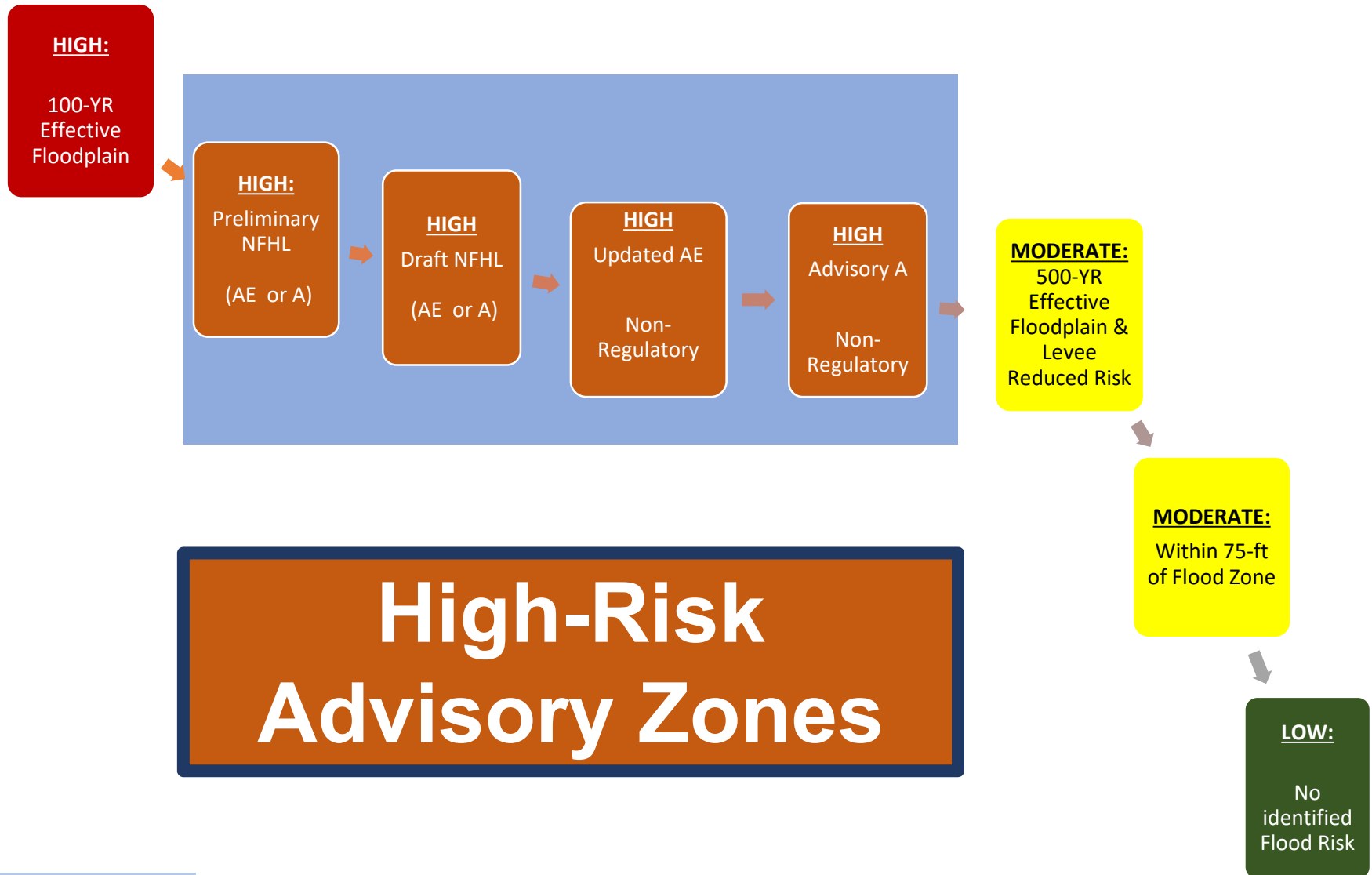


Flood Zone Determination Sequence



WV Flood Map Revisions

A major driver for flood map revisions in West Virginia is new Light Detection and Ranging (LiDAR) elevation data that allows for a dramatic increase in the accuracy of flood hazard mapping. This new high-resolution topography supports 1-foot contours and 1-meter digital elevation models. Ongoing flood studies in West Virginia are categorized as FEMA-Initiated or State-Initiated Studies.

FEMA-Initiated Studies: A FEMA-initiated study or restudy revises some or all of a community's effective flood map, resulting in both regulatory and flood risk products. FEMA's Risk Mapping, Assessment, and Planning (Risk MAP) program provides communities with flood risk information that is used for developing regulatory and flood risk products. Once the new regulatory flood maps are finalized, a community has six months to adopt the map revisions in their local floodplain ordinance. For example, the 2016 Flood Study used new topography and high-water marks to create detailed flood studies with regulatory products for eight stream reaches in Greenbrier, Kanawha, Monroe, Nicholas, Summers, and Webster counties.

State-Initiated Studies: State-initiated map revisions, typically through the FEMA's CTP Initiative, are smaller-scale studies limited in size and scope. State flood mapping initiatives incorporate new topography with hydrology and hydraulics (H&H) models to generate high-risk advisory flood zone data. This includes the statewide map initiative of Approximate A Zones using engineering analyses to produce new floodplain boundaries, Advisory Flood Heights (Advisory BFEs) and flood depth grids for streams draining a minimum two-square mile watershed area. The advisory flood height values should be used with caution for sites in proximity to hydraulic structures (bridges/culverts/dams) or near the confluence of a larger stream. Another statewide map initiative involves the redelineation of AE Zones to produce high-risk advisory flood zones, non-restudy BFE and water depth grids. Redelineation is the method of updating effective flood hazard boundaries to match updated topographic data based on the computed water surface elevations from effective models; no new engineering analyses are performed as part of the redelineation methodology. Importantly, State-Initiated Studies produce high-risk advisory flood hazard information that will likely be incorporated into future effective regulatory or community identified floodplains.

Map Revisions→High Risk Advisory Zones

Advisory Flood Zone*	Map Revision Type	Initiated	Applicable Flood Zones
Preliminary NFHL or DFIRM	Risk MAP Restudy or Study	FEMA	A and AE Zones
Draft NFHL or DFIRM	Risk MAP Restudy or Study	FEMA	A and AE Zones
Advisory A	AFH Model-Backed Studies	State CTP	Approximate A Zone
Updated AE	Non-Restudy Redelineation	State CTP	AE Zone

* Note: Advisory Floodplains may be mapped outside of the SFHA of the official FIRM

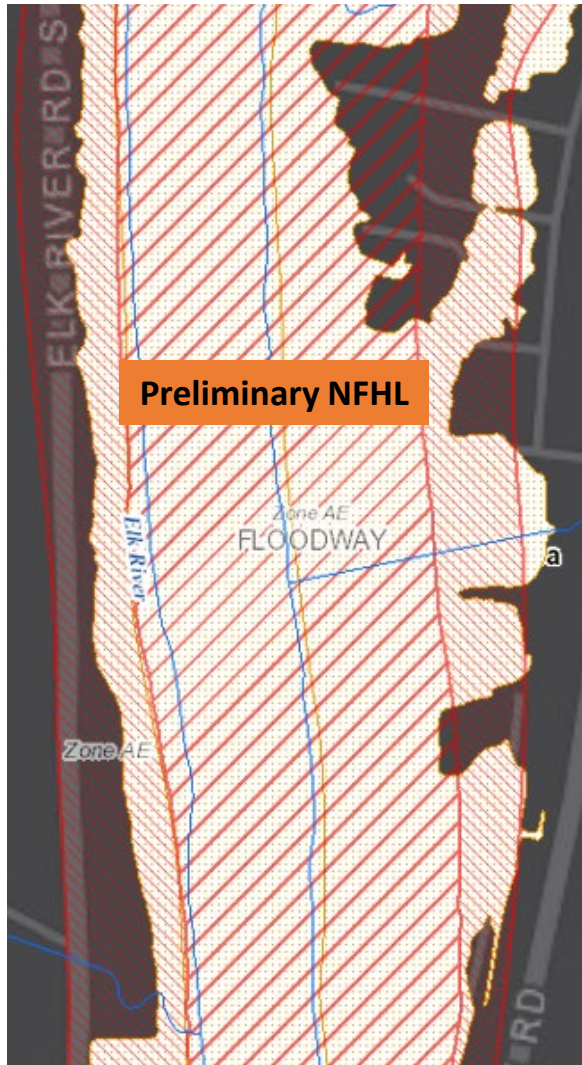
High-Risk Advisory Zone Flood Products:

(1) Advisory Floodplain Boundary, (2) Flood Height Grid, (3) Flood Depth Grid

High Risk Advisory Zones

High-Risk Advisory Zones: High-risk advisory zones – **Preliminary NFHL, Draft NFHL, Advisory A, or Updated AE** – are non-regulatory 1%-annual-chance flood zones represented as orange-colored flood zones in the WV Flood Tool. These advisory flood zones are generated from new model-backed flood studies or from redelineation mapping. Redelineation is the method of updating effective flood hazard boundaries to match updated topographic data based on the computed water surface elevations from effective models. The public should be informed that these non-regulatory zones will most likely become effective when new Flood Insurance Rate Maps (FIRM) are published, and thus any development in these zones should be regulated to the same standards as effective high-risk flood zones. In local floodplain ordinances, communities may choose to adopt high-risk advisory zones as "community-identified floodplains" and regulated the same as the Special Flood Hazard Area of the official Flood Insurance Rate Map (FIRM). Besides showing flood prone areas that are likely to be "mapped into the SFHA" in a future FEMA Flood Restudy, the high-risk advisory zones are also beneficial in identifying Letters of Map Amendment (LOMAs) for structures or property that should be "removed from the SFHA."

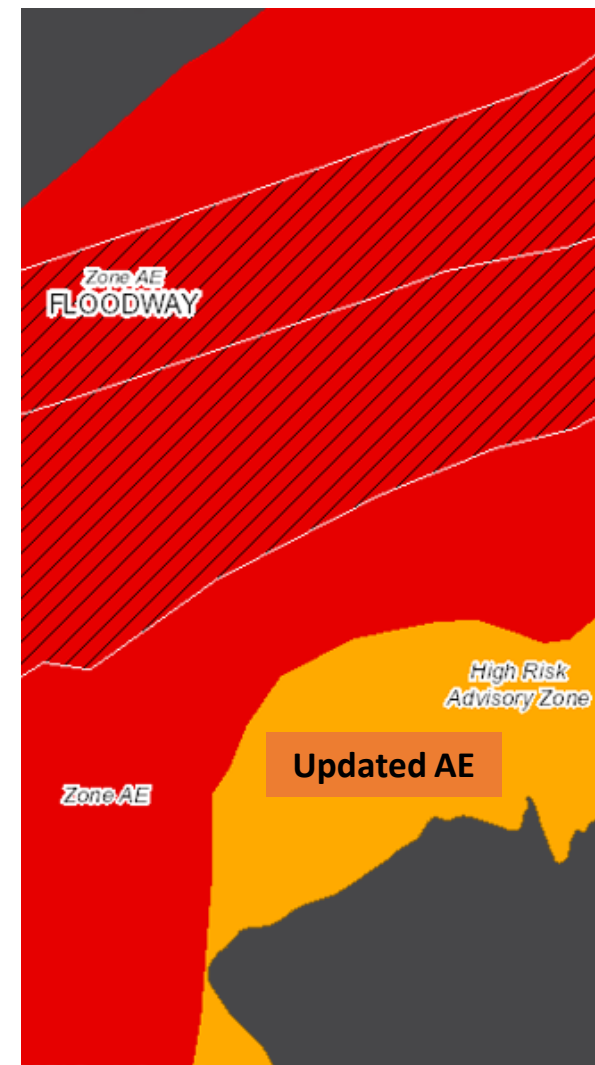
High Risk Advisory Zones



Preliminary/Draft NFHL

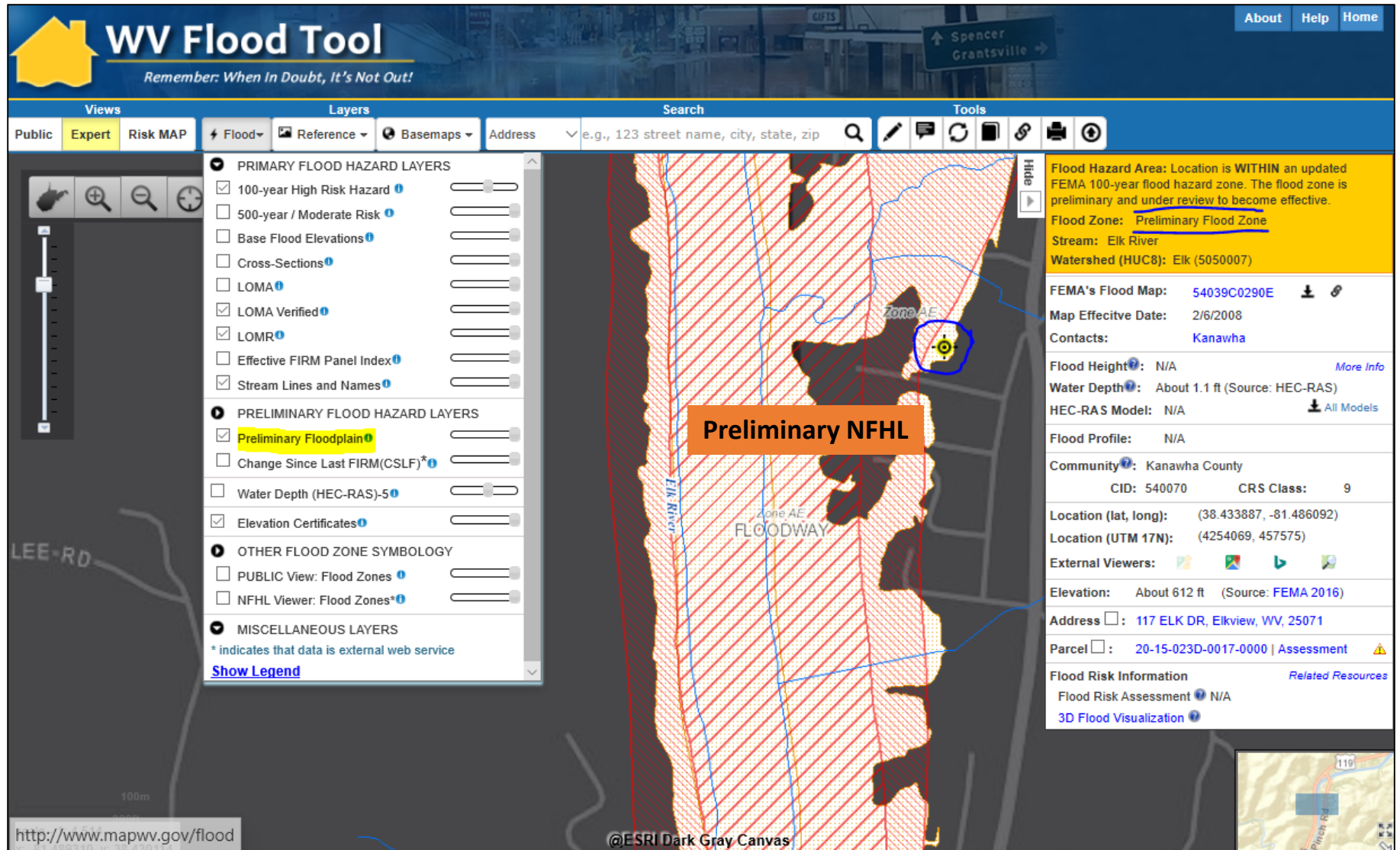


Advisory A



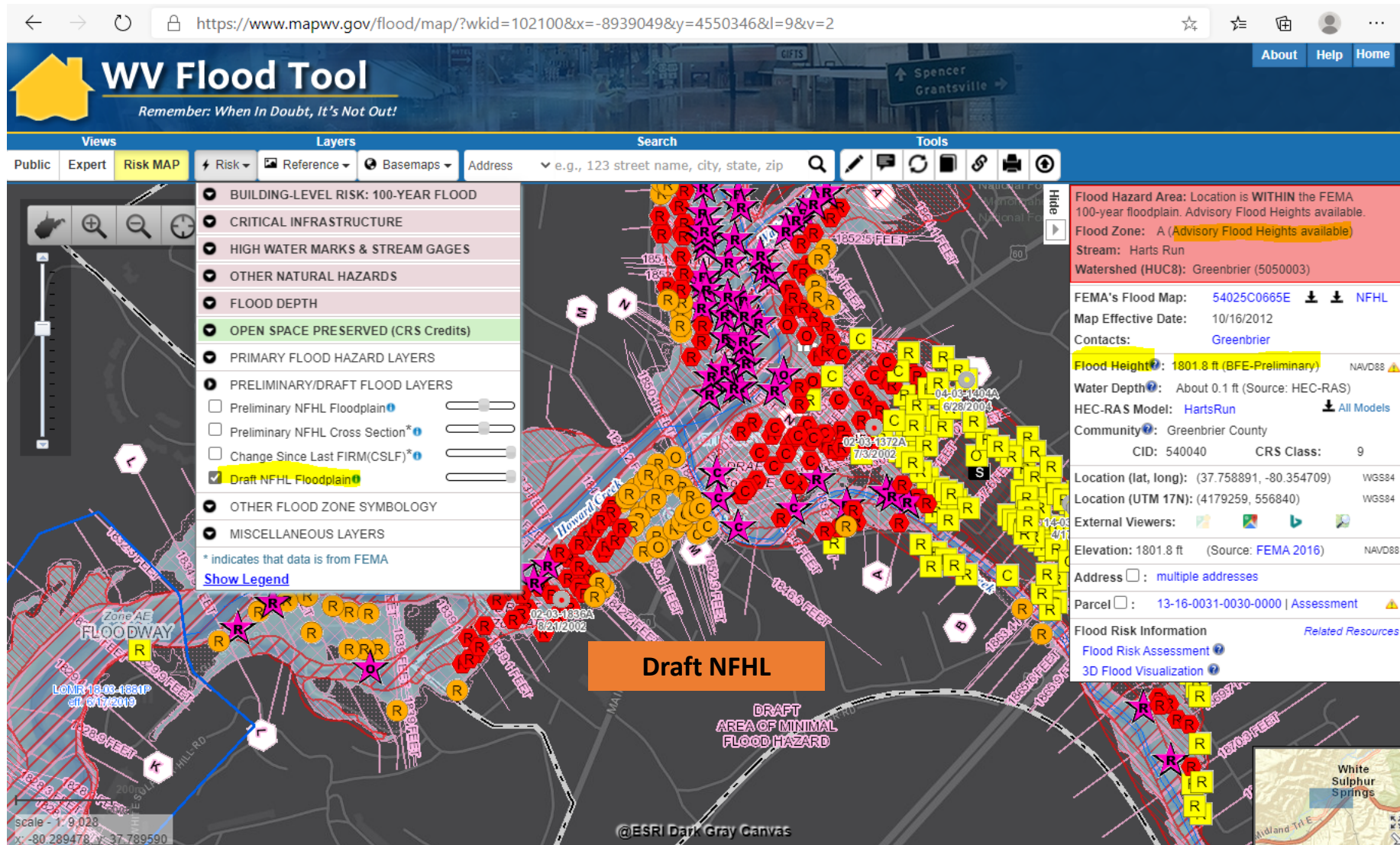
Updated AE

Preliminary NFHL



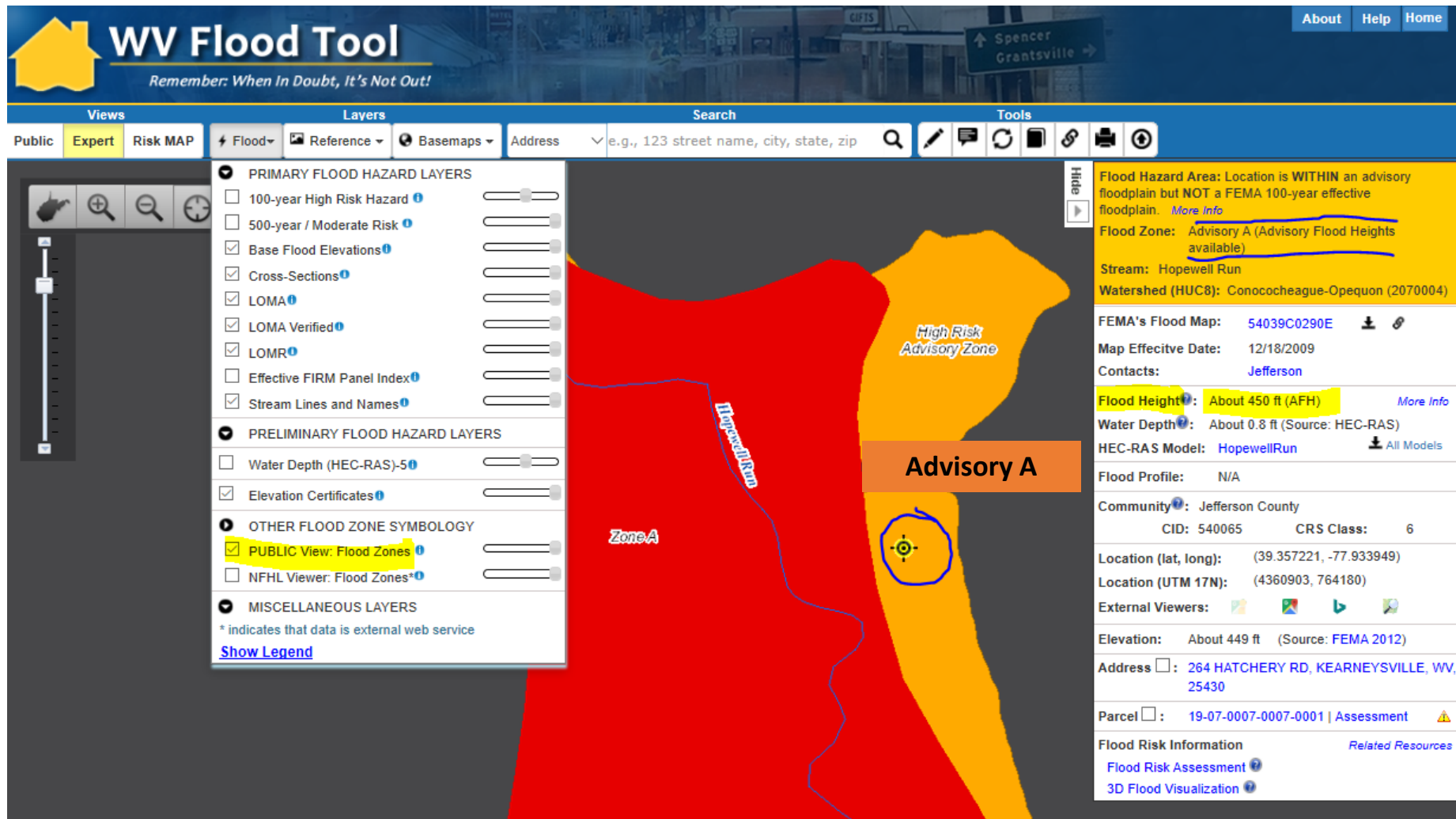
Preliminary NFHL Flood Zone: Preliminary FEMA National Flood Hazard Layers (NFHL) pending to become effective on updated Flood Insurance Rate Maps (FIRMs)

Draft NFHL



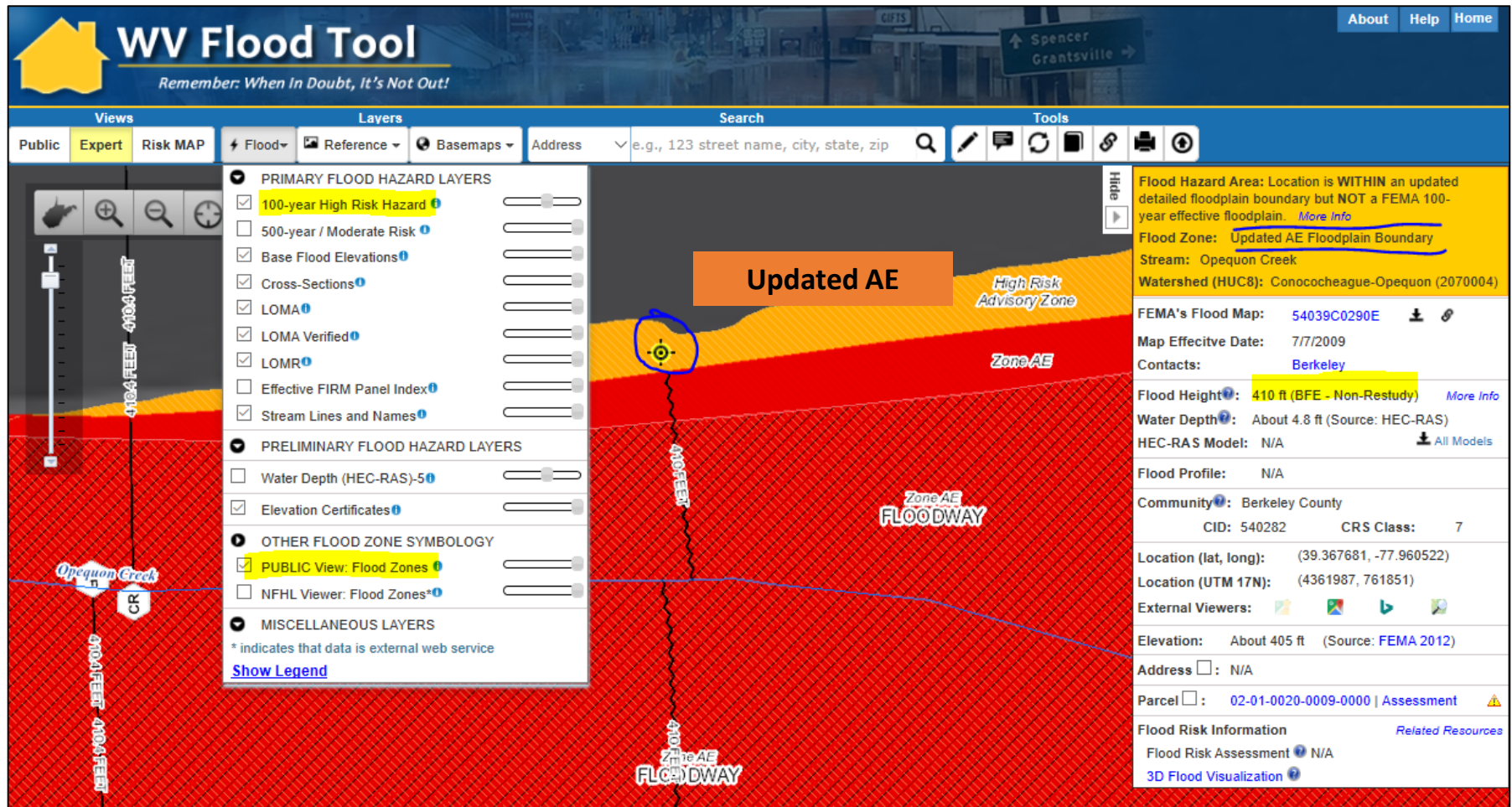
Draft NFHL Flood Zone: Pre-Preliminary FEMA National Flood Hazard Layers (NFHL) pending to become effective on updated Flood Insurance Rate Maps (FIRMs)

Advisory A



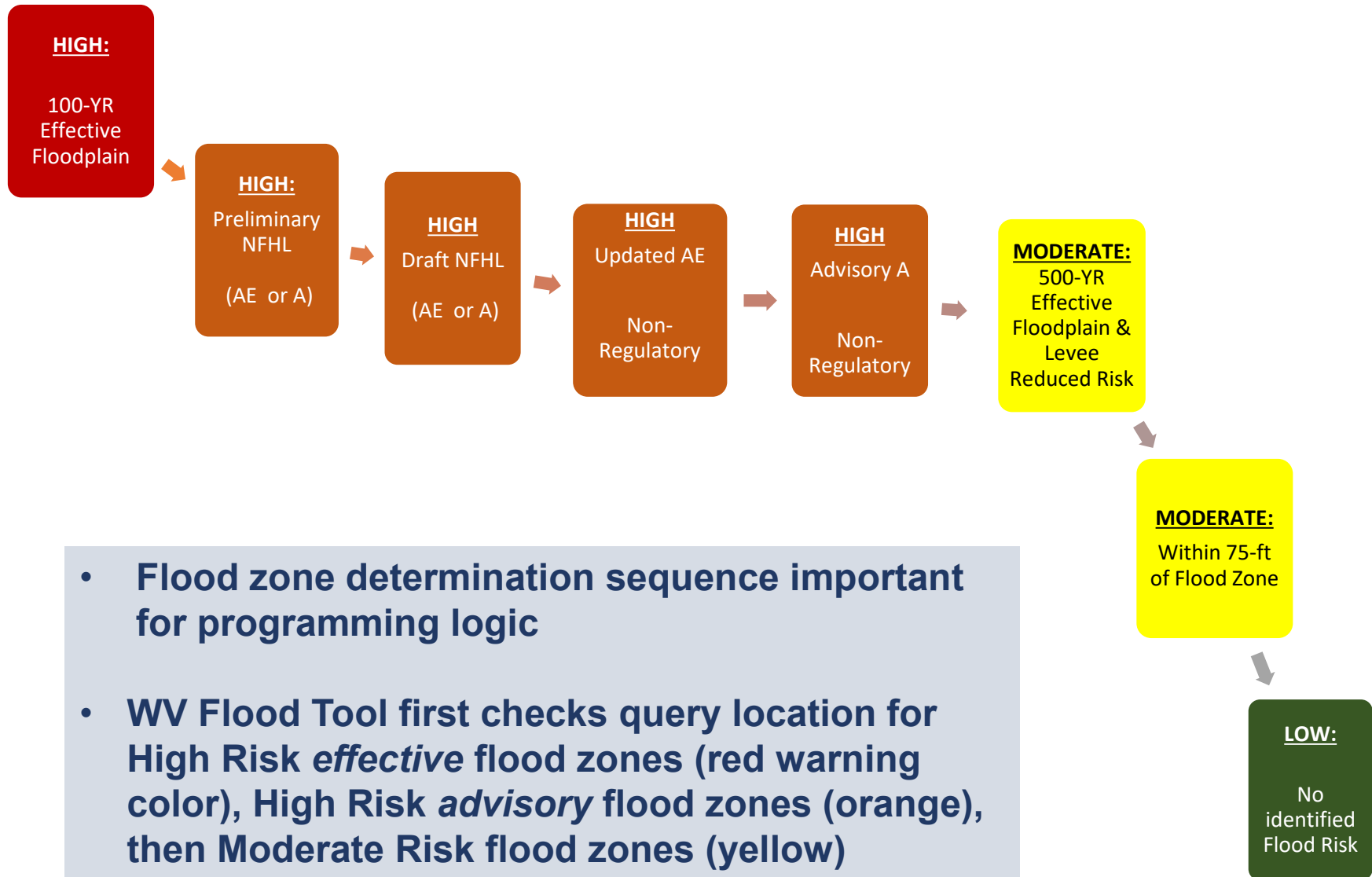
Advisory A Flood Zone: A model-backed Approximate A Zone is determined by using hydrology and hydraulics (H&H) analysis and the best available elevation data. Water Depth and Water Surface Elevation Grids are also companion products of Advisory A Zones.

Updated AE



Updated AE Floodplain Boundary: A Non-Restudy where AE Zones undergo redelineation, a method of updating effective flood hazard boundaries to match updated topographic data based on the computed water surface elevations from effective models. Advisory AE Zones outside the SFHA are high-risk, non-regulatory flood zones.

Flood Zone Determination Sequence



Flood Zone: < zone designation >

Status #	Flood Risk Zone Designation	Message	Floodplain Type Label	WSEL Grid	Flood Degree Risk	Color Warning Status
1	AE, AH (5), AO (2)	Location is WITHIN the FEMA 100-year floodplain.	Effective 100 yr Zone AE, AH, AO	BFE-R or BFE-NR	High	Red
2	AE (Floodway)	Location is WITHIN the FEMA 100-year floodplain and floodway.	Effective 100 yr Zone AE, AH, AO - Floodway	BFE-R or BFE-NR	High	Red
3	A	Location is WITHIN the FEMA 100-year floodplain.	Effective 100 yr Zone A	< None >	High	Red
4	A (Advisory Flood Heights available)	Location is WITHIN the FEMA 100-year floodplain. Advisory Flood Heights available.	Effective 100 yr Zone A <i>and</i> Advisory Zone A	AFH or BFE-P	High	Red
5	Preliminary NFHL Flood Zone	Location is WITHIN an updated FEMA 100-year flood hazard zone. The flood zone is preliminary and under review to become effective.	Preliminary 100 yr Zone AE or A (Shaded X not displayed or shown on Flood Query Results Panel)	BFE-P, then BFE-R, BFE-NR, AFH	High	Orange
6	Preliminary Flood Zone (Floodway)	Location is WITHIN an updated FEMA 100-year flood hazard zone and floodway. The flood zone is preliminary and under review to become effective.	Preliminary 100 yr Zone AE – Floodway	BFE-P, then BFE-R, BFE-NR, AFH	High	Orange
7	Draft NFHL Flood Zone	Location is WITHIN an updated FEMA 100-year flood hazard zone. The flood zone is DRAFT and under review to become PRELIMINARY.	Draft 100 yr Zone AE or A	BFE-P (A or AE Zones only)	High	Orange
8	Updated AE Floodplain Bdry.	Location is WITHIN an updated detailed floodplain boundary but NOT a FEMA 100-year effective floodplain.	Updated Zone AE	BFE-NR	High	Orange
9	Advisory A	Location is WITHIN an advisory floodplain but NOT a FEMA 100-year effective floodplain.	Advisory Zone A	AFH	High	Orange
10	Shaded X (500-YR Flood)	Location is WITHIN a moderate flood risk hazard such as a FEMA 500-year floodplain.	Zone X - 0.2 PCT ANNUAL CHANCE FLOOD HAZARD	< None >	Moderate	Yellow
11	X (Levee Protected)	Location is PROTECTED by a levee from a 100-year flood	Zone X - AREA WITH REDUCED FLOOD RISK DUE TO LEVEE	< None >	Moderate	Yellow
12	Near Flood Zone	Location is NOT WITHIN identified flood hazard area, but within 75 feet of an identified flood hazard area.	<i>Separate Buffer Layer</i>	< None >	Moderate	Yellow
13	Out of Flood Zone	Location is NOT WITHIN any identified flood hazard area. Unmapped flood hazard areas may be present.	<i>No Record Found</i>	< None >	Low	Green

Three Degrees of Risk: High, Moderate, Low. Four Warning Status Colors: In 100-YR Effective Floodplains (red), non-regulatory Preliminary/Draft NFHL, Advisory A, and Updated AE floodplains (orange), moderate risk or close to high- risk zones (yellow), and low risk (green). The query consists of stacked floodplain boundary layers (see next slide)

Flood Height Grids

Gridded Flood Height	Source	Applicable Zones
BFE Restudy	Risk MAP Studies or Physical Map Revisions (PMR)	A and AE Zones
BFE Preliminary*	Preliminary/Draft NFHL	A and AE Zones
BFE Non-Restudy*	Updated AE Redelineation	AE Zone
Advisory Flood Heights (AFH)*	AFH Model-Backed Studies	Approximate A Zone

* May include Advisory BFEs redelineated outside of official FIRM

4 Sources for Water Surface Elevation Grids:
BFE Restudy, BFE Preliminary, BFE Non-Restudy, Advisory Flood Height

Flood Height: < Value >

Status #	Flood Height Designation	Flood Zones	Message for FLOOD HEIGHT:	Source Message on Query Panel	More Info Link on Flood Query Results Panel
1	Base Flood Elevation (Restudy) BFE Grid	AE Zones Flood Zone Statuses 1, 2, 5, 6	< value> ft. <i>(Display to 0.1)</i> <i>(Clickable GRID value)</i>	(BFE Restudy) <i>In future may include A Zones</i>	Advisory Flood Heights (AFH) for Approximate A Zones: CAUTION CAUTION!! The advisory flood height should be used with caution in the proximity of a culvert, bridge, flood control structure or other impoundment since stream crossings were not included in the hydraulic analyses for approximate floodplains. Also, if the site is close to the confluence with a larger stream, compare the advisory flood height at the location of interest to the advisory flood height or Base Flood Elevation on the larger stream to determine whether the site is within the backwater influence of the larger stream. More information: http://www.mapwv.gov/flood/content/documents/AFHhandout.pdf Restudy and Non-Restudy AE Zones: To validate base flood elevations refer to the Flood Profiles and Flood Elevation Tables in the FIS Report. Vertical Datum for Flood Heights: The vertical datum of Base Flood Elevations (BFEs) for AE Zones recorded on official FIRMs in West Virginia is NAVD 88, <i>except</i> for the following counties where the FIRMs are referenced to the NGVD 29 Datum: Hampshire, Logan, McDowell, Mercer, Monroe, Ohio, and Putnam. The vertical datum of all Advisory Flood Height values for Approximate A Zones in West Virginia is NAVD 88, <i>except</i> for McDowell County which is NGVD 29. More information.
2	Base Flood Elevation (Non-Restudy) Updated AE Grid	AE Zones Flood Zone Statuses 1, 2, 8	< value> ft. <i>(Display to 0.1)</i> <i>(Clickable value)</i>	(BFE Non- Restudy)	
3	Base Flood Elevation (Non-Restudy)	AE Zones Flood Zone Statuses 1 & 2	<i>no value</i>	Refer to FIS report for BFE	
4	Advisory Flood Height AFH Grid or BFE-P Grids	A Zones Flood Zone Statuses 4, 5, 6, & 9. Possible status 10.	About < value> ft. <i>(Display to 0.1)</i> <i>(Clickable value)</i>	(AFH)	
5	Preliminary Flood Height (BFE-P)	Flood Zone Statuses 5 to 7. BFE Preliminary Grid takes priority.	<i>5a, 6a, 7 = value</i> <i>5b, 6b = no value</i>	a) Grid value (BFE Preliminary), then BFE-R, BFE-NR, AFH b) No Value. "See FEMA Change Viewer link for Prelim. BFE"	
6	No Flood Height Information	Flood Zone Statuses 3 and 4; 9 through 13	<i>no value</i>	None (Status 3 or 4) N/A (Statuses 9-13)	

Invisible Composite Query Rasters for flood height values of Water Surface Elevation Level (WSEL) layers: (1) *Advisory Flood Height* WSEL AFH Grid (WSEL_1PCT_AFH_5ft); (2) *BFE Restudy* WSEL BFE Grid (WSEL_1PCT_BFE_1m); *Updated AE/BFE Non-Restudy* (WSEL_1PCT_Updated_AE)

Flood Height Grids (NFHL)

National Flood Hazard Layer (NFHL)

- Effective floodplain layers
- Preliminary floodplain layers
- Draft floodplain layers

Restudy BFE Grids

- BFE-Restudy
- BFE-Preliminary

Flood Height Grids & WV Coverage

Effective DFIRMs

**(Restudy BFEs)
(Preliminary BFEs)**

Flood Heights: BFE Restudy

FLOOD HEIGHTS

Restudy Base Flood Elevation Heights displayed in Flood Results Query Panel. Fractional values displayed to tenth of decimal.

Source: FEMA RiskMAP Restudies

Coverage: Upper Monongahela Watershed (Select Streams)

RiskMAP Upper Mon. Watershed

Flood Query Panel

100-year floodplain and floodway.
Flood Zone: AE (Floodway)
Stream: Deckers Creek
Watershed (HUC8): Upper Monongahela (5020003)

FEMA's Flood Map: 54061C0114F [NFHL](#)
Map Effective Date: 4/5/2019
Contacts: Monongalia

Flood Height: 815.2 ft (BFE – Restudy) [More Info](#)
Water Depth: About 11.5 ft (Source: HEC-RAS)
HEC-RAS Model: N/A [All Models](#)

Flood Profile: 54061_005

Community: City of Morgantown
CID: 540141 **CRS Class:** 10

Location (long, lat): (-79.953462, 39.628911)
Location (UTM 17N): (589815, 4387094)

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

Elevation: About 804 ft (Source: WVU 2017)

Address: 63 DECKER AVE, MORGANTOWN, WV, 26501

Parcel: 31-10-0029-0166-0001
[Assessment](#)

Flood Risk Information [Related Resources](#)

Flood Risk Assessment: N/A

3D Flood Visualization

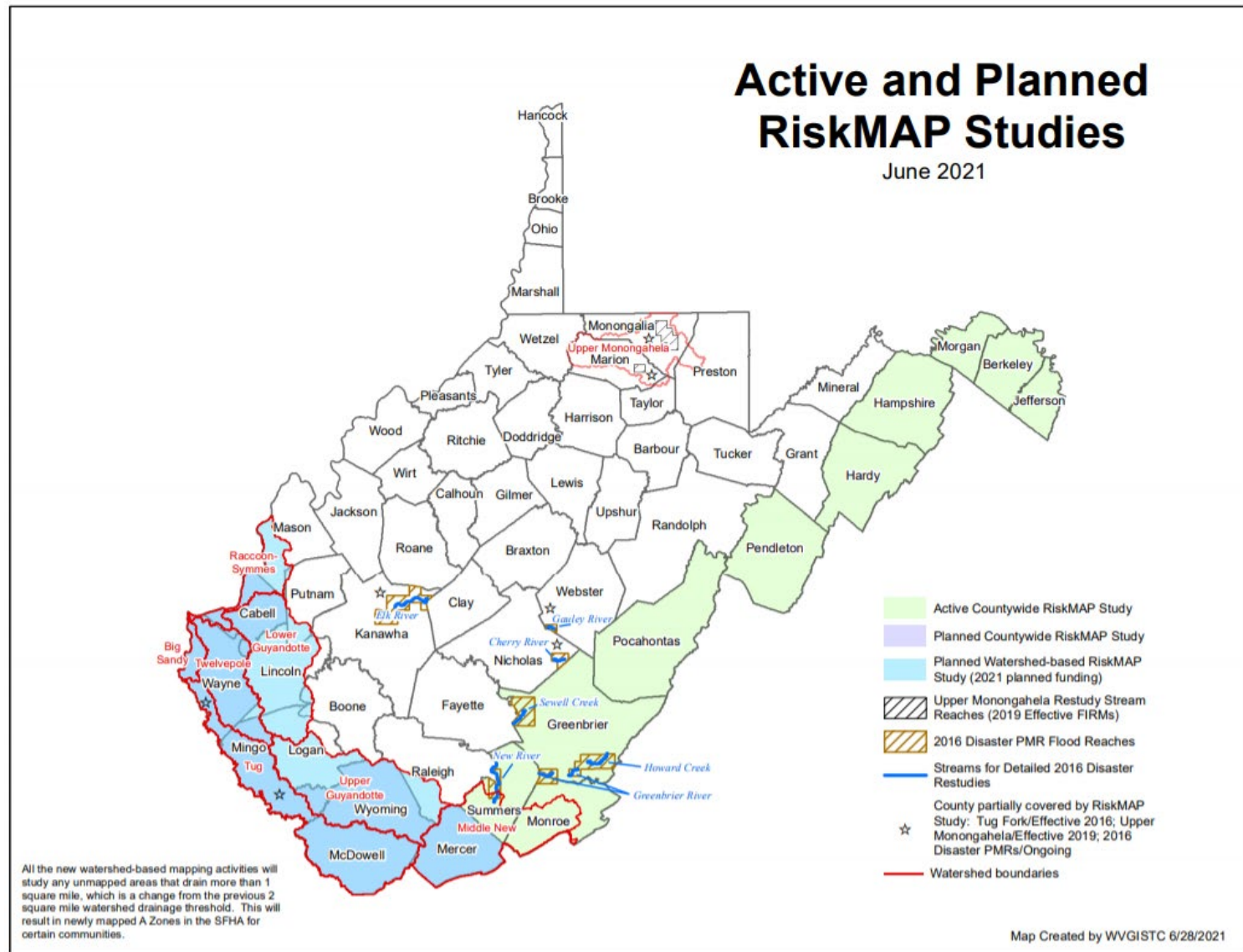
NFHL X-Section Popup Window

Cross-Sections: 815.24

DFIRM_ID	54061C
VERSION_ID	2.3.3.3
XS_LN_ID	54061C_18301
WTR_NM	Deckers Creek
STREAM_STN	3081.75
START_ID	54061C_101
XS_LTR	F
XS_LN_TYP	LETTERED, MAPPED
WSEL_REG	815.24
STRMBED_EL	799.02
LEN_UNIT	Feet

[Zoom to](#)

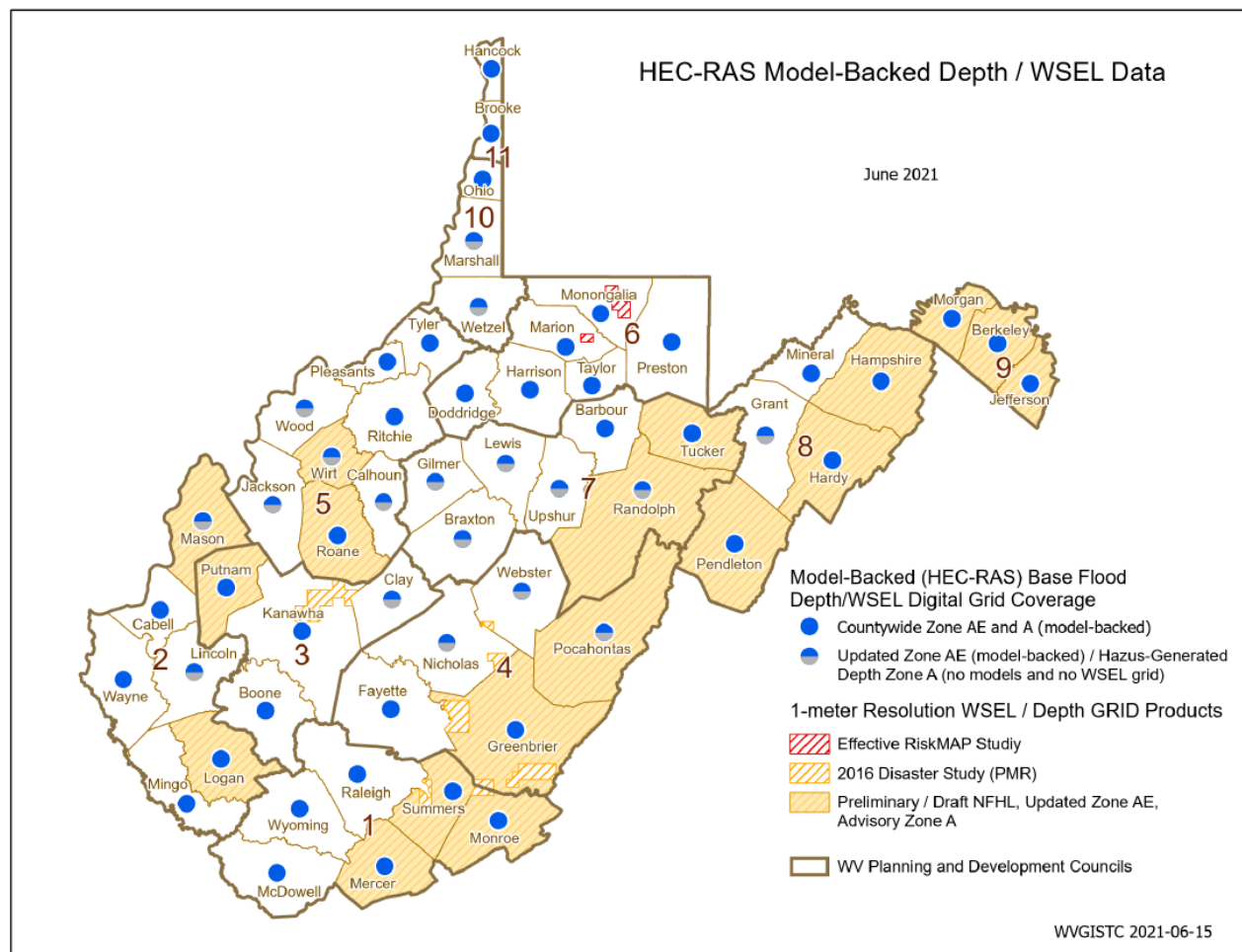
Active and Planned FEMA Studies



New Flood Studies

Future mapping trends:

- **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., Flood Heights, Water Depth).
- **Depth Grids for Multiple Flood Events:** Depth Grids published for multiple flood events (10, 04, 02, 01, 0.2 percent chance)
- **X-Sections for A Zones:** In addition to AE Zones, published BFE cross sections for all Approximate A Zones



Flood Height Grids

**Advisory Flood Heights
(Advisory A BFEs)**

Advisory Flood Heights (AFH) Status

WSEL and Depth Grid Resolution

(1) QL2 Lidar Counties: Berkeley, Hardy, Hampshire, Jefferson, Monroe, Pendleton, Summers, Morgan

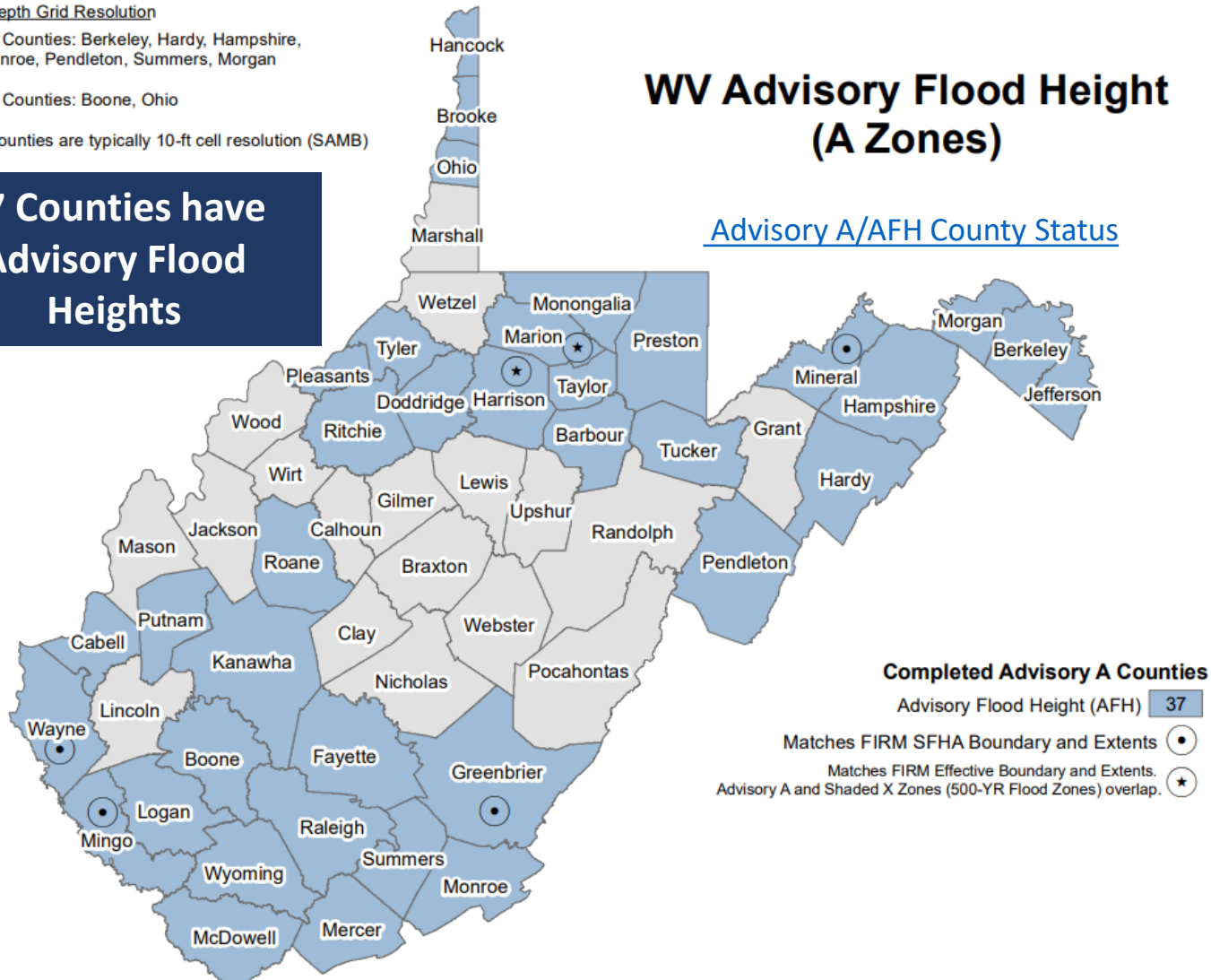
(2) QL3 Lidar Counties: Boone, Ohio

(3) All other counties are typically 10-ft cell resolution (SAMB)

**37 Counties have
Advisory Flood
Heights**

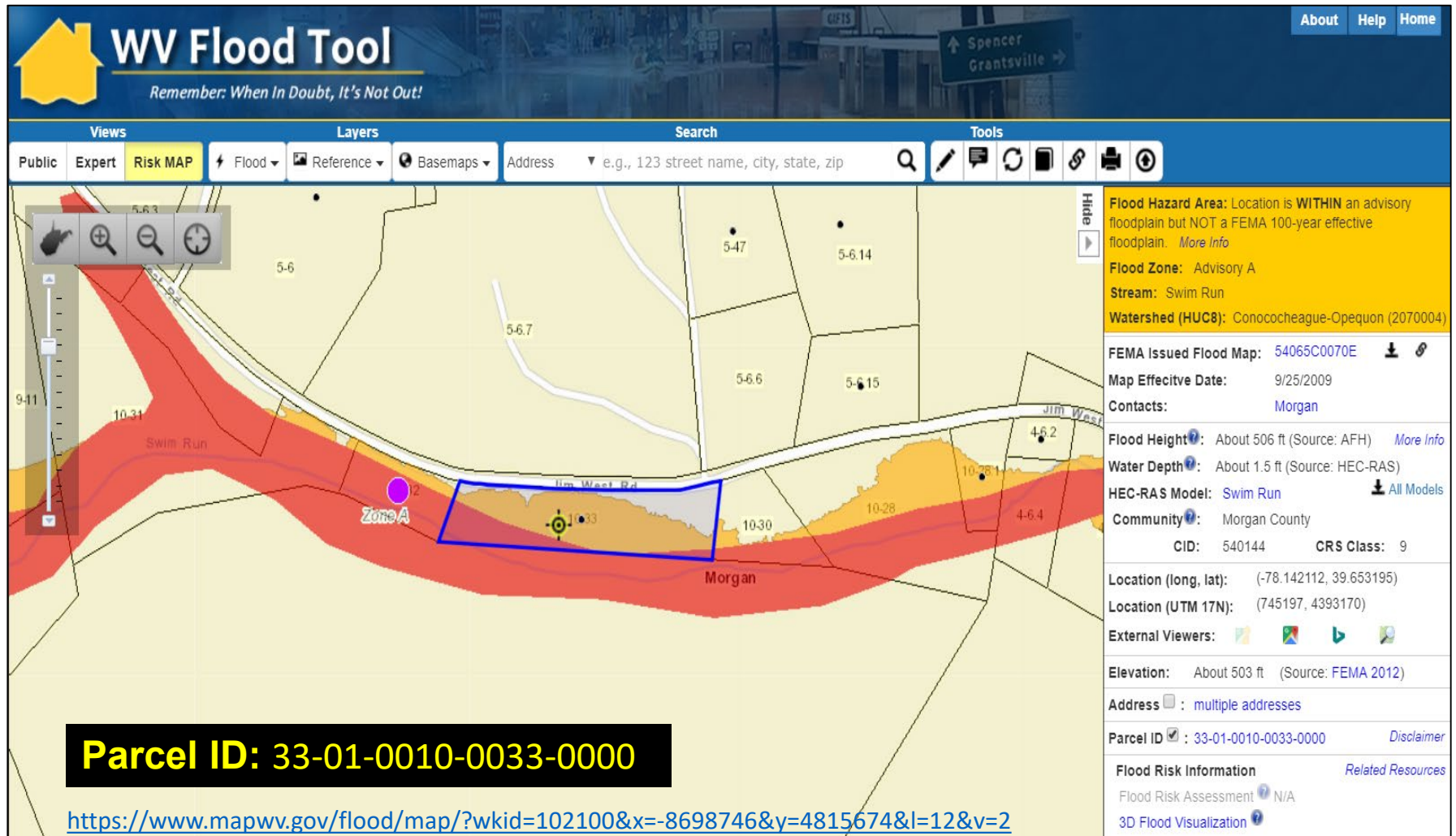
WV Advisory Flood Height (A Zones)

[Advisory A/AFH County Status](#)



WVGISTC, 3/17/2021

Advisory Flood Heights (AFH)



Structure is **WITHIN** an **Advisory A Floodplain** but **NOT** a FEMA 100-year effective floodplain. Parcel ID 33-01-0010-0033-0000 in Morgan County, WV.

Flood Height Grids

Updated AE

(Non-Restudy BFEs)

Updated AE Redelineation Counties

Redelineation Products:

1. Updated Non-Regulatory AE Zone
2. Water Surface Elevation (WSEL) Grid
3. Depth Grid

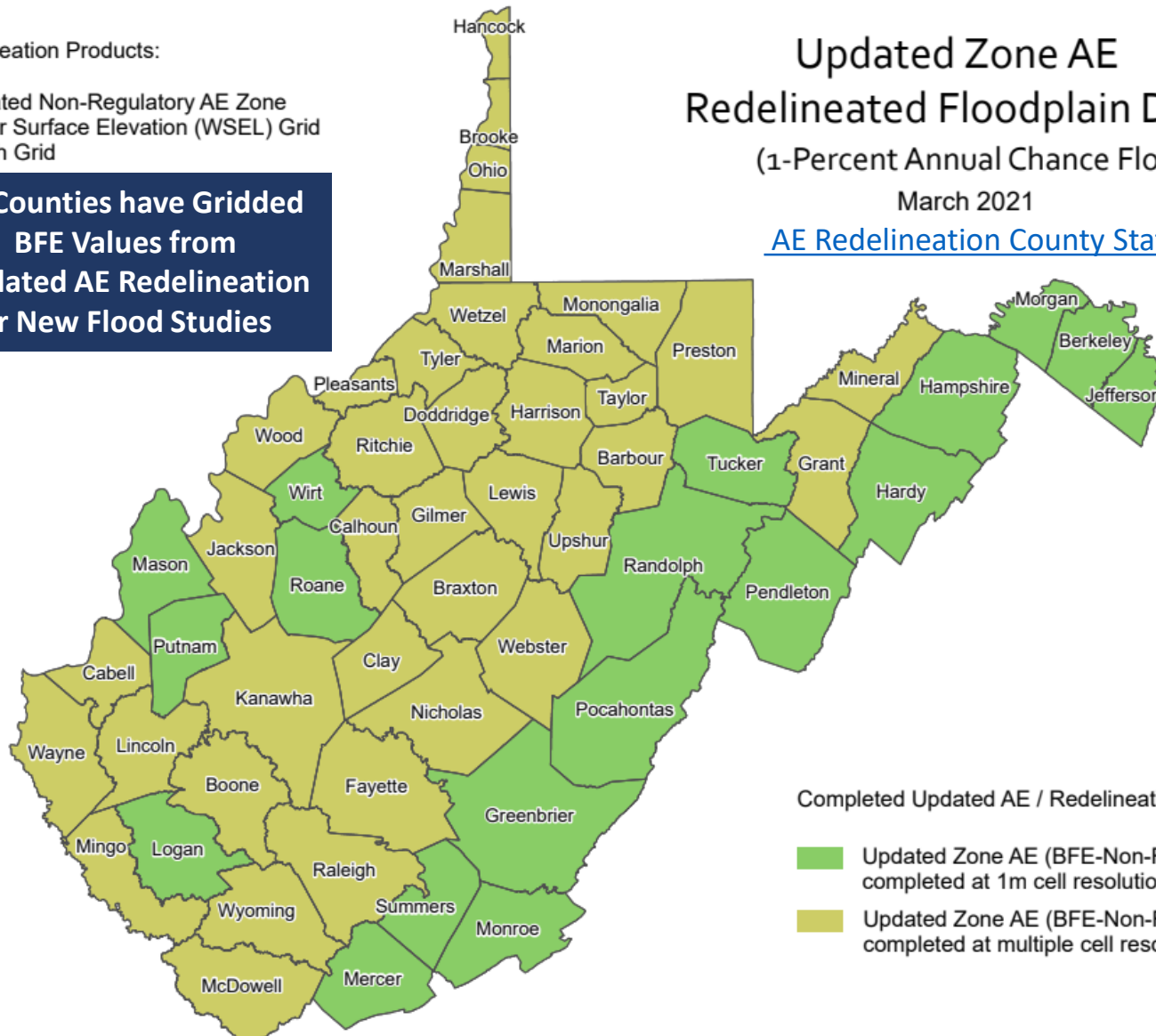
**All Counties have Gridded
BFE Values from
Updated AE Redelineation
or New Flood Studies**

Updated Zone AE Redelineated Floodplain Data

(1-Percent Annual Chance Flood)

March 2021

[AE Redelineation County Status](#)



Completed Updated AE / Redelineation Counties

- Updated Zone AE (BFE-Non-Restudy) - completed at 1m cell resolution
- Updated Zone AE (BFE-Non-Restudy) - completed at multiple cell resolutions

Flood Heights: BFE Non-Restudy

The screenshot displays the Map of West Virginia Flood Map interface. A black box labeled "NFHL X-Section Popup Window" highlights a table of cross-section data. The table has columns for various identifiers and values, with "WSEL_REG" and "369.5" highlighted in yellow. A "Zoom to" link is at the bottom of the table. To the right, a "Flood Query Panel" provides detailed information about the flood hazard area, including FEMA's Flood Map, Map Effective Date, Contacts, Flood Height (370 ft BFE - Non-Restudy), Water Depth, HEC-RAS Model, Flood Profile, Community, Location (long, lat), Location (UTM 17N), External Viewers, Elevation, Address, Parcel, and Flood Risk Information.

Tools

Flood Query Panel

NFHL X-Section Popup Window

Cross-Sections: 369.5

DFIRM_ID	54003C
VERSION_ID	1.1.1.0
XS_LN_ID	54003C_798
WTR_NM	OPEQUON CREEK
STREAM_STN	47640
START_ID	54003C_6
XS_LTR	AS
XS_LN_TYP	LETTERED, MAPPED
WSEL_REG	369.5
STRMBED_EL	
LEN_UNIT	Feet

[Zoom to](#)

Flood Hazard Area: Location is **WITHIN** the FEMA 100-year floodplain and floodway.
Flood Zone: AE (Floodway)
Stream: Opequon Creek
Watershed (HUC8): Conococheague-Opequon (2070004)

FEMA's Flood Map: [54003C0160E](#) [NFHL](#)
Map Effective Date: 7/7/2009
Contacts: [Berkeley](#)

Flood Height: [370 ft \(BFE - Non-Restudy\)](#) [More Info](#)
Water Depth: About 13.2 ft (Source: HEC-RAS)
HEC-RAS Model: N/A [All Models](#)

Flood Profile: [54003_015](#)

Community: [Berkeley County](#)
CID: 540282 **CRS Class:** 7

Location (long, lat): (-77.928365, 39.446075)
Location (UTM 17N): (764325, 4370783)

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

Elevation: About 356 ft (Source: [FEMA 2012](#))

Address: [multiple addresses](#)

Parcel: [02-01-0006-0032-0000](#) | [Assessment](#) [Warning](#)

Flood Risk Information [Related Resources](#)
[Flood Risk Assessment](#)
[3D Flood Visualization](#)

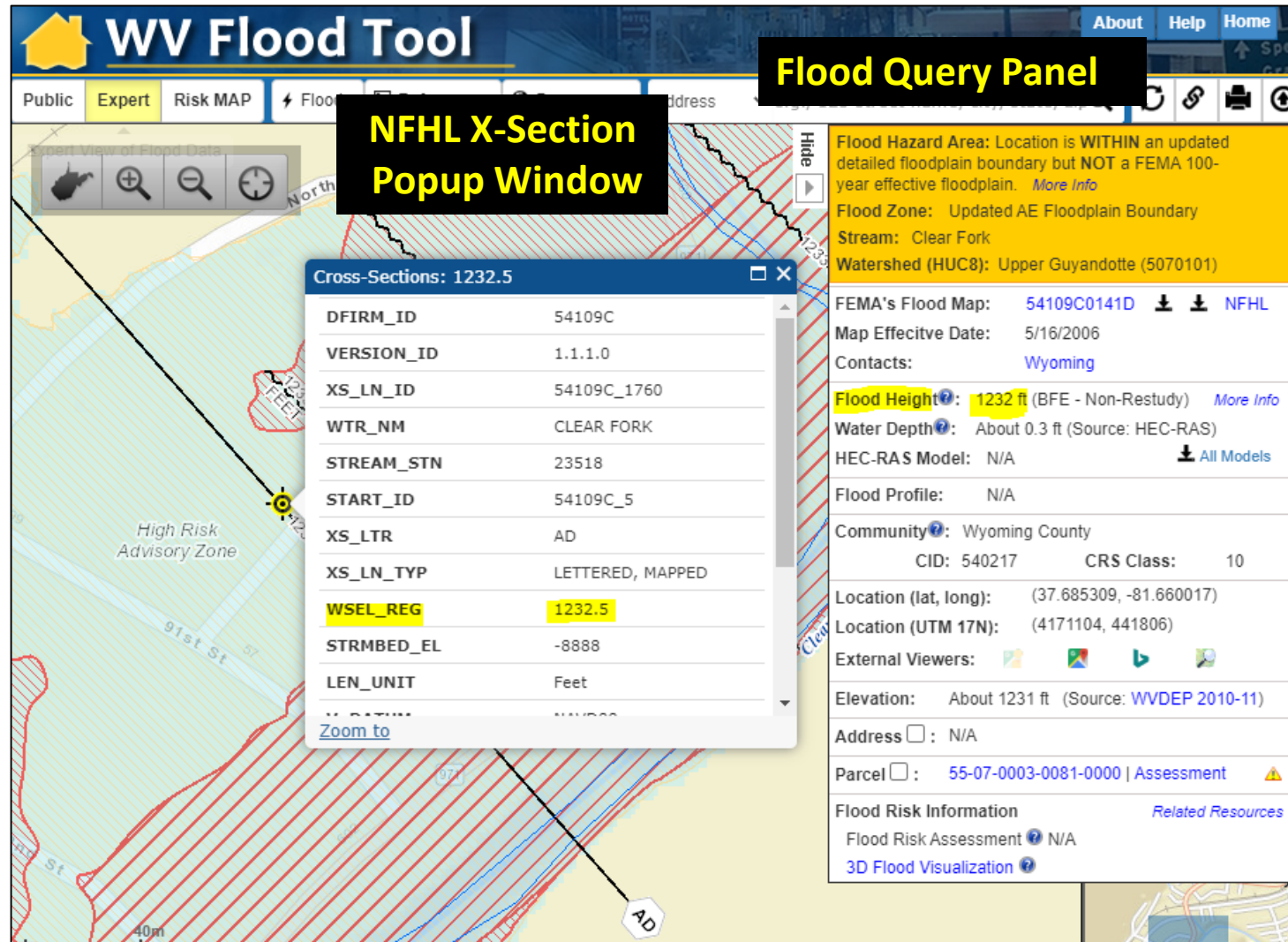
FLOOD HEIGHTS

Non-Restudy Base Flood Elevation Heights displayed in Flood Results Query Panel. Integer values displayed.

Source: Flood Heights created from Updated AE Redelineation using new topography

Coverage includes Berkeley & Morgan Counties

Flood Heights: BFE Non-Restudy (Cont.)



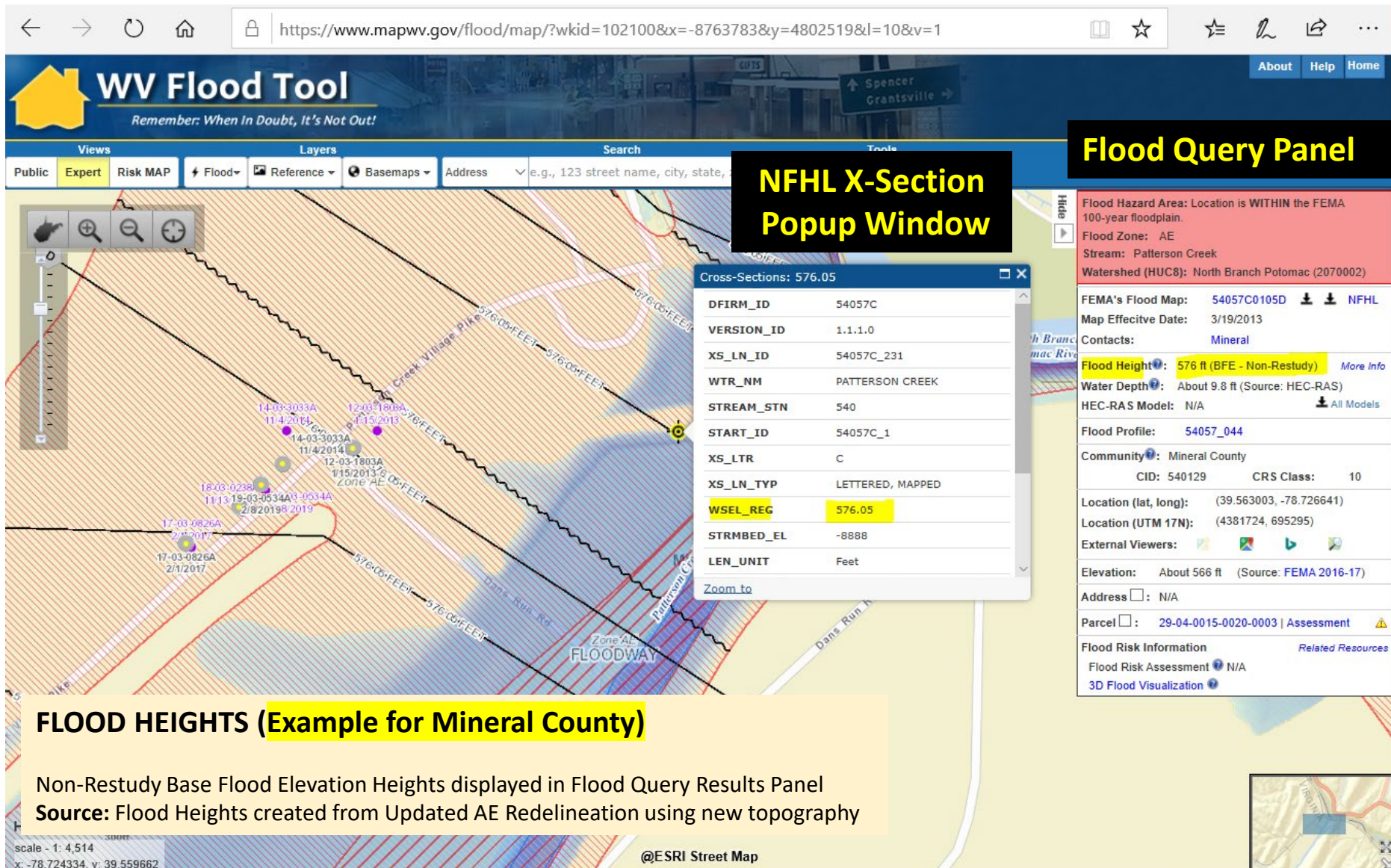
FLOOD HEIGHTS

Non-Restudy
Base Flood
Elevation Heights
displayed in
Flood Query
Results Panel.
Integer values
displayed.

Source: Flood
Heights created
from Updated AE
Redelineation using
new topography

**Coverage includes
McDowell &
Wyoming Counties**

Flood Heights: BFE Non-Restudy (Cont.)




FLOOD HEIGHTS (Example for Mineral County)

Non-Restudy Base Flood Elevation Heights displayed in Flood Query Results Panel

Source: Flood Heights created from Updated AE Redelineation using new topography

Flood Heights: BFE Non-Restudy (Cont.)



WV Flood Tool

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

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

Views

Layers

Search

Tools

Public

Expert

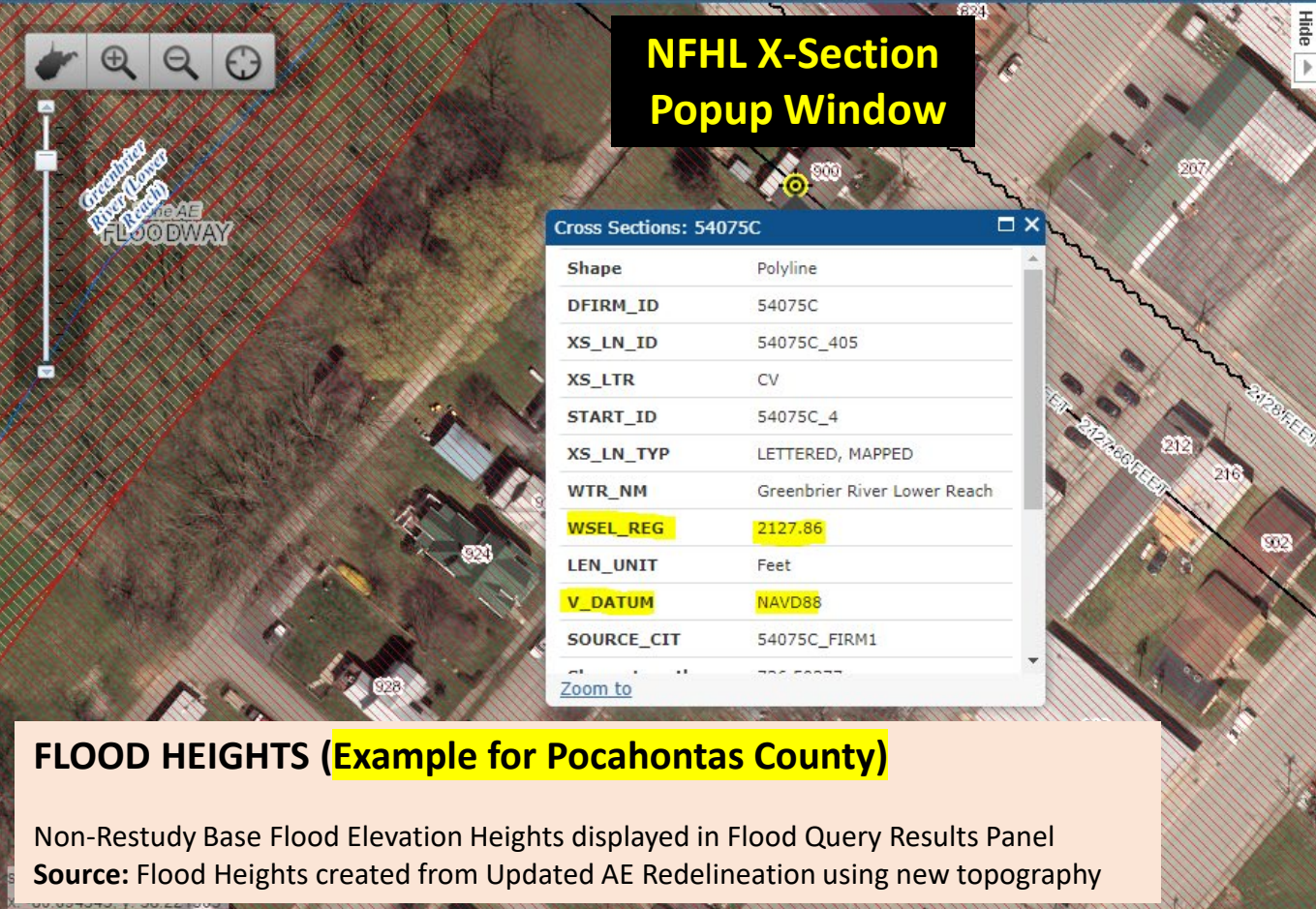
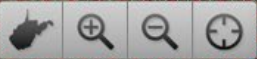
Risk MAP

Flood

Reference

Basemaps

Address ▼ Marlinton, Wv



NFHL X-Section Popup Window

Cross Sections: 54075C	
Shape	Polyline
DFIRM_ID	54075C
XS_LN_ID	54075C_405
XS_LTR	CV
START_ID	54075C_4
XS_LN_TYP	LETTERED, MAPPED
WTR_NM	Greenbrier River Lower Reach
WSEL_REG	2127.86
LEN_UNIT	Feet
V_DATUM	NAVD88
SOURCE_CIT	54075C_FIRM1

[Zoom to](#)

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

Flood Zone: AE

Stream: Greenbrier River (Lower Reach)

Watershed (HUC8): Greenbrier (5050003)

FEMA's Flood Map: [54075C0526D](#) [Download](#) [NFHL](#)

Map Effective Date: 11/4/2010

Contacts: [Pocahontas](#)

Flood Height: 2127.9 ft (BFE - Non-Restudy) [NAVD88](#)

Water Depth: About 2.9 ft (Source: HEC-RAS)

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

Flood Profile: [54075_046](#)

Community: Town of Marlinton

CID: 540159 CRS Class: 10

Location (lat, long): (38.222572, -80.095783) [WGS84](#)

Location (UTM 17N): (4230896, 579148) [WGS84](#)

External Viewers: [Google Earth](#) [ArcGIS](#) [Bing](#) [Mapbox](#)

Elevation: 2124.9 ft (Source: [FEMA 2016](#)) [NAVD88](#)

Address ☒ : 900 2ND AVE, Marlinton, WV, 24954

Parcel ☐ : 38-08-0002-0087-0001 | [Assessment](#)

Flood Risk Information [Related Resources](#)

Flood Risk Assessment: N/A

[3D Flood Visualization](#)

Flood Query Panel

FLOOD HEIGHTS (Example for Pocahontas County)

Non-Restudy Base Flood Elevation Heights displayed in Flood Query Results Panel

Source: Flood Heights created from Updated AE Redelineation using new topography

Flood Heights: BFE Non-Restudy (Cont.)

The screenshot displays the WV Flood Tool interface. The top navigation bar includes links for 'About', 'Help', and 'Home'. Below this, there are tabs for 'Views' (Public, Expert, Risk MAP), 'Layers' (Flood, Reference, Basemaps), and a 'Search' bar. The main map area shows a flood hazard area with a red outline and a blue cross-section line. A black box with yellow text 'NFHL X-Section Popup Window' is overlaid on the map. A 'Cross Sections' popup window is open, displaying a table of data for a specific cross-section. The table includes fields like DFIRM_ID, XS_LN_ID, XS_LTR, START_ID, XS_LN_TYP, WTR_NM, WSEL_REG, LEN_UNIT, V_DATUM, SOURCE_CIT, VERSION_ID, and STREAM_STN. The 'WSEL_REG' field is highlighted in yellow and shows the value '1306.4'. To the right of the map, a 'Flood Query Panel' is visible, showing details about the flood hazard area, including the flood zone (AE), stream (Tygart Valley River), watershed (HUC8: Tygart Valley (5020001)), FEMA's Flood Map (54001C0118C), map effective date (5/3/2011), contacts (Barbour), flood height (1306.4 ft), water depth (About 4.0 ft), HEC-RAS Model (N/A), flood profile (54001_001), community (City of Philippi), location (lat, long), location (UTM 17N), external viewers, elevation (1302.4 ft), address, parcel, flood risk information, flood risk assessment, and 3D flood visualization.

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

Views: Public | **Expert** | Risk MAP
Layers: Flood | Reference | Basemaps
Search: Address e.g., 123 street name, city, state, zip

Tools: [Icons for various map tools]

Map: [Aerial view of a residential area with flood zones and a cross-section line]

NFHL X-Section Popup Window

Cross Sections	
DFIRM_ID	54001C
XS_LN_ID	54001C_44
XS_LTR	B
START_ID	54001C_1
XS_LN_TYP	LETTERED, MAPPED
WTR_NM	Anglins Run
WSEL_REG	1306.4
LEN_UNIT	Feet
V_DATUM	NAVD88
SOURCE_CIT	54001C_FIS1
VERSION_ID	1.1.1.0
STREAM_STN	1088

Flood Query Panel

Flood Hazard Area: Location is WITHIN the FEMA 100-year floodplain.
Flood Zone: AE
Stream: Tygart Valley River
Watershed (HUC8): Tygart Valley (5020001)

FEMA's Flood Map: 54001C0118C | NFHL
Map Effective Date: 5/3/2011
Contacts: Barbour

Flood Height: 1306.4 ft (BFE - Non-Restudy)
Water Depth: About 4.0 ft (Source: HEC-RAS)
HEC-RAS Model: N/A
Flood Profile: 54001_001

Community: City of Philippi
CID: 540004 | CRS Class: 8

Location (lat, long): (39.146380, -80.038607)
Location (UTM 17N): (4333460, 583078)

External Viewers: [Icons for various viewers]

Elevation: 1302.4 ft (Source: SAMS 2003)

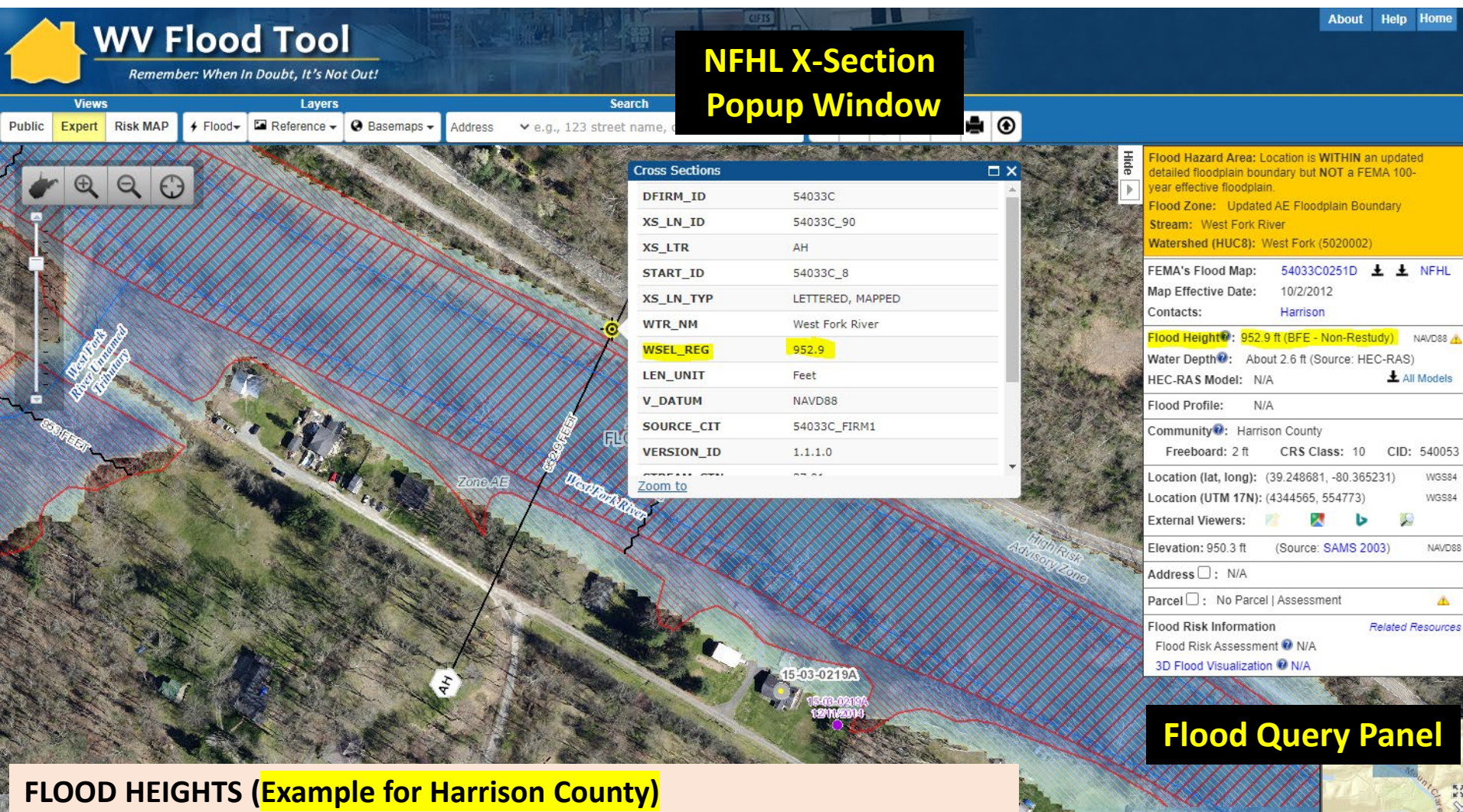
Address: N/A
Parcel: No Parcel | Assessment

Flood Risk Information
Flood Risk Assessment: N/A
3D Flood Visualization: N/A

FLOOD HEIGHTS (Example for Barbour County)

Non-Restudy Base Flood Elevation Heights displayed in Flood Query Results Panel
Source: Flood Heights created from Updated AE Redelineation using new topography

Flood Heights: BFE Non-Restudy (Cont.)



FLOOD HEIGHTS (Example for Harrison County)

Non-Restudy Base Flood Elevation Heights displayed in Flood Query Results Panel

Source: Flood Heights created from Updated AE Redelineation using best available topography

<https://mapwv.gov/flood/map/?wkid=102100&x=-8946217&y=4757356&l=10&v=1>

Flood Heights: BFE Non-Restudy (Cont.)

The screenshot displays the WV Flood Tool interface. The top navigation bar includes links for 'About', 'Help', and 'Home'. Below this, a search bar is present with a dropdown menu for 'Address' and a search icon. The main map area shows a flood hazard area with various flood zones (AE, A, B, C, D, E, F, G, H, I) and a cross-section line. A yellow box highlights the 'FLOOD HEIGHTS (Example for Hampshire County)' section. A black box labeled 'NFHL X-Section Popup Window' points to a table of cross-section data. A red box labeled 'Flood Query Panel' points to a panel on the right side of the map.

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

Views: Public, Expert, Risk MAP, Flood, Reference, Basemaps

Search: Address: e.g., 123 street name, city, state, zip

Tools: [Icons for various map tools]

Map Labels: Capon River Rd, Zone AE, Capon River, TOWN OF CAPON BRIDGE, FLOOD

Map Scale: 0 to 1000 feet

Map Coordinates: 39.292961, -78.432913

Map Data: 54027C0316C, 11/7/2002, Hampshire

Map Metadata: FEMA's Flood Map: 54027C0316C, Map Effective Date: 11/7/2002, Contacts: Hampshire

Map Information: Flood Height: 817.2 ft (BFE - Non-Restudy), Water Depth: About 27.2 ft (Source: HEC-RAS), HEC-RAS Model: N/A

Map Profile: 54027_009

Map Community: Town of Capon Bridge, CID: 540046, CRS Class: 10

Map Location: Location (lat, long): (39.292961, -78.432913), Location (UTM 17N): (4352429, 721384)

Map External Viewers: [Icons for various external viewers]

Map Elevation: Elevation: 789.5 ft (Source: FEMA 2016-17)

Map Address: Address: N/A

Map Parcel: Parcel: No Parcel | Assessment

Map Flood Risk Information: Flood Risk Assessment: N/A, 3D Flood Visualization: N/A

Map Related Resources: [Links for related resources]

Map Cross Sections:

Cross Sections	
DFIRM_ID	54027C
XS_LN_ID	54027C_297
XS_LTR	H
START_ID	54027C_8
XS_LN_TYP	LETTERED, MAPPED
WTR_NM	CACAPON RIVER
WSEL_REG	817.2
LEN_UNIT	Feet
V_DATUM	NGVD29
SOURCE_CIT	54027C_FIS1
VERSION_ID	1.1.1.0
STREAM_STN	161554

Map Flood Hazard Area: Location is WITHIN the FEMA 100-year floodplain and floodway. Flood Zone: AE (Floodway) Stream: Cacapon River Watershed (HUC8): Cacapon-Town (2070003)

Map Flood Query Panel:

Flood Query Panel

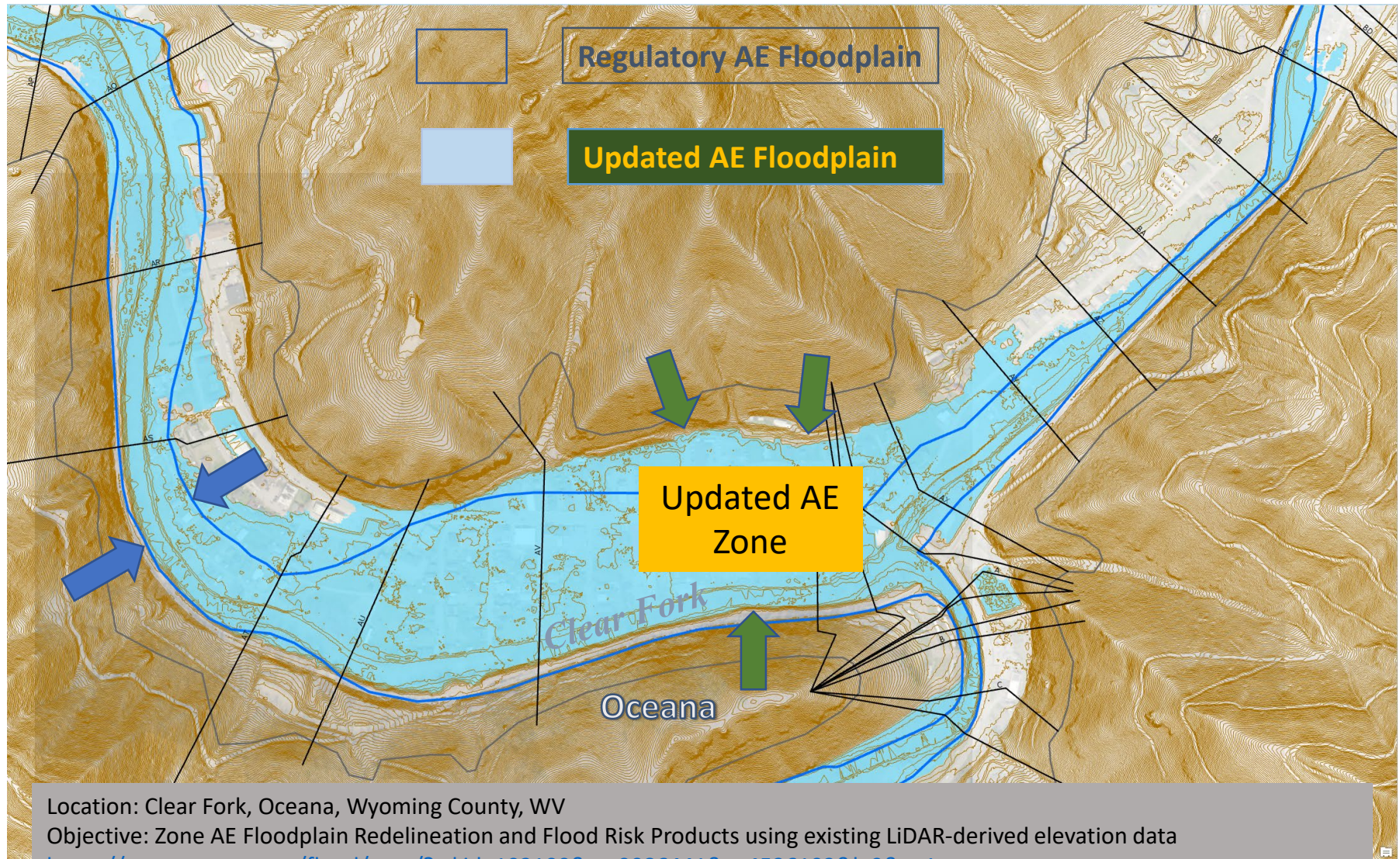
Flood Heights (Example for Hampshire County)

Non-Restudy Base Flood Elevation Heights displayed in Flood Query Results Panel

Source: Flood Heights created from Updated AE Redelineation using new topography

Updated AE Floodplain Boundaries - Example

Redelineated Floodplain Using New Topo

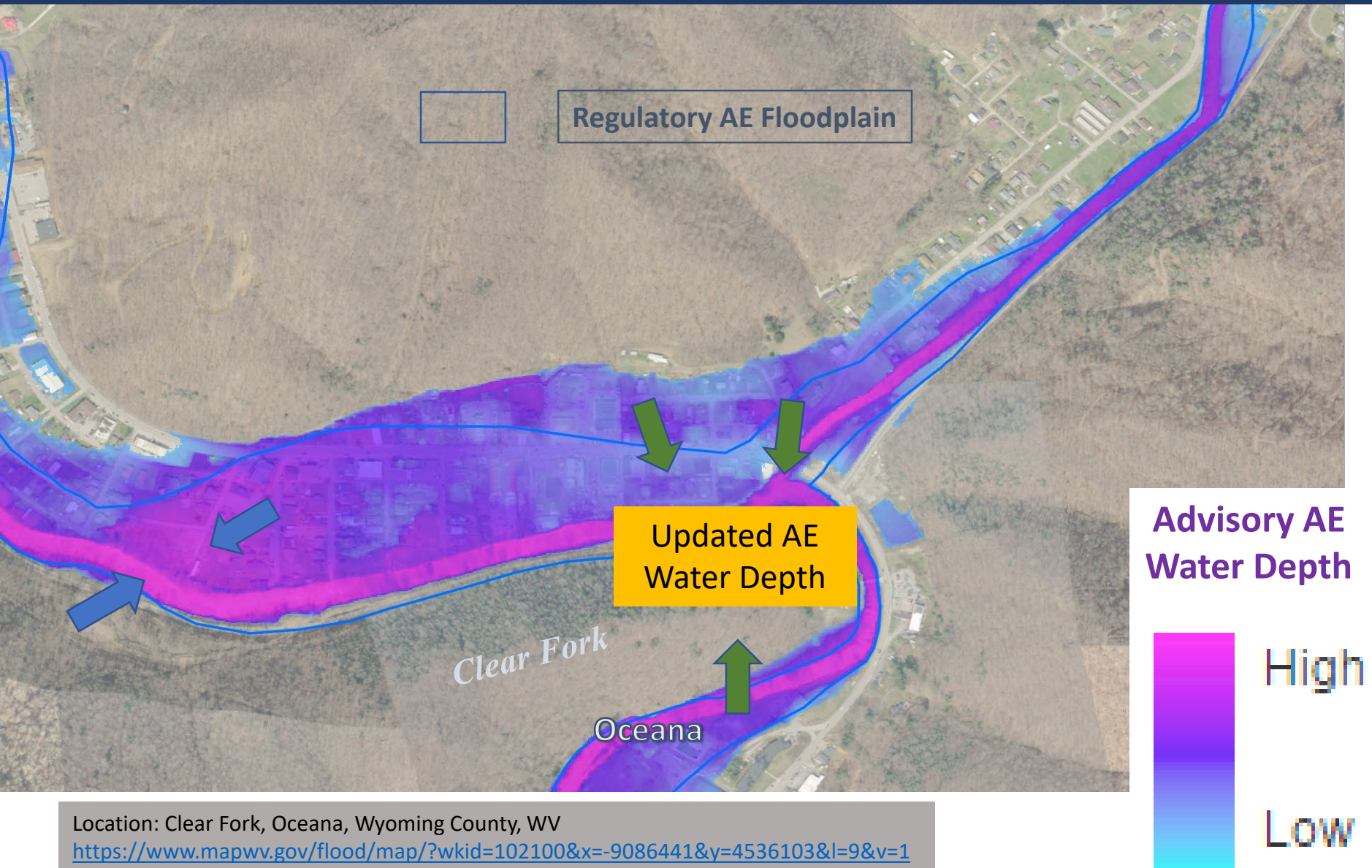


Location: Clear Fork, Oceana, Wyoming County, WV

Objective: Zone AE Floodplain Redelineation and Flood Risk Products using existing LiDAR-derived elevation data

<https://www.mapwv.gov/flood/map/?wkid=102100&x=-9086441&y=4536103&l=9&v=1>

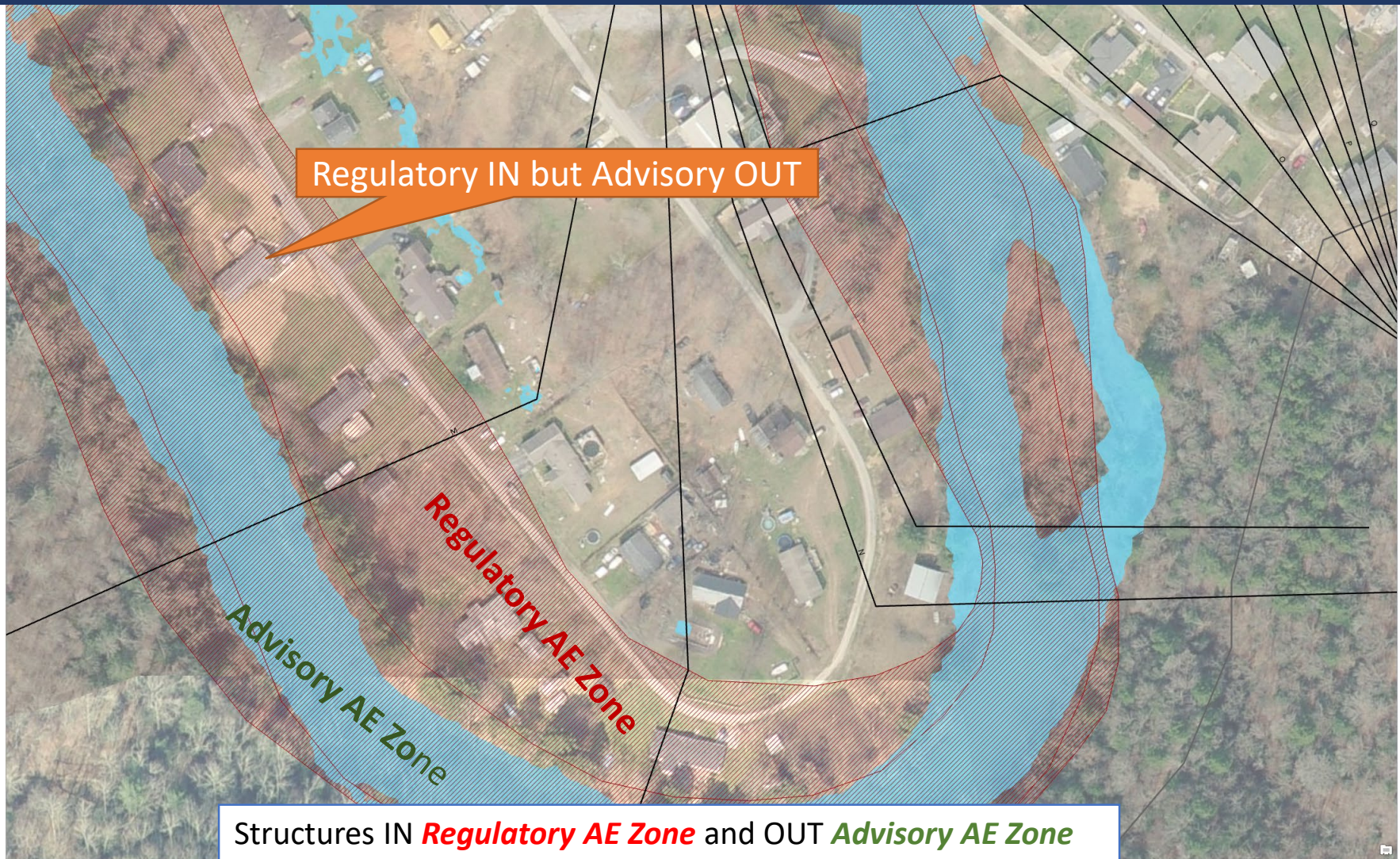
Updated AE Floodplain Boundary - Depth Grid



Location: Clear Fork, Oceana, Wyoming County, WV

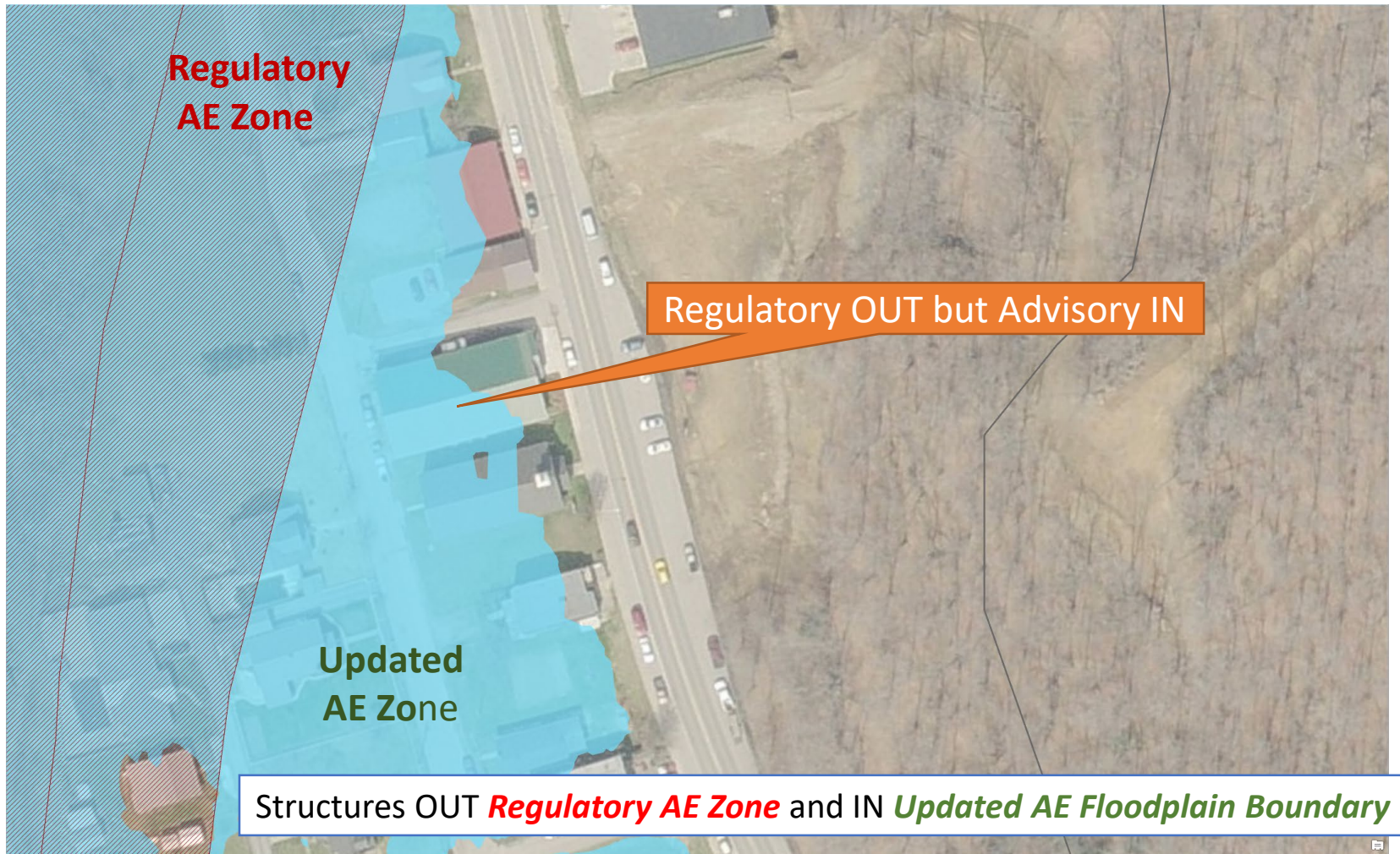
<https://www.mapwv.gov/flood/map/?wkid=102100&x=-9086441&y=4536103&l=9&v=1>

Advisory AE Determinations



What do you tell the public? Acquire an elevation certificate and use the Updated AE Floodplain Boundary information to request a LOMA to amend the effective NFIP map.

Updated AE Floodplain Boundaries



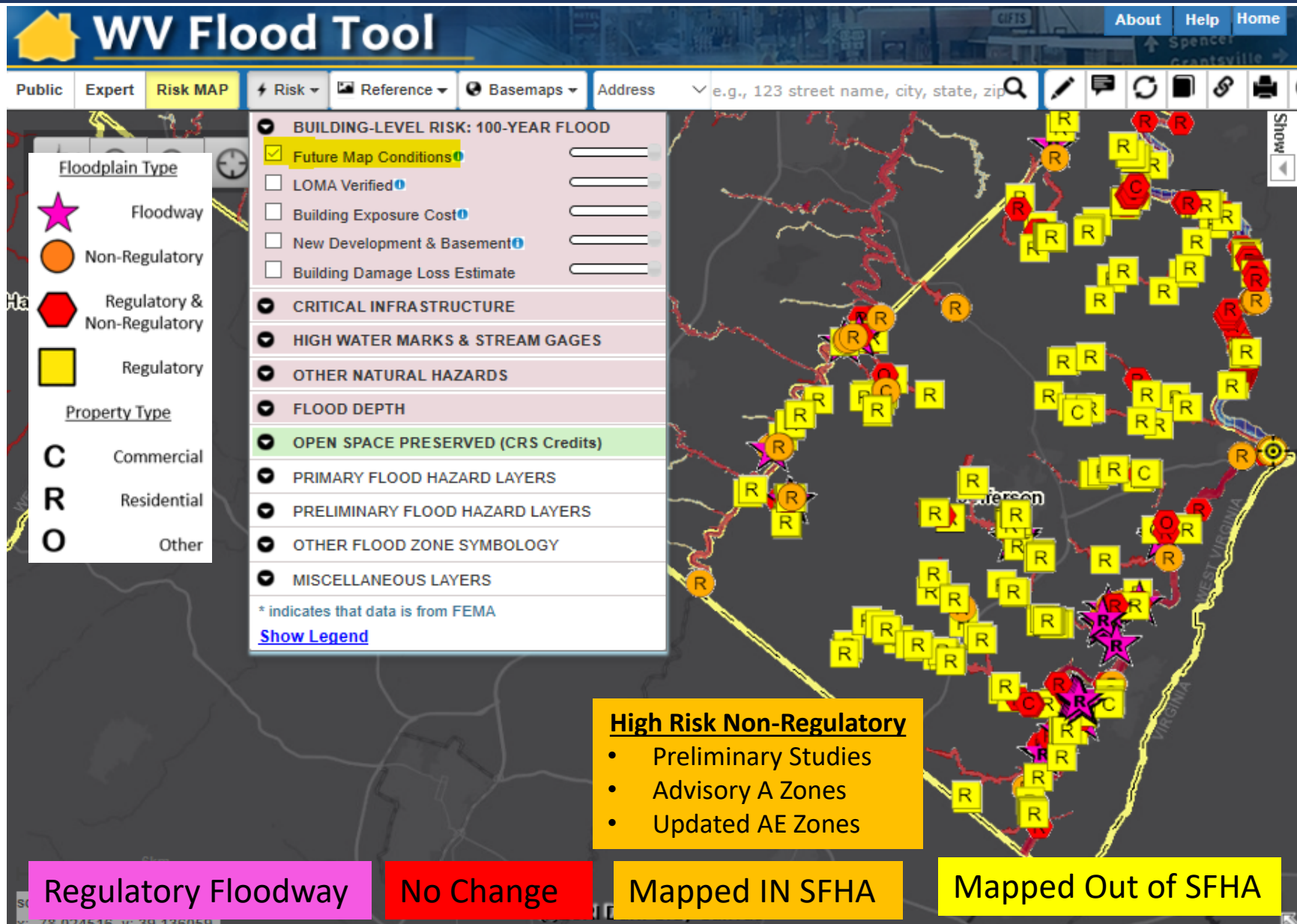
What do you tell the public? Updated AE floodplain boundary information indicates a flood hazard area and will likely be incorporated into future effective NFIP maps. New development should not occur in updated floodplains without a detailed study to show development reasonably safe from flooding. Recommend purchasing flood insurance for existing structures.

High-Risk Advisory Zones

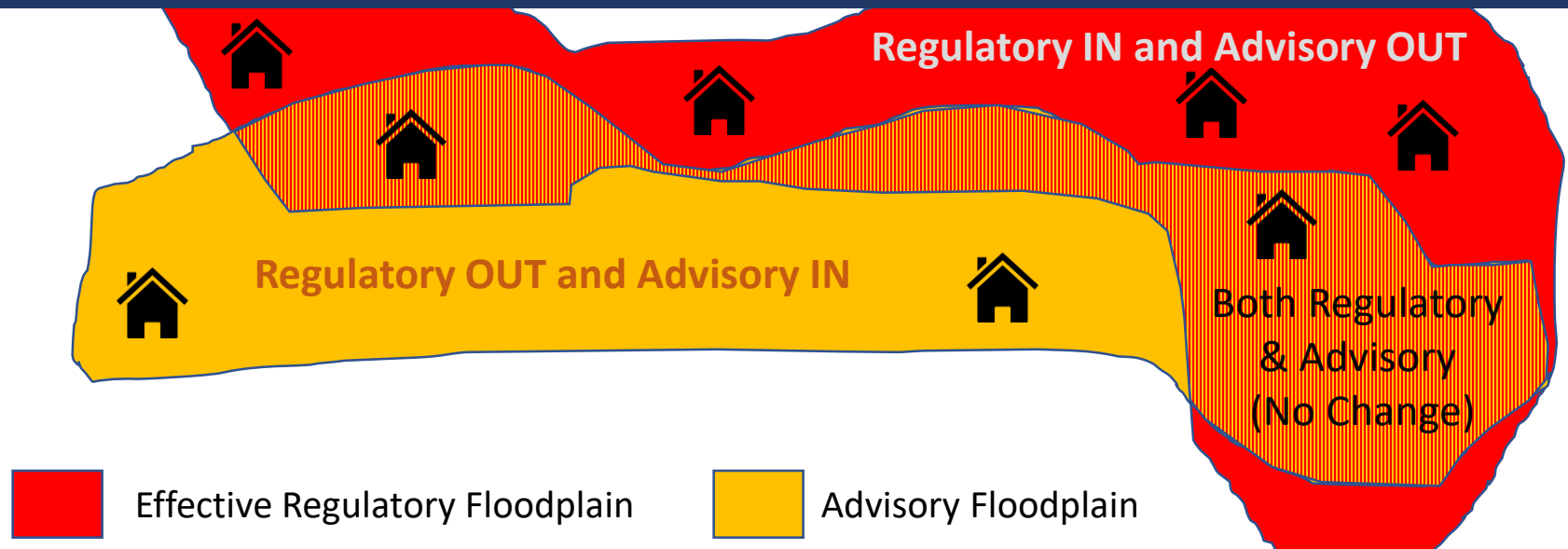
Outreach Information

**Buildings – Future Map
Conditions**

Buildings – Future Map Conditions



Advisory Zones – Outreach Information



Union	Meaning	Building Changes	Area Changes
No Change	IN both Regulatory and Advisory	2	11 m ²
Advisory Only	Regulatory OUT and Advisory IN	2	13 m ²
Regulatory Only	Regulatory IN and Advisory OUT	4	21 m ²

County	Name	Advisory Only	Regulatory Only	Advisory & regulatory	SUM regulatory
54009C	Brooke	73	1710	87	1797
54011C	Cabell	64	2492	85	2577

The geographic union of Regulatory and Advisory Floodplains generates a change polygon for flood risk analysis by area. Subsequently the union polygon can be intersected with site-specific structures to analyze the impact of the Advisory Floodplain changes to the Regulatory Floodplain.

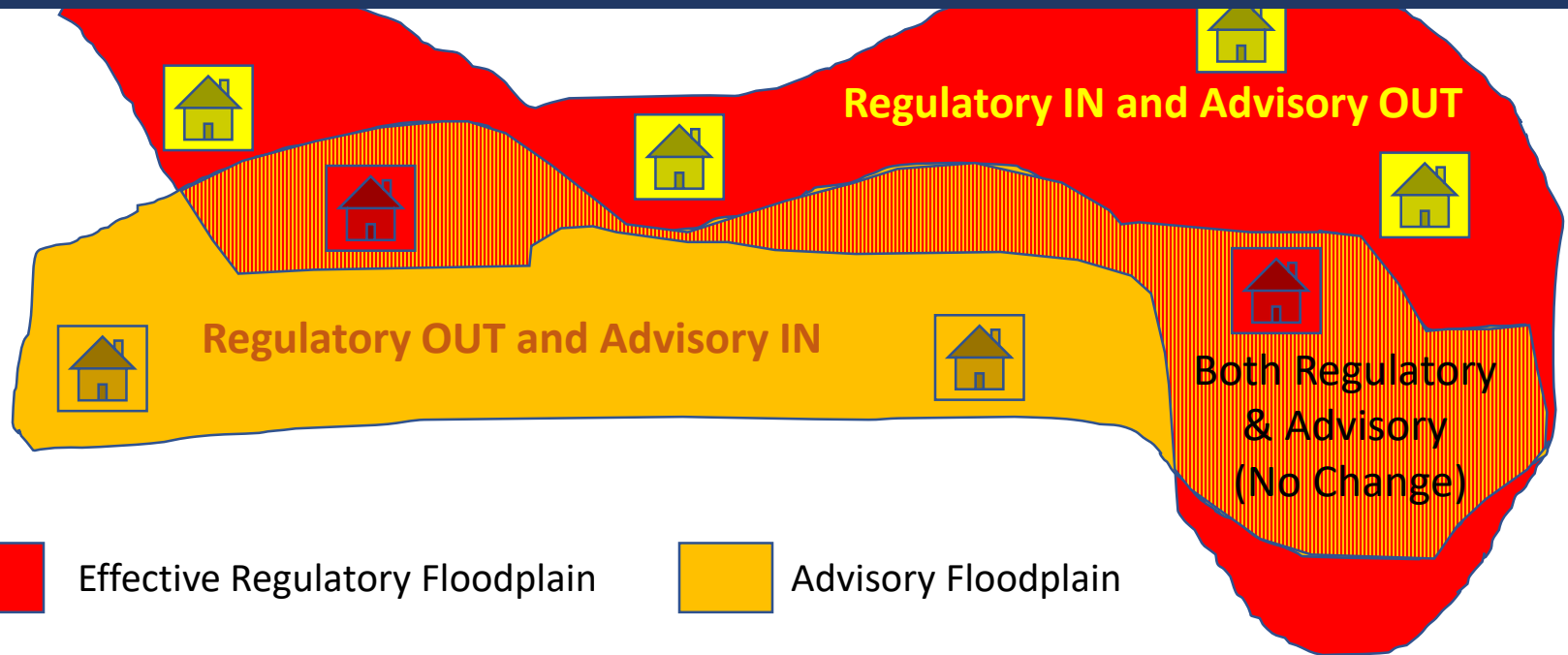
Advisory Zones – What is the message for property owners??



- **Regulatory In but Advisory Out (Lower Flood Risk)** – Property owners are not at the highest risk to a 1% Annual Chance Flood but still recommend flood insurance. Owners can acquire an elevation certificate and use the advisory base flood elevation to **acquire a LOMA** and lower NFIP insurance rates. **Yellow** warning color indicates **Moderate Flood Risk**.



- **Regulatory Out but Advisory In (Higher Flood Risk)** – Advisory information indicates a flood hazard area and will be incorporated into future effective regulatory or community identified floodplains. Floodplain managers should recommend property owners of existing structures in Advisory Floodplains that they are at high risk of a 1% Annual Chance Flood and recommend a Preferred Risk Flood Insurance Policy. New development should not occur in Advisory Floodplains without a detailed study to show development is reasonably safe from flooding. **Orange** warning color indicates **High Flood Risk**.



Floodplain Type

- ★ Floodway
- Non-Regulatory
- ⬡ Regulatory & Non-Regulatory
- Regulatory

Property Type

- C Commercial
- R Residential
- O Other

Regulatory Floodway

Mapped IN SFHA

No Change

Mapped Out of SFHA

Near Matoaka in Mercer County

High Risk Non-Regulatory

- Preliminary Studies
- Advisory A Zones
- Updated AE Zones

Analogous to Changes Since Last FIRM (CSLF), but Building Changes Since Last FIRM (bCSLF)

Floodplain Type

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Regulatory Floodway

Mapped IN SFHA

No Change

Mapped Out of SFHA





Near Matoaka in Mercer County

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Analogous to Changes Since Last FIRM (CSLF), but Building Changes Since Last FIRM (bCSLF)





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Mapped IN SFHA

No Change

Mapped Out of SFHA

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Regulatory Floodway

Mapped IN SFHA

No Change

Mapped Out of SFHA

Zone AE FLOODWAY

High Risk Non-Regulatory

- Preliminary Studies
- Advisory A Zones
- Updated AE Zones

Analogous to Changes Since Last FIRM (CSLF), but Building Changes Since Last FIRM (bCSLF)

High Risk Non-Regulatory

- Preliminary Studies
- Advisory A Zones
- Updated AE Zones

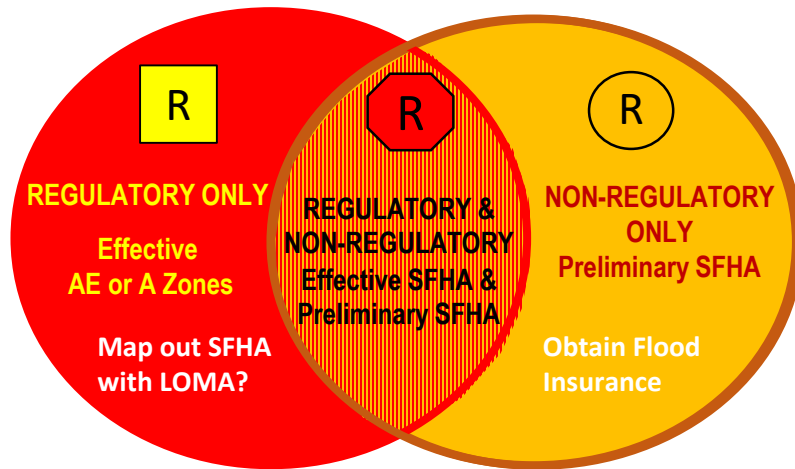
- ## High Risk Non-Regulatory
- Preliminary Studies
 - Advisory A Zones
 - Updated AE Zones

Analogous to Changes Since Last FIRM (CSLF), but Building Changes Since Last FIRM (bCSLF)

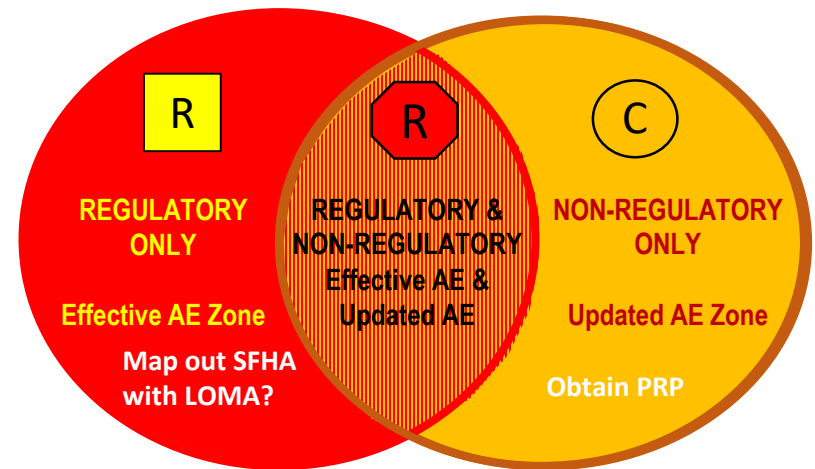
Buildings – Future Map Conditions

Regulatory / Non-Regulatory / Floodway

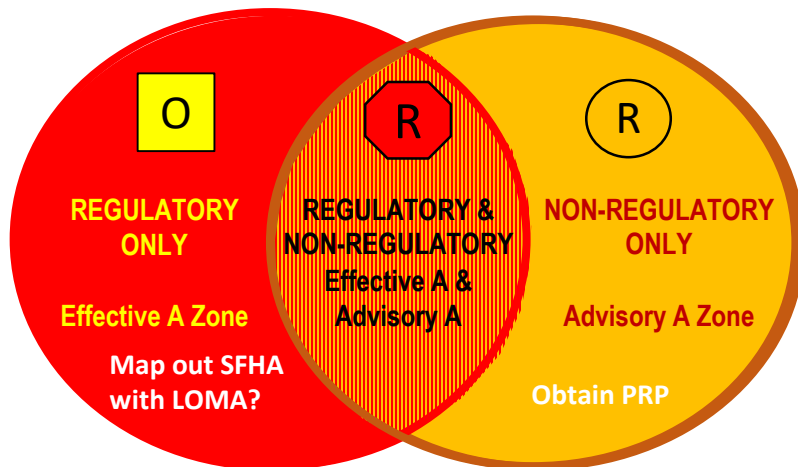
Effective SFHA versus Preliminary SFHA



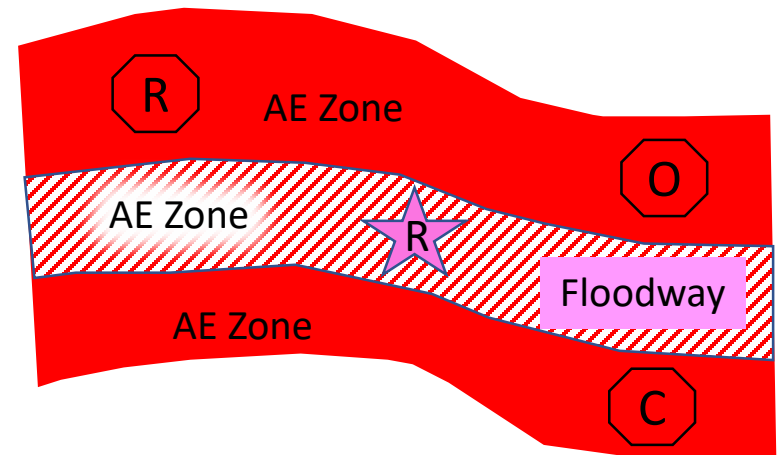
Effective AE Zone versus Updated AE Zone



Effective A Zone versus Advisory A Zone



Effective AE versus Floodway AE



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Regulatory Floodway

Mapped IN SFHA

No Change

Mapped Out of SFHA

Analogous to Changes Since Last FIRM (CSLF), but Building Changes Since Last FIRM (bCSLF)

High Risk Non-Regulatory

- Preliminary Studies
- Advisory A Zones
- Updated AE Zones

- ## High Risk Non-Regulatory
- Preliminary Studies
 - Advisory A Zones
 - Updated AE Zones

Outreach: Property Mapped **into** Future SFHA

High-Risk Advisory A or AE Zones. High-risk advisory flood hazard information from State-Initiated Studies that will likely be incorporated into future effective regulatory or community identified floodplains.

Property Mapped into Future SFHA or Community Identified Floodplain

- ❑ A state-based flood map study indicates that this parcel or building(s) within the parcel has been mapped into a High-Risk Advisory Zone. This property is at high risk of a 1% annual (100-Year) chance flood event
- ❑ A mapped High-Risk Advisory Zone (orange color on WV Flood Tool) denotes a flood hazard area that will likely be incorporated into future effective FIRM maps. New development should not occur in updated floodplains without a detailed study to show the development reasonably safe from flooding.
- ❑ The local floodplain management regulations required by the NFIP apply only in SFHAs. However, communities may regulate development in areas of high-risk outside the SFHA. Should a community want to regulate development beyond the FIRM, then a community may formally adopt High-Risk Advisory Zones as a “community identified floodplain” in its local floodplain ordinance.
- ❑ Most homeowner’s insurance policies do not provide coverage for damage due to flooding. Contact your insurance agent to learn about lower-cost “Preferred Risk Policy (PRP)” options offered by the NFIP for properties being mapped into higher-risk flood hazard areas. When a property’s flood zone changes from a non–Special Flood Hazard Zone (SFHA) to an SFHA as a result of a FIRM update, then the property owner will have to follow the guidelines of a Standard Flood Insurance Policy (SFIP). Mortgage-backed loans for properties within regulatory SFHA are required by federal law to carry flood insurance. For more information on flood insurance, visit the National Flood Insurance Program’s website, www.floodsmart.gov.

Flood Insurance Outreach Information to Property Owners for pending Flood Zone Change or Future Map Condition

Outreach: Property Mapped **out** Future SFHA

High-Risk Advisory A or AE Zones. High-risk advisory flood hazard information from State-Initiated Studies that will likely be incorporated into future effective regulatory or community identified floodplains.

Property Owners Mapped out of Future SFHA or Community Identified Floodplain

- ☐ A state-based flood map study indicates that this parcel or building(s) within the parcel has been mapped out of a High-Risk Advisory Zone and may qualify for a Letter of Map Amendment (LOMA).
- ☐ The [Online LOMC](#) web application allows homeowners or their designated representatives to easily request a Letter of Map Change (LOMC). Use this site if your property was inadvertently included in a flood zone, or if the addition of fill elevated your property so that it is above the flood zone. Use the WV Flood Tool to provide supporting documents including LiDAR-based elevation information if a field survey (Elevation Certificate) is not required.
- ☐ A LOMA with a REMOVAL determination status will map the parcel or building out of the Special Flood Hazard Area (SFHA) and into a lower risk zone, shown on the FIRM as "X". If you have a mortgage from a federally regulated lender, you will no longer be required by federal law to maintain flood insurance.
- ☐ It is important to know that many flood claims are made by property owners located outside the high-risk flood zone and that the issuance of a LOMC does not mean the structure or property is safe from all flooding. Floods greater than the 1-percent-annual-chance event (100-year flood) can, and do, occur. Therefore, because flooding also occurs in areas of moderate or minimal flood risk, FEMA recommends flood insurance coverage, even if it is not required by law or a lender.
- ☐ While flood insurance becomes optional, maintaining coverage is recommended as the flood risk has only been reduced, not removed. Lower cost flood insurance from the National Flood Insurance Program (NFIP) is available in low- to moderate-risk areas and you may also qualify for the even lower cost Preferred Risk Policy (PRP). Contact your insurance agent to learn more about how to convert to the PRP. For more information on flood insurance, visit www.floodsmart.gov.

Water Depth: about <<value>>

Water Depth	Message	Sources
Water Depth:	About << value >> ft.	<ul style="list-style-type: none">• Model-Backed Depth Grids: Engineering Studies using modeling software like HEC-RAS:<ul style="list-style-type: none">○ RiskMAP Restudy (Effective and Preliminary)○ Non-Restudy Updated AE Zones○ Advisory Flood Heights (Approximate A Zones)• Other Depth Grids<ul style="list-style-type: none">○ HAZUS generated○ USGS Inundation Layers

A statewide “composite” Flood Risk Assessment Depth Grid is created from model-backed *effective* and *advisory* depth grids at a 1-meter cell resolution.

Water Depth Grids are a *flood risk assessment* product – *not a flood regulatory* product. Water depths are important for flood loss damages and by flood visualizations of site-specific structures.

Depth grids a source of credits for CRS communities.

See FEMA’s Flood Risk Assessment Guidance (May 2016) for guidance on composite depth grids:

https://www.fema.gov/media-library-data/1469146645661-31ad3f73def7066084e7ac5bfa145949/Flood_Risk_Assessment_Guidance_May_2016.pdf