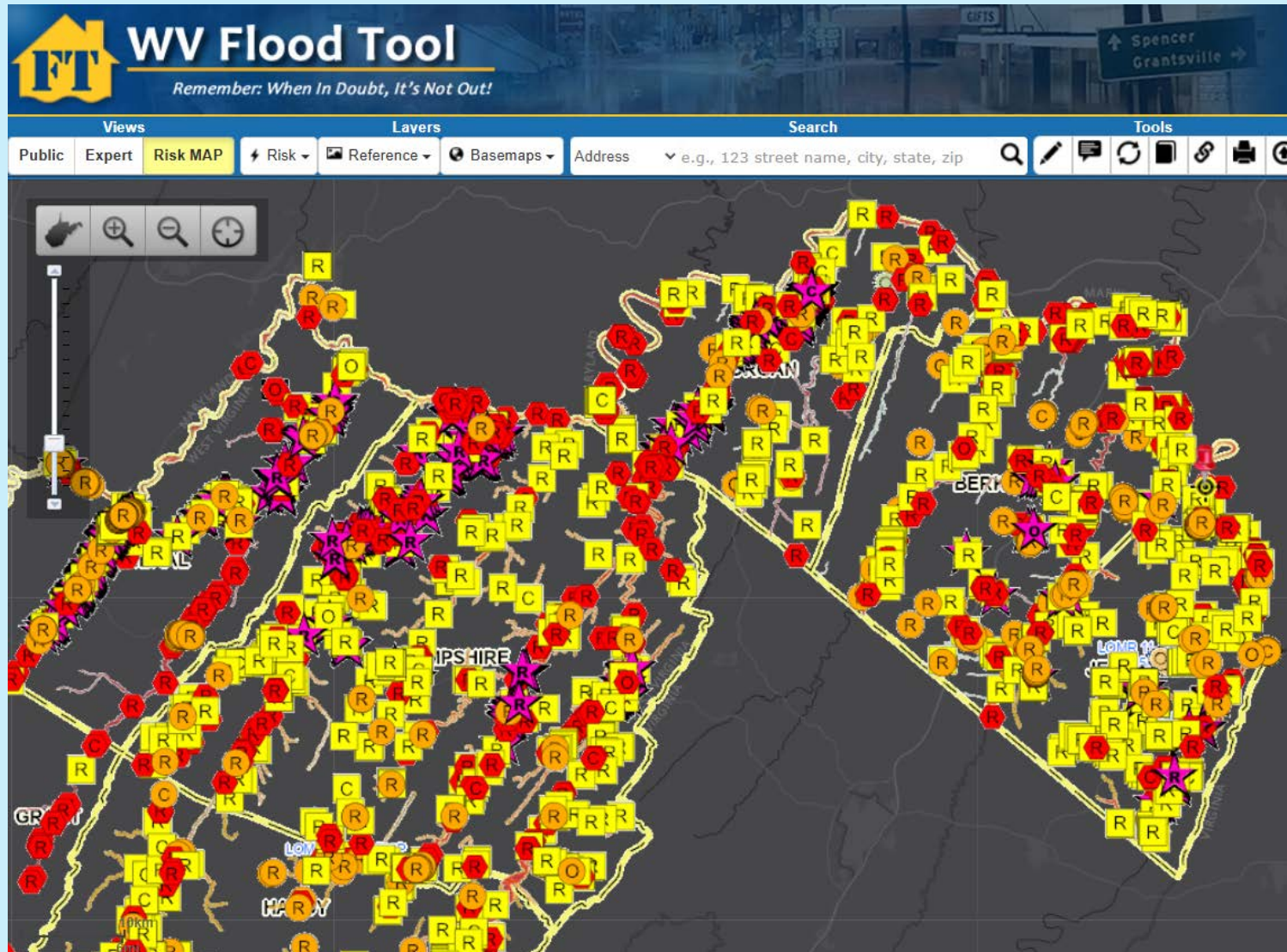









New Flood Maps



Future Map Condition		Land Use Category	
	Mapped Out SFHA		Residential
	Mapped In SFHA		Commercial
	Remains Same		Other
	Floodway		

Kurt Donaldson

WV GIS Technical Center

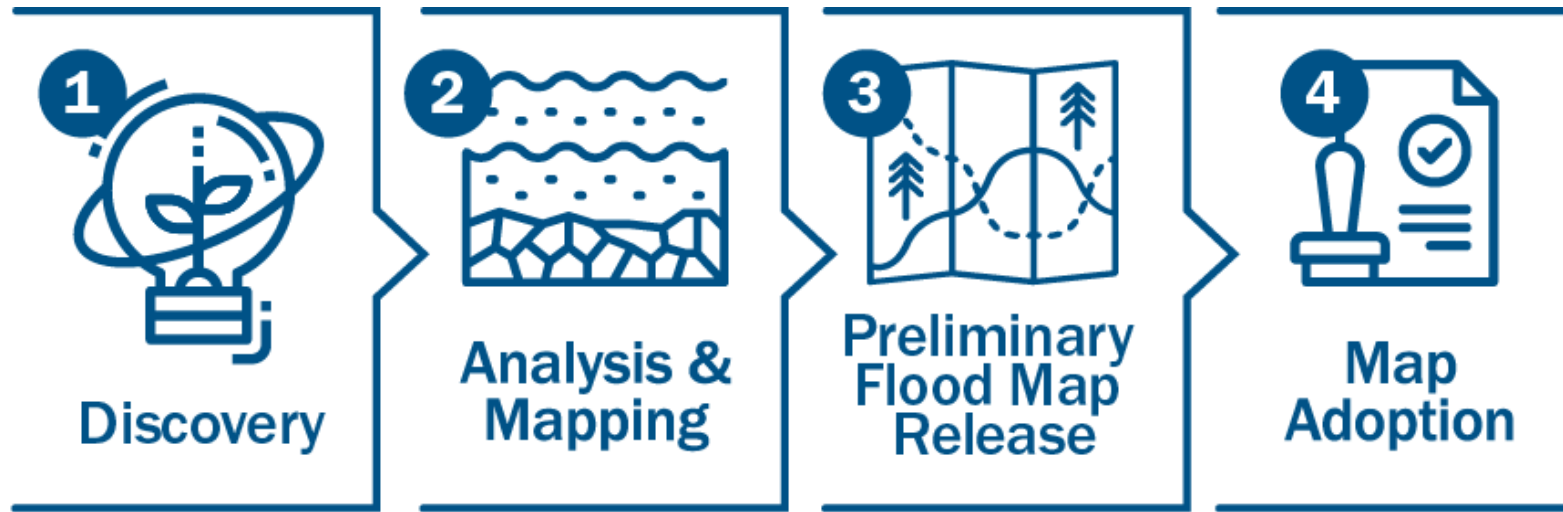
West Virginia University

kdonalds@wvu.edu

Difference between FEMA's 2009 and 2024 flood studies

Mapping: Risk MAP Process

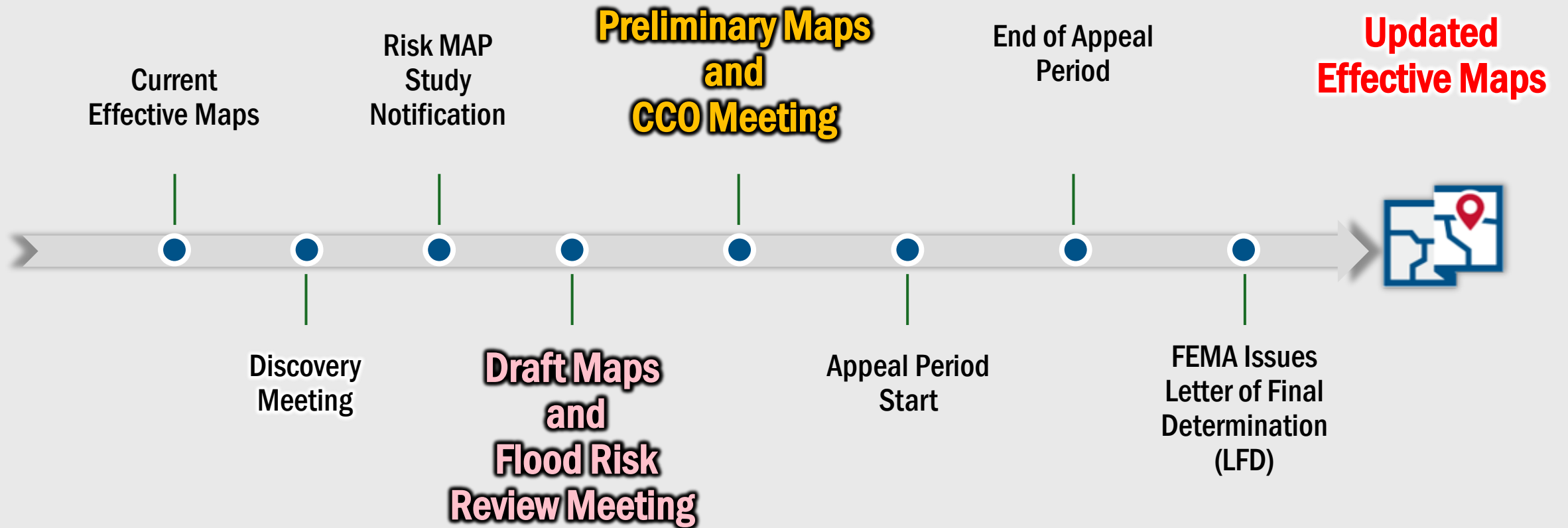
- FEMA is responsible for mapping our country's flood risk. The agency and its partners do this by making Flood Insurance Rate Maps, or flood maps.
- Risk Mapping, Assessment and Planning, [Risk MAP](#), is the process used to make these maps.



Risk MAP Process

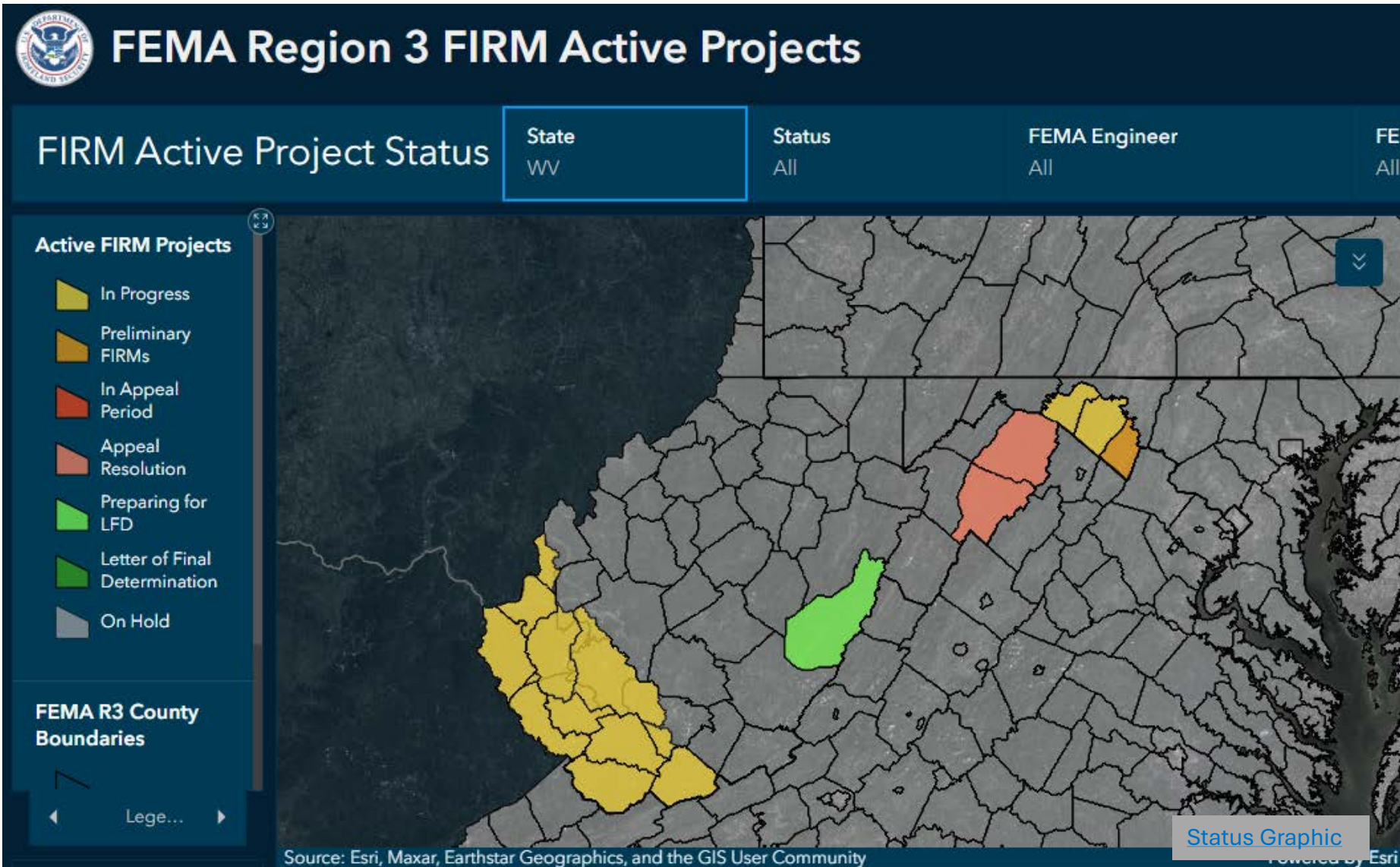
- 1) Discovery:** Initial meetings to assess needs and scope the flood map project.
- 2) Analysis & Mapping:** Data collection, modeling, and creating the draft and preliminary maps.
- 3) Preliminary Flood Map Release:** Sharing the preliminary maps with communities and the public, followed by a 90-day appeal period.
- 4) Map Adoption:** Communities adopt the new maps into their floodplain management ordinances, which happens after all appeals are resolved and a six-month compliance period has passed.

Risk MAP Timeline



A Risk MAP project, from start to finish, can take up to 5 or more years to complete

Risk MAP: In Progress



In Progress

Counties

- Berkeley
- **Cabell**
- *Lincoln* (Partial)
- *Logan* (Partial)
- **McDowell**
- **Mercer**
- **Mingo**
- Morgan
- Raleigh (Partial)
- **Wayne**
- **Wyoming**

Watershed

- Coal

Preliminary

- Hampshire
- Hardy
- Jefferson
- Pocahontas

New flood maps are currently being created for 27% of counties in state

WV RiskMAP Flood Study Project Status

June 2025

<< Future Trends in Mapping >>

- Floodplain Mapping Resolution: Mapping at higher watershed drainage resolution (1-square mile watershed)
- Gridded Flood Risk Products Resolution: Higher spatial resolution of 1-meter grid cell size for flood risk products (e.g., Water Surface Elevation, Water Depth).
- Depth Grids for Multiple Flood Events: Depth Grids published for multiple flood events (10, 04, 02, 01, 01plus, 0.2 percent chance)
- X-Sections for A Zones: In addition to AE Zones, published BFE cross sections for all Approximate A Zones
- Area-based 2D HEC-RAS Models

Previous RiskMAP Study FIRM Panel Effective Dates:

- Tug Fork: 2016
- Upper Monongahela: 2019

Active / Recent Projects

- In-Progress
- Draft NFHL
- Preliminary NFHL
- Recent Effective NFHL
- 2016 - 2019 Effectives
- Effective / Non-Active Communities

Reference

- * Countywide project contracted through the State
- PMR 2016 Study Stream
- HUC-8 Watershed Boundary

WVGISTC 2025-06-05

Status Graphic

- Berkeley
- Cabell
- *Lincoln* (Partial)
- *Logan* (Partial)
- McDowell
- Mercer
- Mingo
- Morgan
- Raleigh (Partial)
- Wayne
- Wyoming
- Watershed
- Coal

- Hampshire
- Hardy
- Jefferson
- Pocahontas

- Greenbrier
- Kanawha (Elk River)
- Monroe
- Nicholas (Cherry R.)
- Pendleton
- Summers
- Webster (Gauley R.)

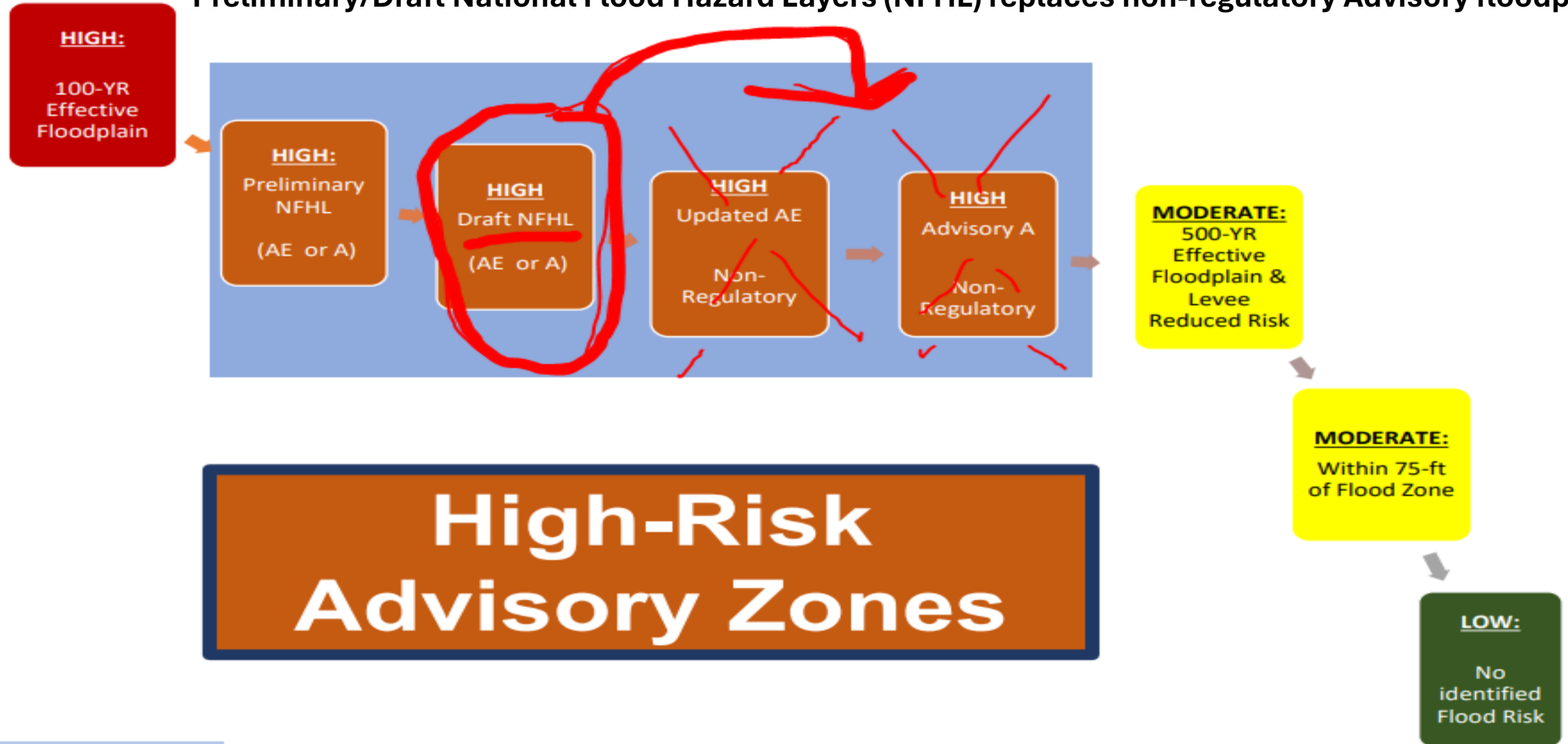
Risk MAP Status

WSEL and Depth Grid Resolution

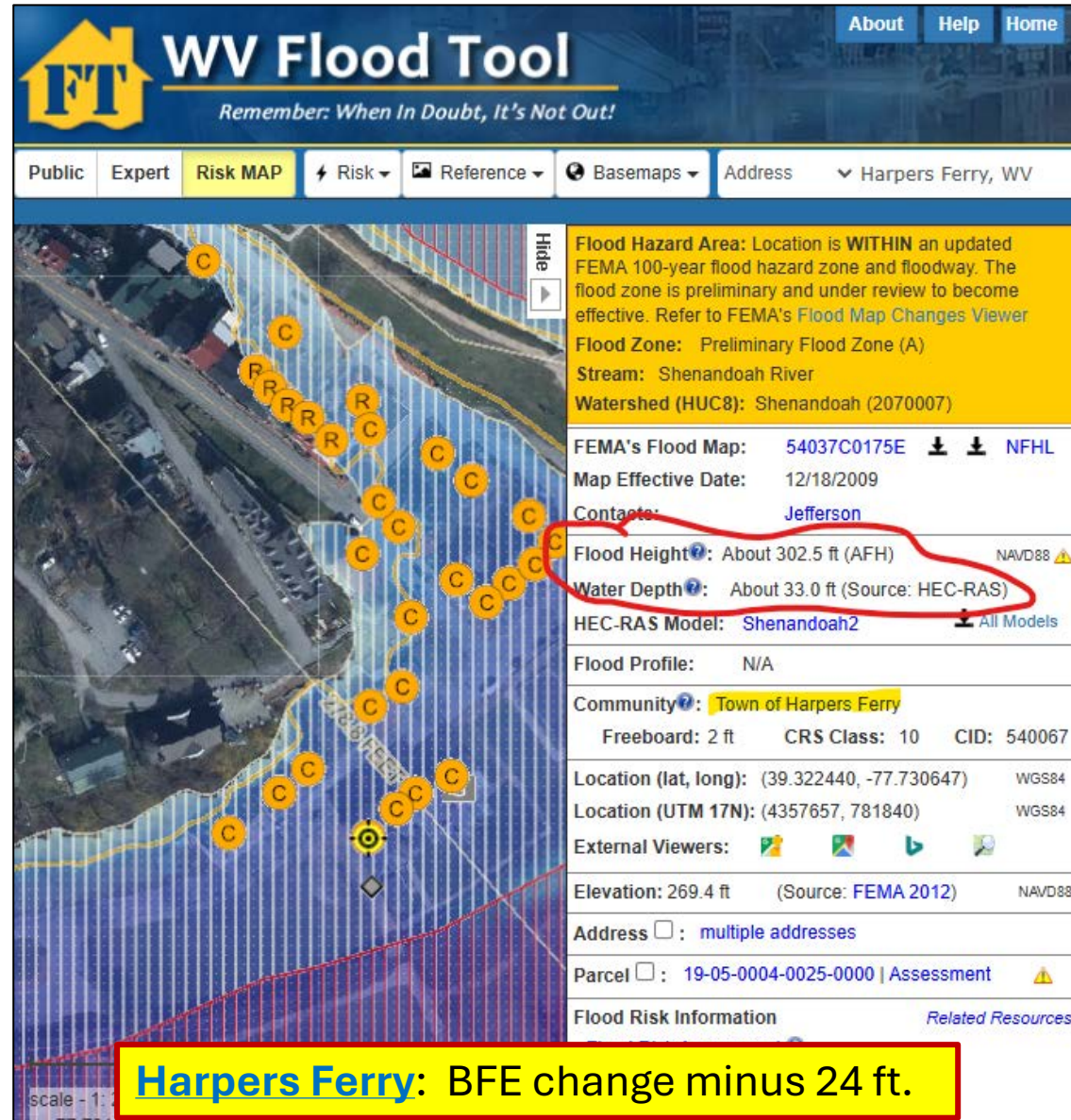
- ## 14 counties with no AFH

Flood Zone Determination Sequence

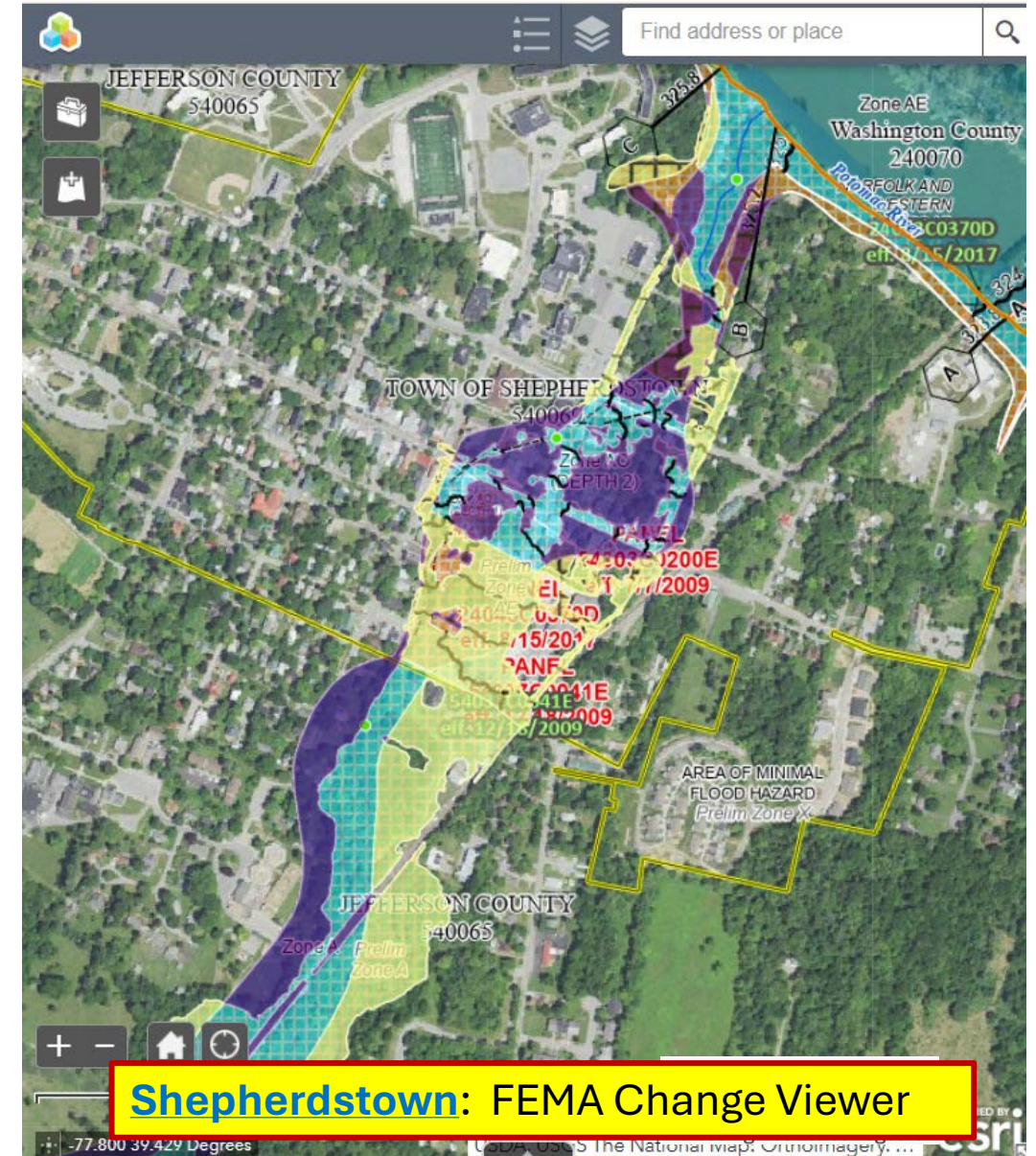
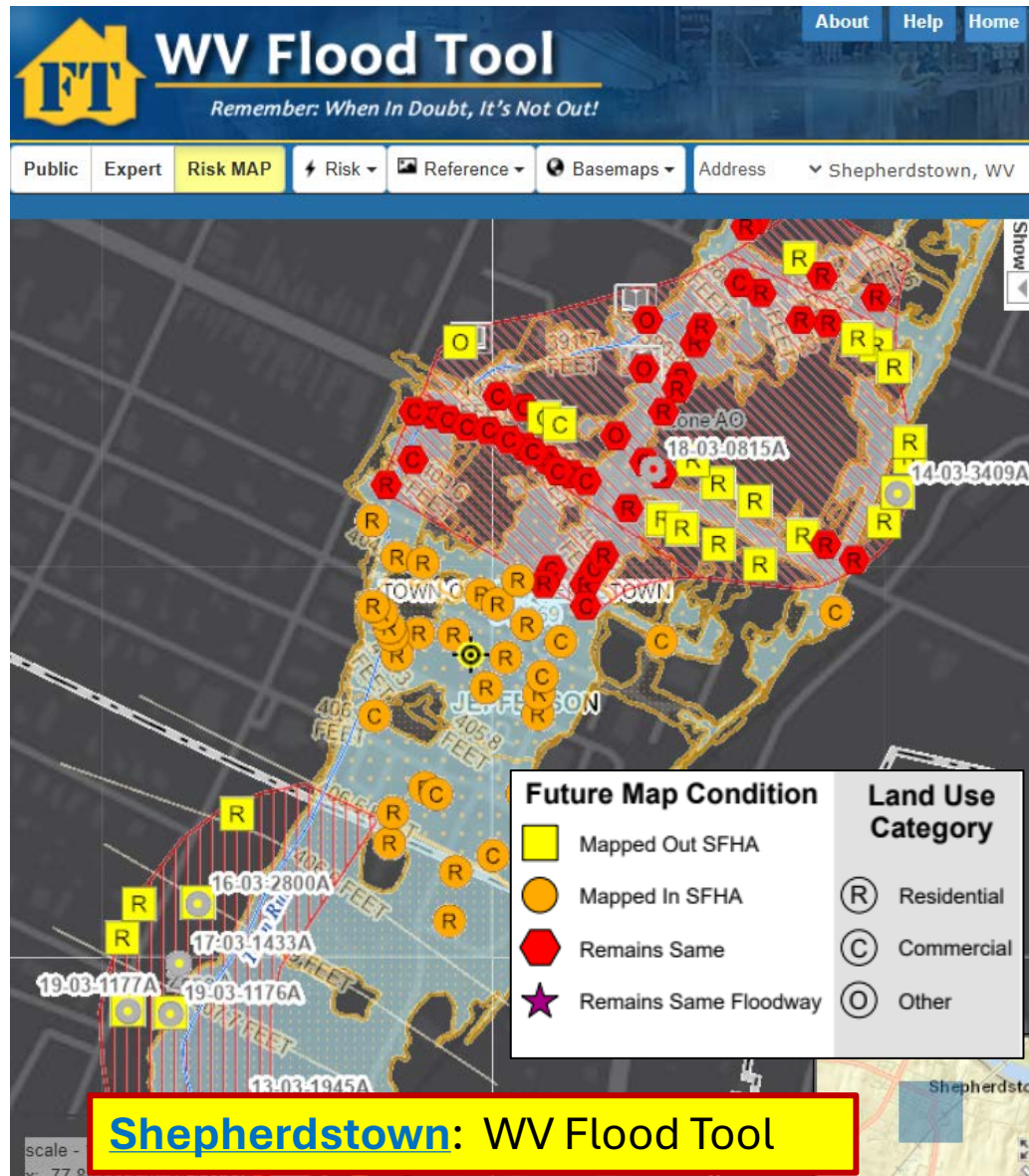
Preliminary/Draft National Flood Hazard Layers (NFHL) replaces non-regulatory Advisory floodplains



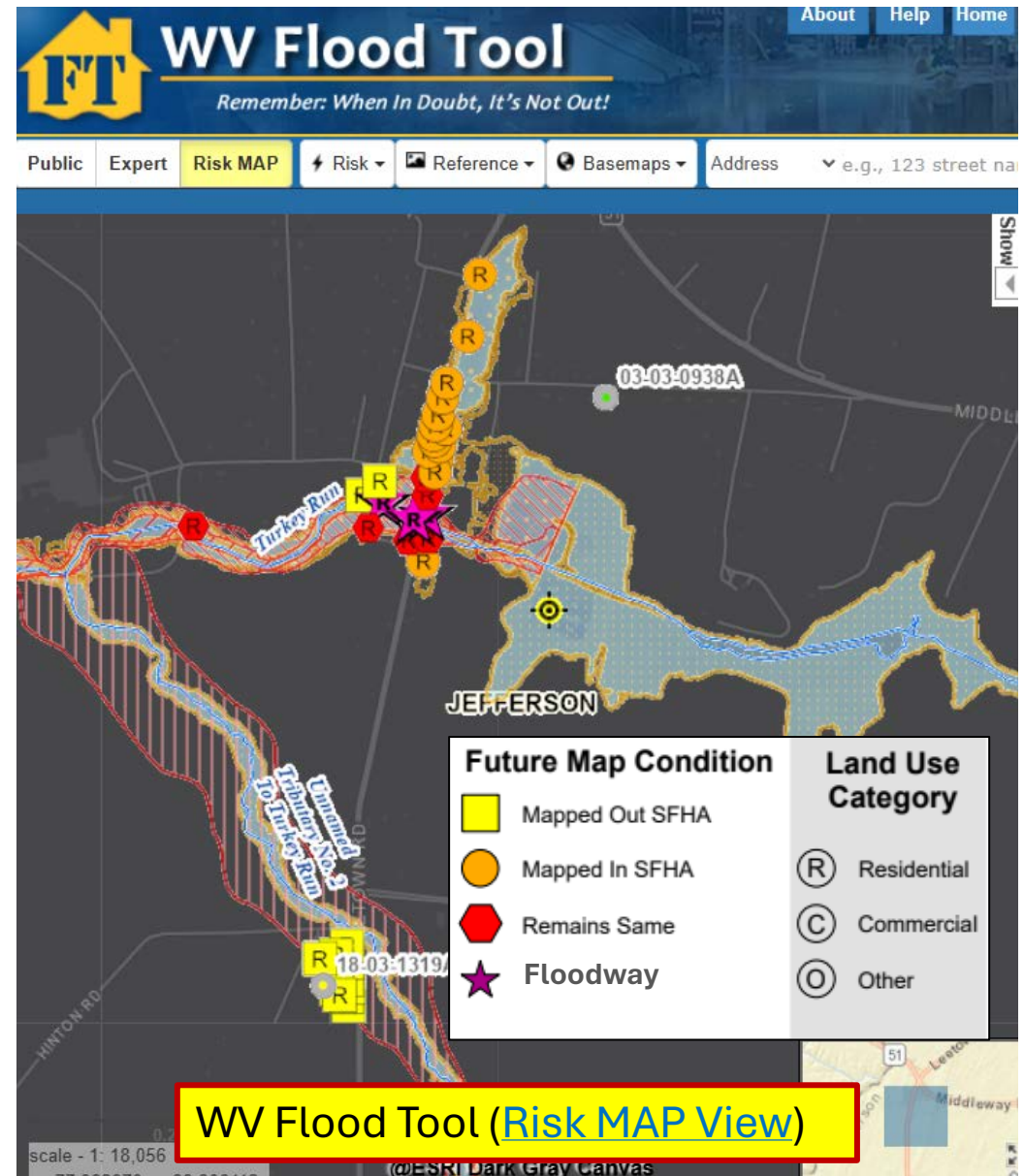
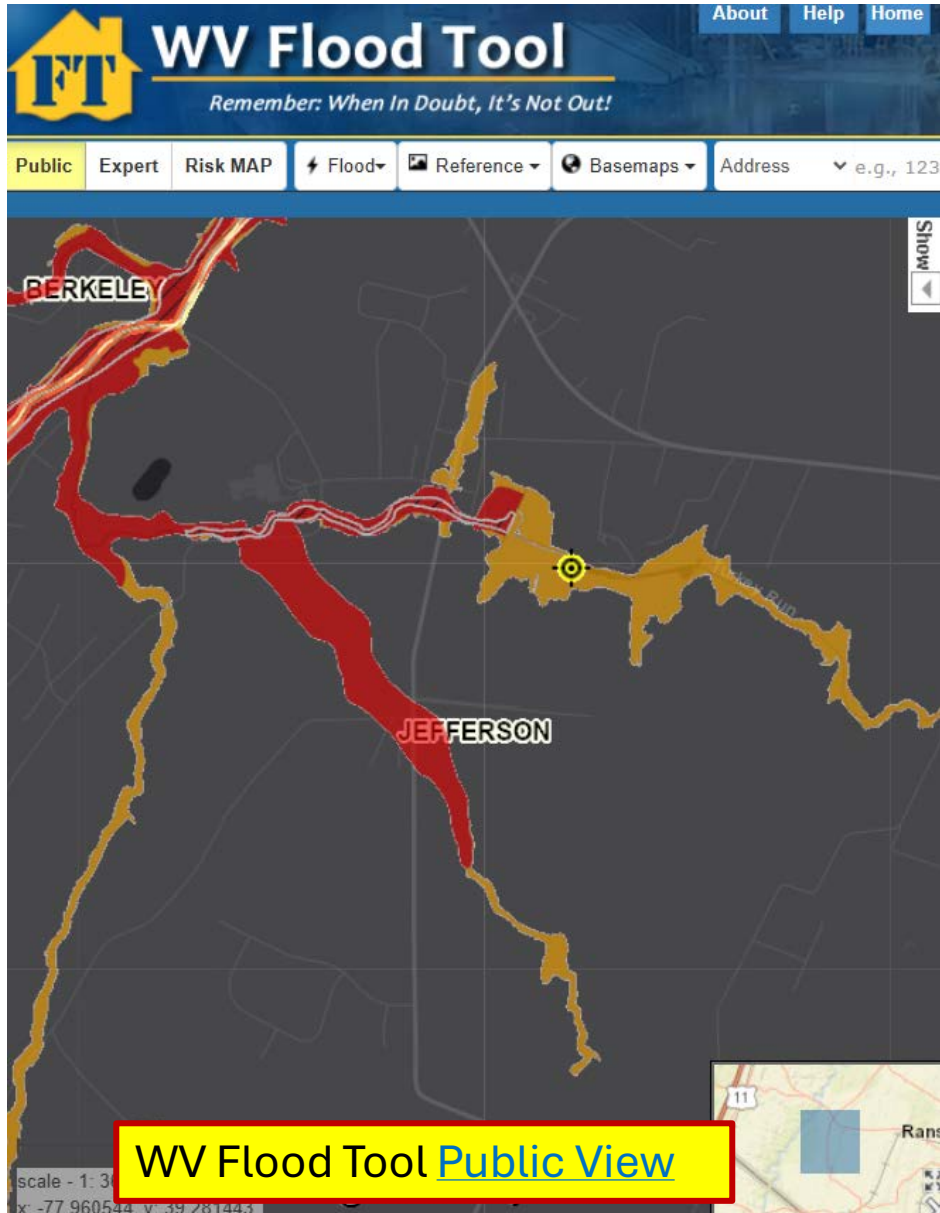
Map Changes – Harpers Ferry



Map Changes - Shepherdstown



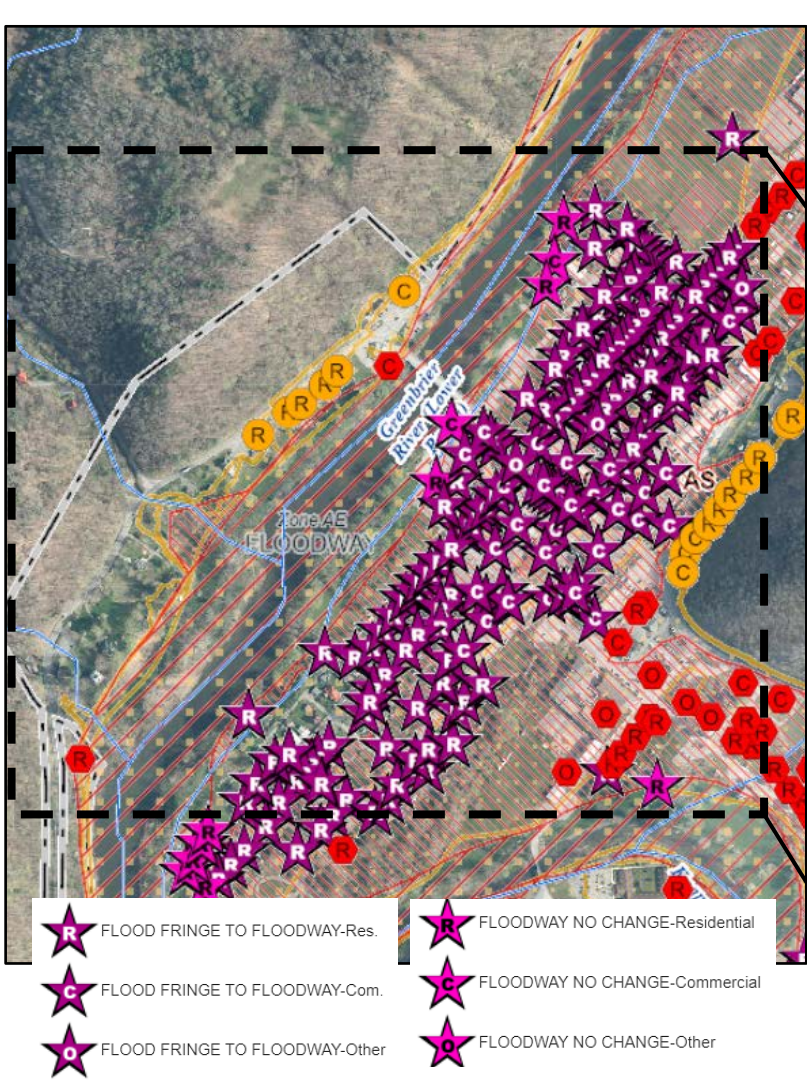
Map Changes – Jefferson County



Buildings in Preliminary Floodway

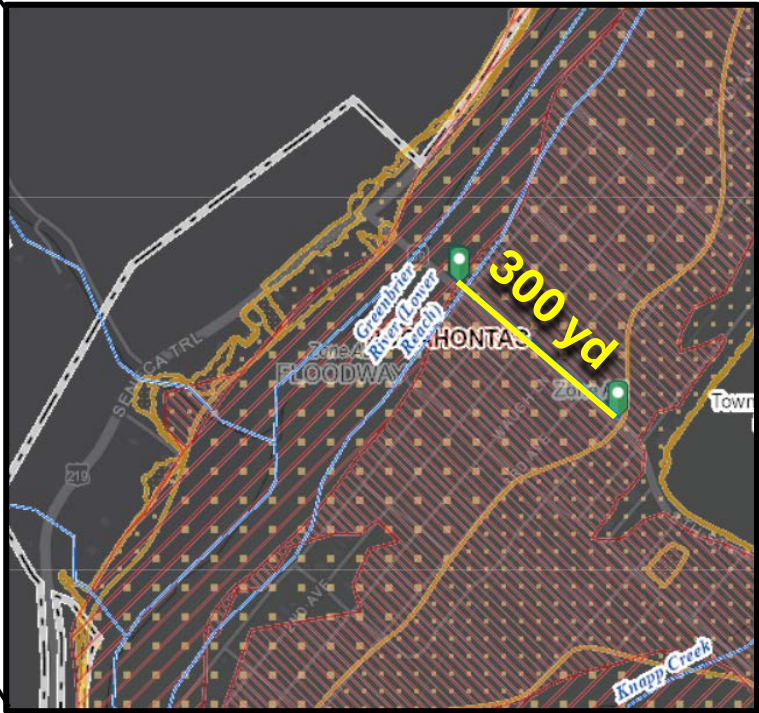
Floodway Increase in Marlinton

Buildings in the floodway channel of a stream or close to the flood source, will be subject to the greatest flood depths, highest velocities, and greatest debris potential.



Community	Buildings in Preliminary Floodway	Buildings in Effective Floodway	Net Change in Floodway
Marlinton	190	14	+ 176

Floodway width expanded significantly up to 300 yards (900 ft)



Base Flood Elevation increased to about 2 feet

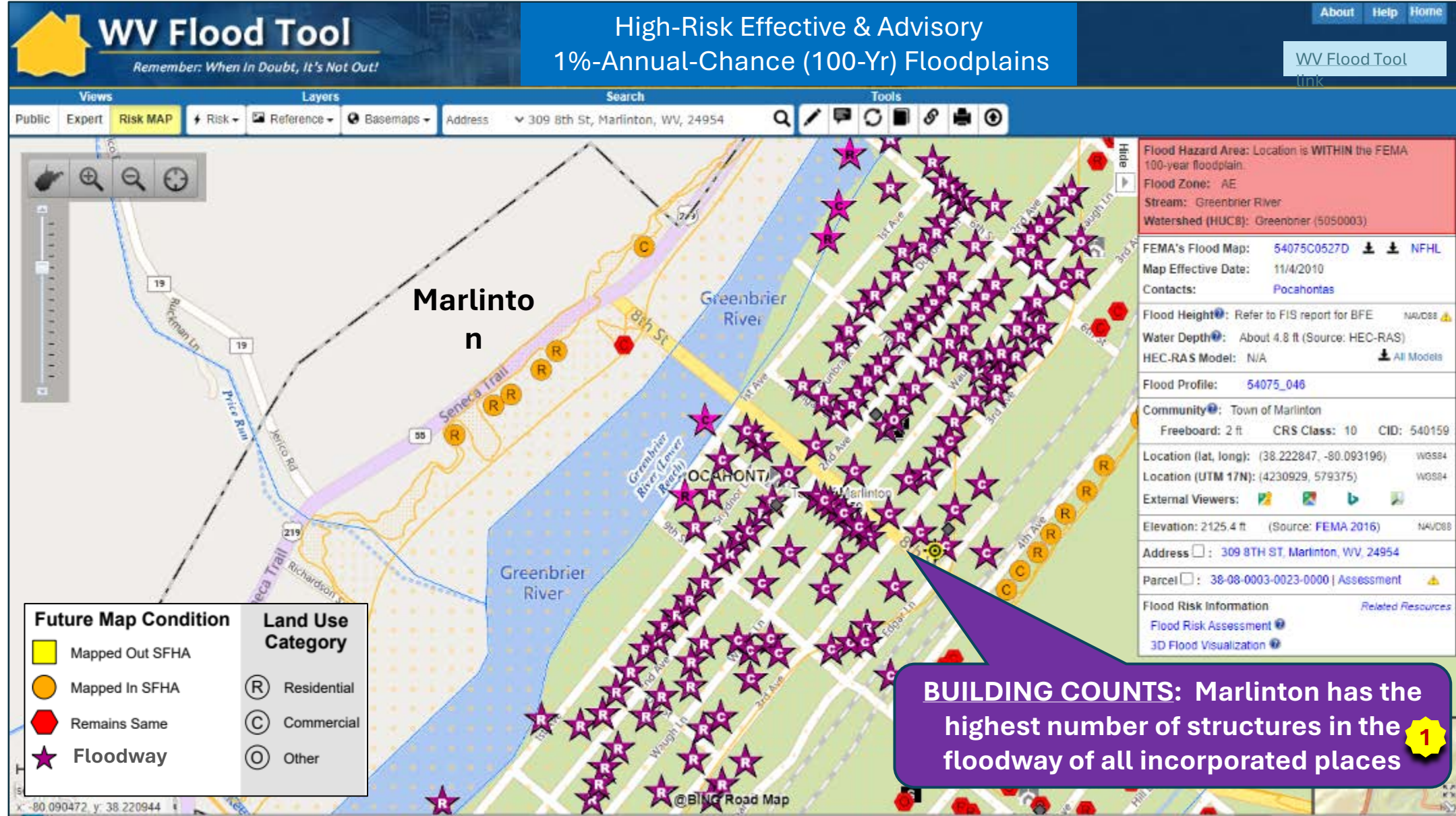


[Flood Tool Link](#)

Risk Indicators: (Marlinton)

TOP 10%

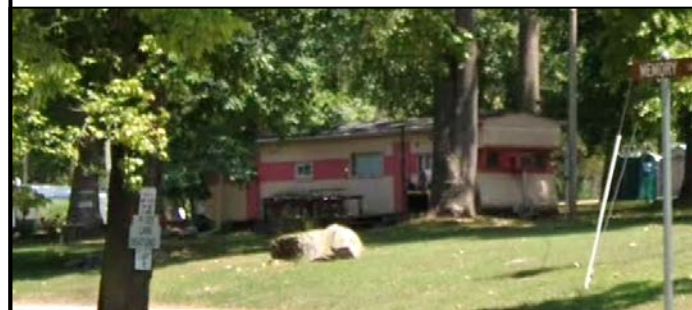
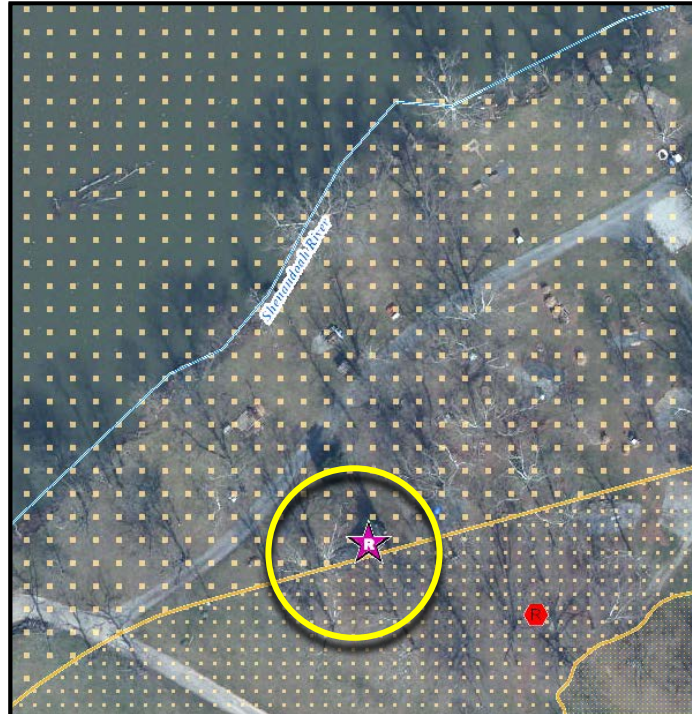
Top 10% rankings among 229 incorporated places



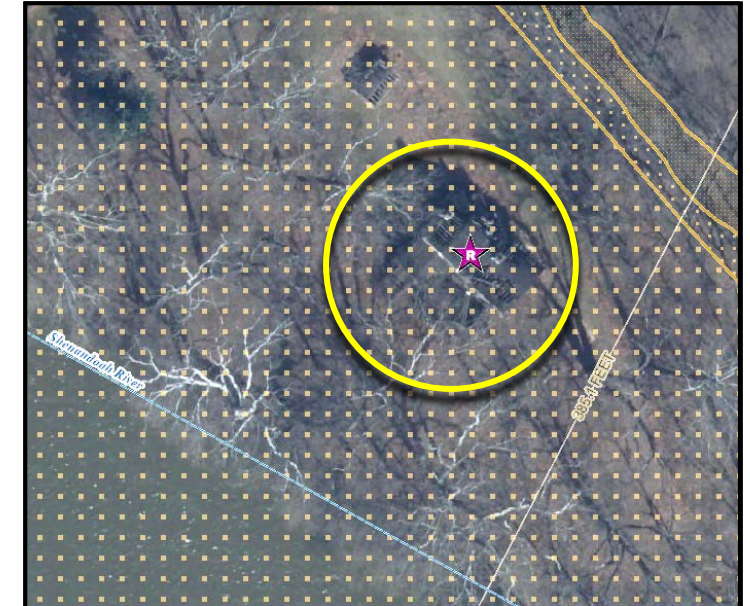
Buildings Mapped into Floodway



Double-wide Mobile Home in Ranson (FD: 2.2 ft)
\$33K; Year Built: 1993 (Post-FIRM)
(Building ID: [19-08-0006-0019-0001_407](#))



Single-wide Mobile Home in Jefferson County* (FD: 7.0 ft)
\$25K; **Minus Rated: 3.5 ft**; Year Built: Unknown
(Building ID: [19-02-0020-0031-0000_30](#))



Single Family Dwelling in Jefferson County* (FD: 14.0 ft)
\$8K; **Minus Rated: 10.3 ft**; Year Built: 1979 (Pre-FIRM)
(Building ID: [19-06-008F-0007-0000_457](#))

*Structures mapped from
Floodplain Fringe into Floodway*



Risk Communications: SFHA Map Change Letters

Incorporate 1% Floodplain Building Risk Assessment Inventory into **Mitigation** and **NFIP/CRS Management** Activities



FEMA Region 3 Toolkit for New Flood Studies

City of White Sulphur Springs

Date: 10/14/2021

Dear **SMITH JOHN**:

This letter is a test to show the use of mail merge and the data we can retrieve for it. I copied the first two paragraphs from the Local Officials Toolkit template and added the last two paragraphs for demonstration purposes.

A multi-year project to re-examine **City of White Sulphur Springs's** flood zones and develop detailed digital flood hazard maps has been completed. The new maps, also known as Flood Insurance Rate Maps (FIRMs), were just released for public view. The new maps reflect current flood risk based on the latest data and a more accurate understanding of our area's topography. As a result, you and other property owners throughout **GREENBRIER COUNTY** will have up-to-date, Internet-accessible information about flood risk to your property.

How will these changes affect you?

Based on the new maps, your property is being mapped into a higher risk flood zone, known as the Special Flood Hazard Area (SFHA). If you have a mortgage from a federally regulated lender and your property is in the SFHA, you are required by Federal law to carry flood insurance when these flood maps are put into effect. We recommend that you use this time to contact your insurance agent to get the most favorable rate and learn about options offered by the National Flood Insurance Program (NFIP) for properties being mapped into higher risk areas for the first time.

You can find your property on the WV Flood tool in one of two ways: first, you can go to the following link in a web browser: <https://mapwv.gov/flood/map/?wkid=102100&x=-8939196.678447664&y=4550352.316266677&l=13&v=2>. Or, you can go to <https://mapwv.gov/> map and enter your address, **177 PATTERSON ST, WHITE SULPHUR SPRINGS, WV, 24986**, in the search bar.

Your property is within the **Howard Creek** flood zone and has a flood depth of **1.0 feet**. Its FIRM status is **Pre-FIRM**.

Mail Merge Template for SFHA Mapped-in Structures

Counties which recently sent outreach letters to homeowners:

- Hardy County Risk MAP
- Kanawha County - Elk River PMR
- Greenbrier County Risk MAP

Jefferson County and Shepherdstown have 55 and 29 buildings, respectfully, mapped into the SFHA


West Virginia Risk Explorer

New Building-Level Risk Tools enable further exploration of impacted buildings:

[Morgan Mapped-In Structures](#)

[Morgan Mapped-Out Structures](#)

[Morgan Risk Index \(incl. Top 20% Risk Indicators Report\)](#)

**West Virginia Risk Explorer**
Localized risk assessment tools for analysis and visualization
(BETA Version)

Risk MapsRisk ReportsDashboardsBL RiskVisualizationsLearn More











Mapped into SFHA

Select Geographic ScaleStateSelect Geographic EntityWest Virginia

COLUMNSAdvanced SearchPRIMARY STRUCTURES TABLEReport Date: March 2025Metadata

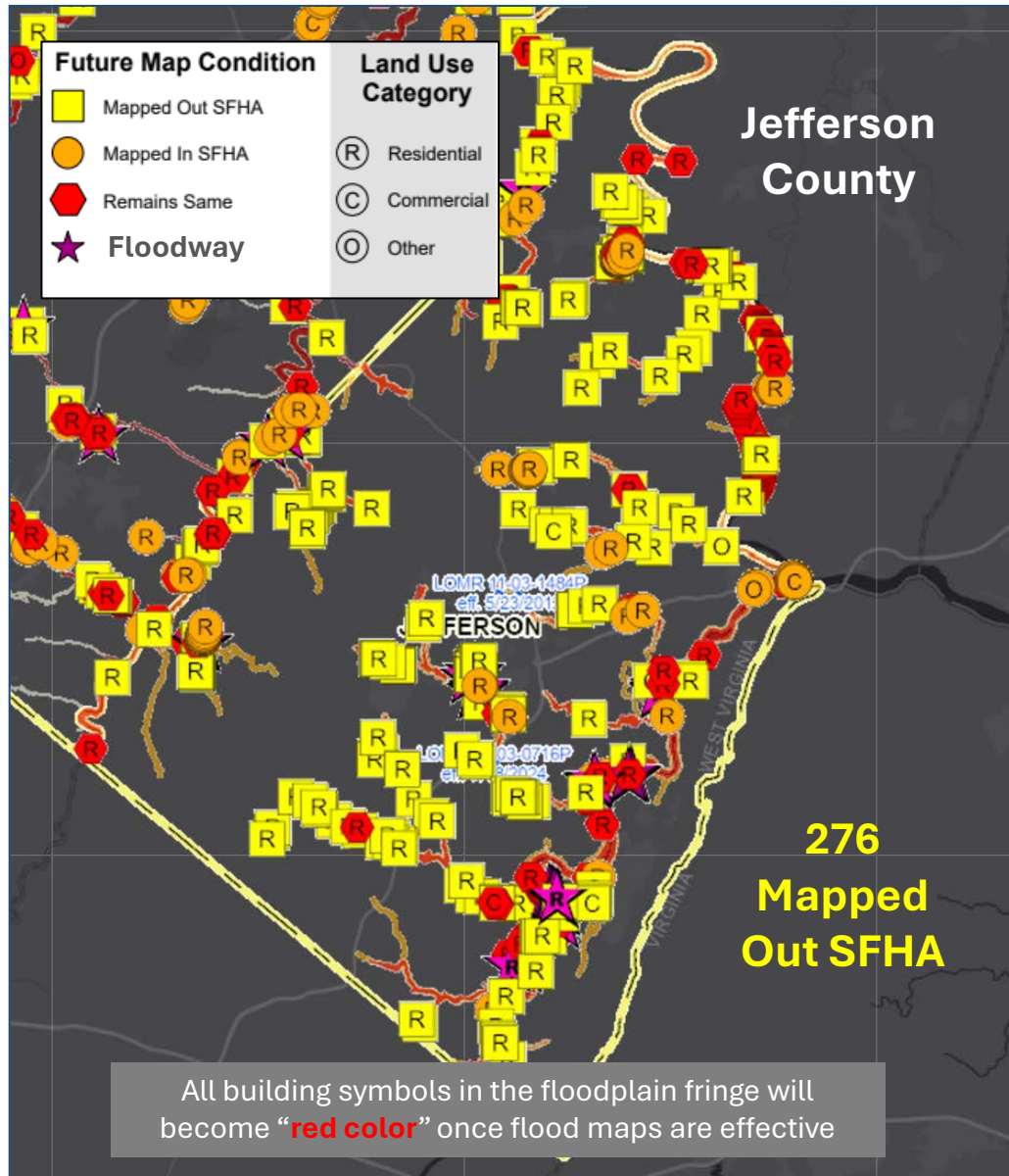
SQL Filter: County = MorganSQL Filter: Symbol_FloodRiskZone IN (Mapped in Floodway-Commercial,Mapped In Floodway-Residential,MAPPED IN-Commercial,MAPPED IN-Other,MAPPED IN-Residential)Clear all Filters

48 Records Selected. Export to CSV (2000 record limit)

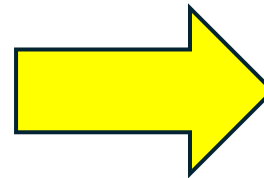
SPATIAL IDENTIFIERS			GEOGRAPHIC UNITS		FLOOD ZONE		BUILDING CHARACTERISTICS	BUILDING DAMAGE ESTIMATE	
Building ID	E-911 Address	Flood Tool	Community	Stream	Flood Zone	SFHA Status	General Occupancy	Flood Depth	Bldg. Damage %
33-01-0017-0014-0006_37	37 SHADE LN, BERKELEY SPRINGS, WV, 25411		Morgan County* - Unincorporated	Sleepy Creek	Draft A	MAPPED IN-Residential	Residential	2.3 Ft	3%
33-06-0012-0017-0002_1162	1162 LUTHER MICHAEL RD, Berkeley Springs, WV, 25411		Morgan County* - Unincorporated	Sleepy Creek Tributary No.3	Draft A	MAPPED IN-Residential	Residential	2.3 Ft	0%
33-01-0011-0031-0000_1426	1426 ECKERD LN, Berkeley Springs, WV, 25411		Morgan County* - Unincorporated	Sleepy Creek	Draft A	MAPPED IN-Residential	Residential	2.1 Ft	14%
33-04-041A-0011-0001_44	44 ALPINE DR, GREAT CACAPON, WV, 25422		Morgan County* - Unincorporated	Cacapon River	Draft AE	MAPPED IN-Residential	Residential	2.1 Ft	1%
33-01-0010-0020-0006_9999	9999 MARTINSBURG RD, BERKELEY SPRINGS, WV, 25411		Morgan County* - Unincorporated	Sleepy Creek	Draft A	MAPPED IN-Residential	Residential	2.0 Ft	0%
33-04-0016-0003-0018_336	336 YOUNGBLOOD RD, GREAT CACAPON, WV, 25422		Morgan County* - Unincorporated	Long Hollow Run	Draft A	MAPPED IN-Residential	Residential	1.9 Ft	0%
33-06-0010-0005-0002_15	15 ROCK GAP RD, BERKELEY SPRINGS, WV, 25411		Morgan County* - Unincorporated	Rock Gap Run	Draft A	MAPPED IN-Residential	Residential	1.8 Ft	2%
33-08-0003-0008-0001_3607	3607 VIRGINIA LINE RD, Berkeley Springs, WV, 25411		Morgan County* - Unincorporated	Middle Fork Sleepy Creek	Draft A	MAPPED IN-Residential	Residential	1.6 Ft	0%
33-07-0006-0024-0001_7648	7648 MARTINSBURG RD, BERKELEY SPRINGS, WV, 25411		Morgan County* - Unincorporated	Meadow Branch	Draft A	MAPPED IN-Residential	Residential	1.5 Ft	18%
33-04-0024-0001-0001_5560	5560 ROCKFORD RD, GREAT CACAPON, WV, 25422		Morgan County* - Unincorporated	Cacapon River	Draft A	MAPPED IN-Residential	Residential	1.4 Ft	17%

Rows per page: 10<< First< Previous1-10 of 48Next >>Last >>

SFHA Buildings Changes: LOMAs for Mapped Out



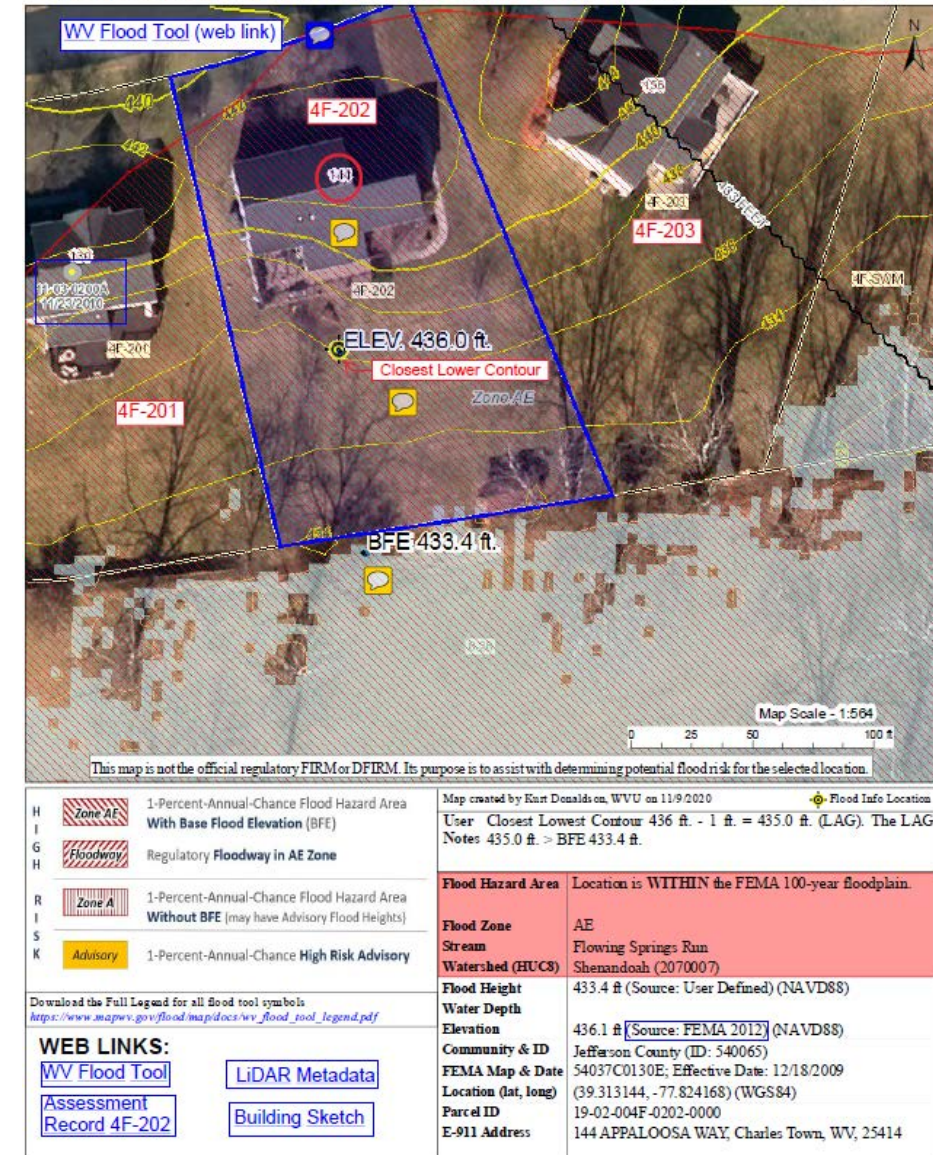
Mapped-out structures of the SFHA may qualify for LOMAs



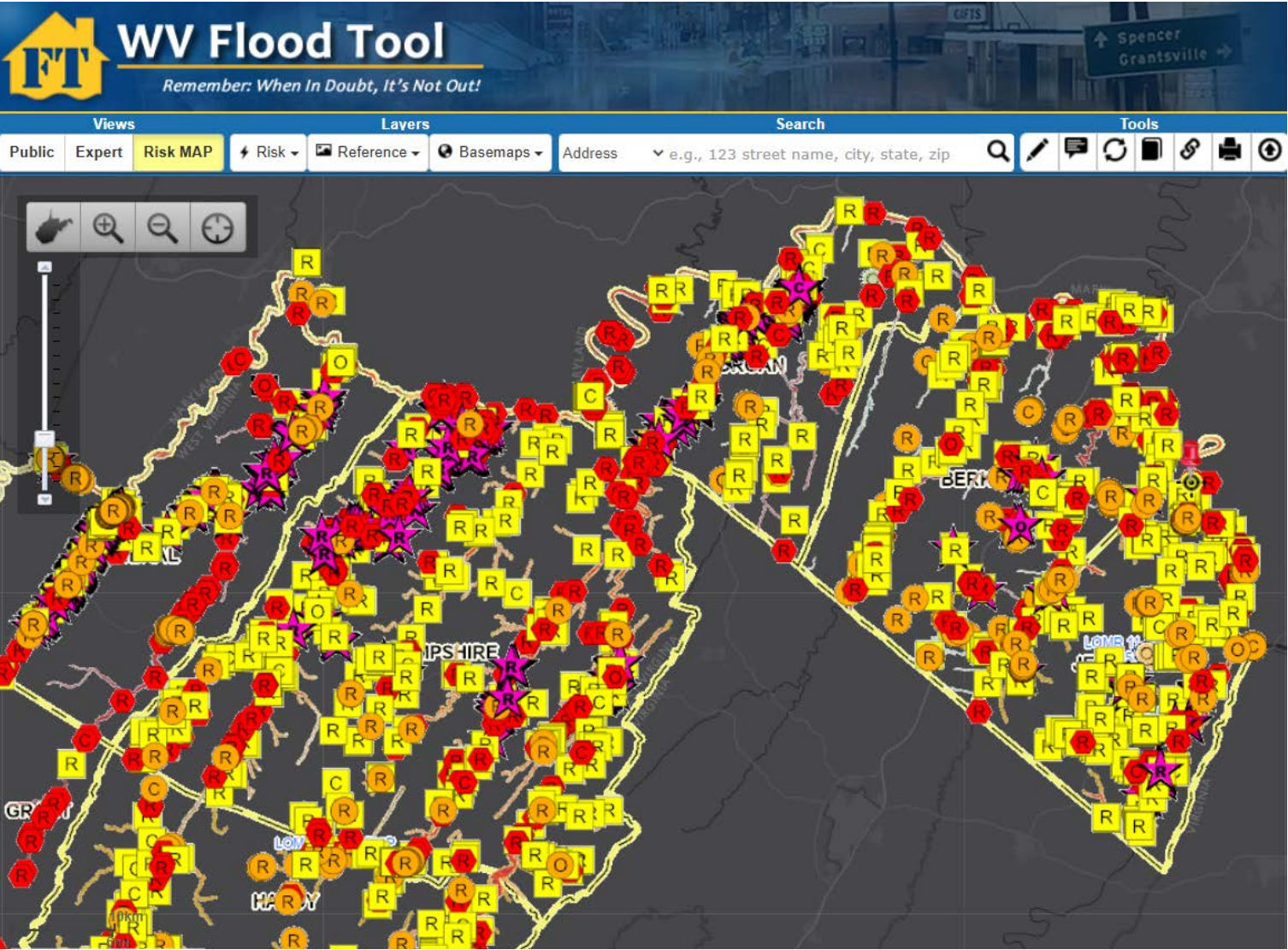
WV Flood Tool
LiDAR LOMA:








[Instructions](#) | [Guide](#)

LOMA Map: 144 APPALOOSA WAY, Charles Town, WV



Buildings Mapped-In / Out of Preliminary SFHA



Future Map Condition		Land Use Category	
	Mapped Out SFHA		Residential
	Mapped In SFHA		Commercial
	Remains Same		Other
	Floodway		

Difference between FEMA’s 2009 and 2024 flood studies



WV Flood Tool

Remember: When In Doubt, It's Not Out!

DEMO

[About](#) [Help](#) [Home](#)

Views

Layers

Search

Tools

Public

Expert

Risk MAP

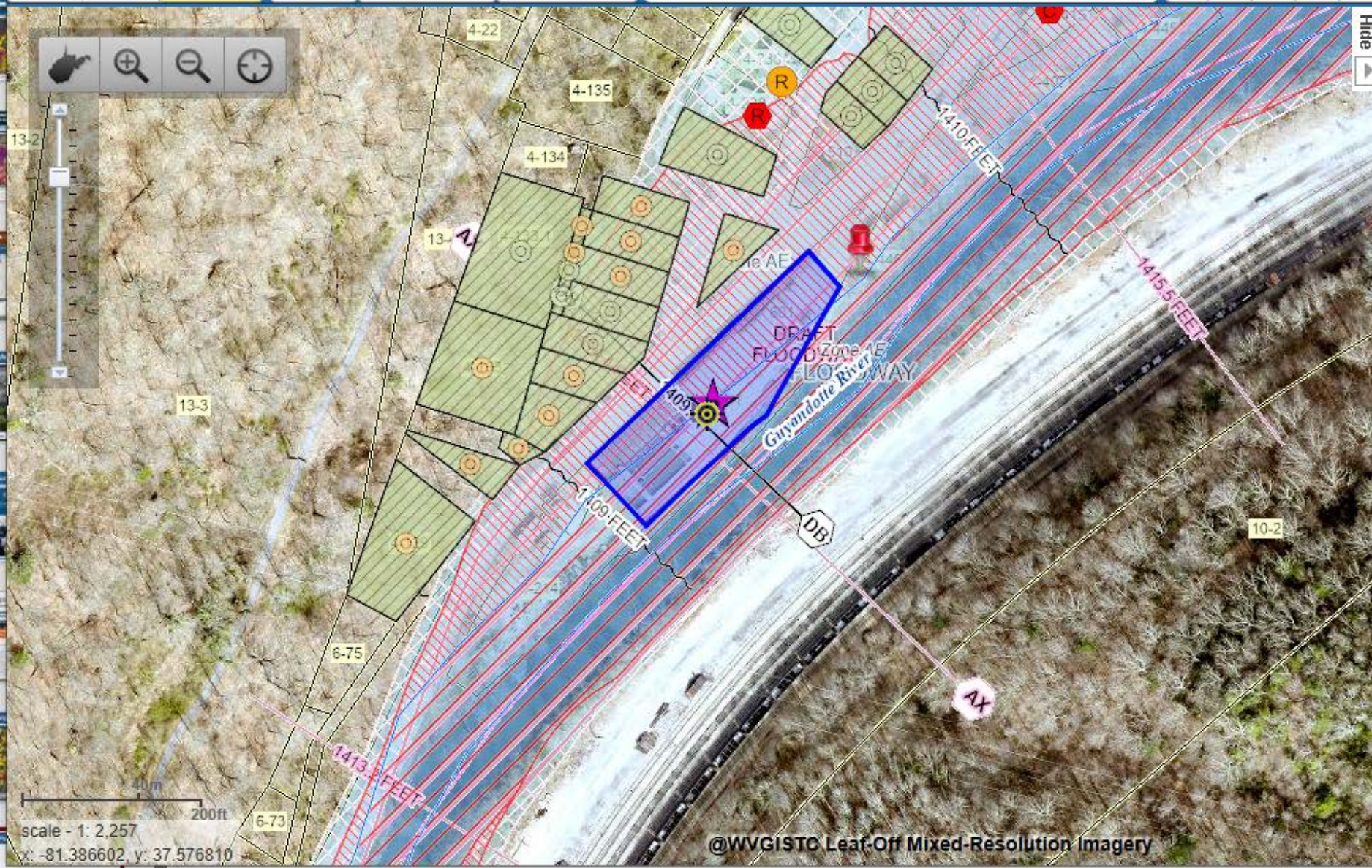
Risk

Reference

Basemaps

Address

601 GUYANDOTTE AVE, MULLENS, WV, 2



Flood Hazard Area: Location is **WITHIN** the FEMA 100-year floodplain and floodway.

Flood Zone: AE (Floodway)

Stream: Guyandotte River

Watershed (HUC8): Upper Guyandotte (5070101)

FEMA's Flood Map: [54109C0309D](#) [Download](#) [NFHL](#)

Map Effective Date: 5/16/2006

Contacts: [Wyoming](#)

Flood Height: Refer to FIS report for BFE [NAVD88](#)

Water Depth: About 4.6 ft (Source: HEC-RAS)

HEC-RAS Model: N/A [All Models](#)

Flood Profile: [54109_032](#)

Community: City of Mullens

Freeboard: 2 ft CRS Class: 10 CID: 540218

Location (lat, long): (37.578164, -81.388453) [WGS84](#)

Location (UTM 17N): (4159083, 465701) [WGS84](#)

External Viewers: [Google Maps](#) [ArcGIS](#) [Leaflet](#) [Mapbox](#)

Elevation: 1409.9 ft (Source: FEMA 2018-20) [NAVD88](#)

Address: [601 GUYANDOTTE AVE, MULLENS, WV, 24870](#)

Parcel: [55-06-0004-0214-0001](#) | [Assessment](#) [Warning](#)

Flood Risk Information

[Related Resources](#)

[Flood Risk Assessment](#)

[3D Flood Visualization](#)

[Link to WV Risk Explorer](#)

[Flood Tool Link](#)