

# WV Flood Tool 2018

## Talking Points

1. Overview of WV Flood Tool ([www.mapwv.gov/flood](http://www.mapwv.gov/flood))
2. Flood Tool for Disaster Assessment
3. State-Level Data Integration of Reference Layers
  - Parcels, Addresses, Imagery, Elevation
4. Floodplain Management and Mapping Activities
5. WV Hazard Mitigation Grant Application (HMGP)
  - Flood Risk Assessments for 283 communities
  - Landslide Risk Assessments for 55 counties
  - Data Development for missing/incorrect reference layers

# WV Flood Tool 2018

## Flood Tool Overview

([www.mapwv.gov/flood](http://www.mapwv.gov/flood))

- **Public View** for general public
- **Expert View** for floodplain managers
- **RiskMAP View** for community planners

# Public View

The screenshot displays the WV Flood Tool interface. At the top left, there is a yellow house icon and the text "WV Flood Tool" with the slogan "Remember: When In Doubt, It's Not Out!". Navigation links for "About", "Help", and "Home" are in the top right. The interface is divided into a control panel on the left and a results panel on the right. The control panel includes "Views" (Public, Expert, Risk MAP), "Layers" (Flood, Reference, Basemaps), and a search bar with the address "301 W Moler Ave, Martinsburg, WV". A "Hazard Layers" section is also visible. The main map area shows an aerial view with a red flood zone overlay. A specific property at 301 W Moler Ave is circled in yellow, with a yellow target icon. The flood zone is labeled "Zone AE FLOODWAY" and "Dry Run". A blue box in the bottom left of the map area contains the text "General Public Flood Zone Determination". The right-hand "Flood Results Query Panel" provides detailed information about the flood hazard, including FEMA map details, location coordinates, and contact information.

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

Views: Public Expert Risk MAP  
Layers: Flood Reference Basemaps  
Search: Address 301 W Moler Ave, Martinsburg, WV

**Flood Results Query Panel**

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

FEMA Issued Flood Map: [54003C0154E](#)   
Map Effective Date: 7/7/2009  
Contacts: [Berkeley](#)

Community: City of Martinsburg  
CID: 540006 CRS Class: 8

Location (long, lat): (-77.959394, 39.468408)  
Location (UTM 17N): (761571, 4373172)

External Viewers:

Elevation: About 445 ft (Source: [FEMA 2012](#))

Address  : 301 W MOLER AVE, Martinsburg, West Virginia, 25404

Parcel ID  : 02-06-0006-0048-0000 [Disclaimer](#)

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

**General Public Flood Zone Determination**

@WVGISTC Leaf-Off Mixed-Resolution Imagery

# WV Flood Tool (smartphone)



*Mobile Flood Tool*

- **Smartphone Version has limited functionality**
- **Public View only**
- **Future upgrade planned**

# Expert View – External Links

The screenshot displays the WV Flood Tool interface in Expert View. The top navigation bar includes 'Public', 'Expert' (highlighted), and 'Risk MAP'. The 'Views' dropdown is also highlighted. The 'Layers' panel on the left shows various map layers, with 'Water Depth (HEC-RAS)-5' selected. The main map area shows a flood hazard map with a blue rectangle highlighting a specific area. The right-hand panel displays detailed information for the selected area, including FEMA Flood Map details, Flood Profile, and Elevation Metadata. Three black callout boxes with yellow text point to specific elements: 'FEMA Flood Maps' points to the FEMA Issued Flood Map entry, 'Flood Profile' points to the Flood Profile entry, and 'Elevation Metadata' points to the Elevation entry. The URL at the bottom is <https://www.mapwv.gov/flood/map/?v=1&pid=02-06-0006-0048-0000>.

**Views:** Public, **Expert**, Risk MAP

**Layers:** Hazard Layers, FEMA LOMA\*, FEMA LOMR\*, River Mile Marker\*, Levees\*, General Structures\*, High Water Marks, Real-time Stream Gage\*, Elevation Certificates, Mitigated Properties, Water Depth (HEC-RAS)-5

**Search:** Address: 301 West Moler Ave, Martinsburg, WV

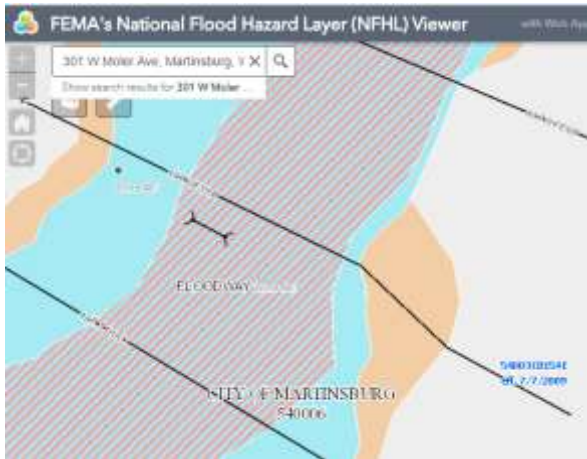
**Tools:** [Icons for various map tools]

**FEMA Flood Maps:** FEMA Issued Flood Map: 54003C0154E, Map Effective Date: 7/7/2009

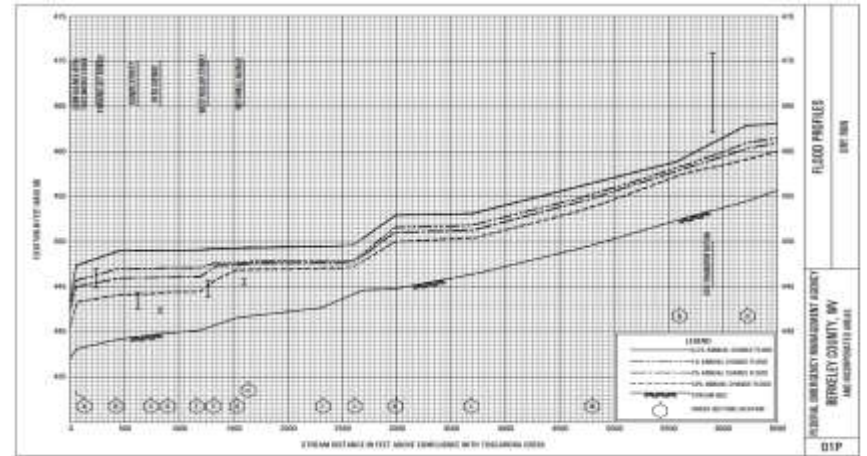
**Flood Profile:** Flood Profile: 54003\_001

**Elevation Metadata:** Elevation: About 445 ft (Source: FEMA 2012)

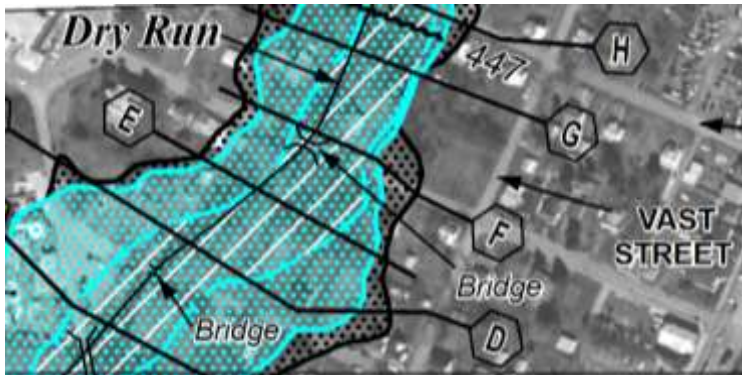
# Expert View – External Links



FEMA's NFHL Viewer



Flood Profile



FEMA Issued Flood Map

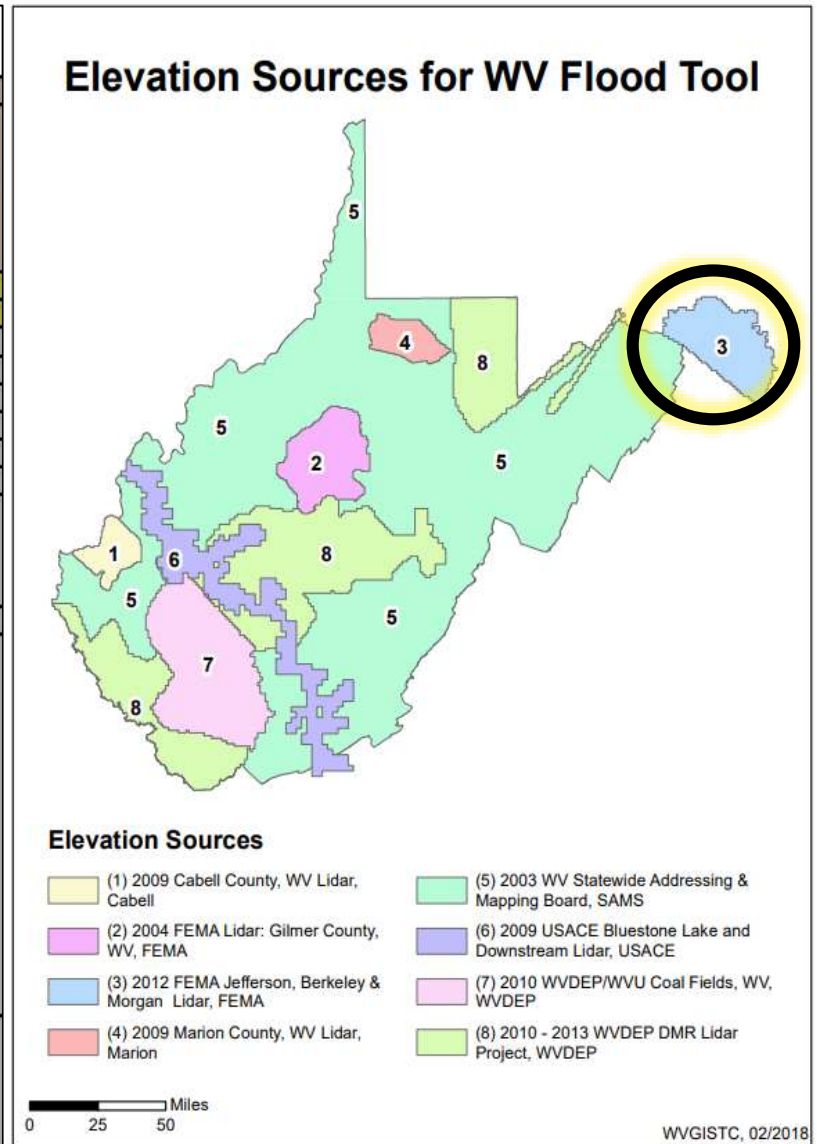


Street View Image

# Expert View – External Links

| Elevation Sources for WV Flood Tool |   |                                    |  |   |  |  |
|-------------------------------------|---|------------------------------------|--|---|--|--|
| #                                   | 1   | 2                                  | 3  | 4   | 5  | 6  |
| Project Name                        | 2009 Cabell County, WV Lidar  | 2004 FEMA Lidar: Gilmer County, WV | 2012 FEMA Virginia Lidar (Jefferson, Berkeley, Morgan)   | 2009 Marion County, WV Lidar  | 2003 WV Statewide Addressing & Mapping Board | 2009 USACE Lidar: Bluestone Lake and Downstream, WV    |
| Source                              | Cabell  | FEMA                               | FEMA   | Marion  | SAMS   | USACE  |
| Year                                | 2009  | 2004                               | 2012   | 2009  | 2003   | 2009   |
| QualityLevel                        | 3   | 4                                  | 2  | 4   |  | 3  |
| Grid Resolution                     | 2m  | 2m                                 | 1m   | 2m  | 3m   | 2m   |
| SourceDataType                      | Lidar-Topo  | Lidar-Topo                         | Lidar-Topo   | Lidar-Topo  | Photogrammetry                               | Lidar-Topo   |
| Restrictions                        | Public  | Public                             | Public   | Other   | Public                                       | Public   |
| HorizontalDatum                     | NAD83   | NAD83                              | NAD83  | NAD83   | NAD83  | NAD83  |
| HorizontalAccuracy                  | Not Provided  | 0.20 m                             | 1 m  | 0.76 m  | 3 m  | 0.45 m   |
| VerticalAccuracy                    | 10.14 cm RMSEz  | 36 cm RMSE                         | 10 cm RMSEz  | 25 cm RMSE  | 10 feet                                      | 2-foot contours: 18.2 cm; 4-foot contours: 72.6 cm     |
| VerticalDatum                       | NAVD88  | NAVD88                             | NAVD88   | NAVD88  | NAVD88                                       | NAVD88   |
| Notes                               | Part of 2008 NGA Urban Area, USGS Partnership. Project name in The National |                                    | Covered by multiple projects in The National Map: VA-WV-MD_FEMA_RE_GION3_UTM18_2012, VA-WV-MD_FEMA_RE_GION3_UTM17_2012, and VA_LOUDOUN_CO_2012 | Originally delivered to Marion County by CVI in 2009; recreated with permission for WVDEP in 2011 | Statewide coverage                           | USACE-Huntington District; ARRA project                |
| ProductsAvailable                   | Points  | Bare earth points, DEMs (1m)       | Points, bare earth, breaklines, DEM  | Not Provided  | Points, breaklines, DEM, 10-ft contours      | Points, DTMs, DEMs, breaklines, 2 ft and 4 ft contours |

**Elevation Metadata**



# Expert View – External Links

**Views** Expert Risk MAP Flood Reference Basemaps Search 301 West Moler Ave, Martinsburg, WV Tools

Click on each tab to view information

Address Parcel Risk

| DESCRIPTION         | Value                                     |
|---------------------|---|
| IAS Parcel ID       | 06 600480000000 (Detailed Report)         |
| GIS Parcel ID       | 02-06-0006-0048-0000                      |
| County ID           | 2 - Berkeley                              |
| District Name       | 06 - Martinsburg Corp                     |
| Map                 | 6 (click map # for a PDF map)             |
| Parcel Number       | 48  |
| Parcel Suffix       |   |
| Legal Description   | 80 X 130;<br>LOT 123 & 124 R & L ADDITION |
| Acreage (deed)      | 0.2388                                    |
| Tax Year            | 2017                                      |
| Tax Class           | 2   |
| Deed Book           | 1047                                      |
| Deed Page           | 667                                       |
| Property Class Type | R - Residential                           |

**(2) Click on Parcel ID to link to Web Report**

**(1) Click on Parcel ID to open Parcel Tab**

External Viewers: Parcel ID  : 02-06-0006-0048-0000

Flood Hazard Area: Location is WITHIN the FEMA 100-year floodplain.  
Flood Zone: AE  
Stream: Dry Run  
Watershed (HUC8): Conococheague-Opequon (2070004)  
FEMA Issued Flood Map: 54003C0154E  
Map Effective Date: 7/7/2009  
Contacts: Berkeley  
Flood Height: Refer to FIS report for BFE  
Water Depth: About 12.3 ft (Source: EQL)  
HEC-RAS Model: N/A  
Flood Profile: 54003\_001  
Community: City of Martinsburg  
CID: 540006 CRS Class: 8  
Location (long, lat): (-77.959423, 39.468381)  
Location (UTM 17N): (761568, 4373169)  
Elevation: About 445 ft (Source: FEMA 2012)  
Address: 301 W MOLER AVE, Martinsburg, West Virginia, 25404



# Expert View – External Links

| General Information                  |             |   |                  |                                       |                     |               |               |   |                       |          |
|--------------------------------------|-------------|---|------------------|---------------------------------------|---------------------|---------------|---------------|---|-----------------------|----------|
| Tax Class                            | Book / Page | Deeded Acres  | Calculated Acres | Legal Description                     |                     |               |               |   |                       |          |
| 2                                    | 1047 / 667  | 0.239   | 0.23             | 80 X 130 LOT 123 & 124 R & L ADDITION |                     |               |               |   |                       |          |
|                                      |             | 0.239   | 0.23             |                                       |                     |               |               |   |                       |          |
| Cost Value                           |             |   |                  |                                       | Appraisal Value     |               |               |   |                       |          |
| Dwelling Value                       |             | \$75,600  |                  |                                       | Land Appraisal      |               | \$14,100      |   |                       |          |
| Other Bldg/Yard Values               |             | \$11,770  |                  |                                       | Building Appraisal  |               | \$87,700      |   |                       |          |
| Commercial Value                     |             | ---   |                  |                                       | Total Appraisal     |               | \$101,800     |   |                       |          |
| Building Information                 |             |   |                  |                                       |                     |               |               |   |                       |          |
| Property Class                       |             | R - Residential   |                  |                                       |                     |               |               |   |                       |          |
| Land Use                             |             | 101 - Residential 1 Family  |                  |                                       |                     |               |               |   |                       |          |
| Sum of Structure Areas               |             | 1,232   |                  |                                       |                     |               |               |   |                       |          |
| # of Buildings (Cards)               |             | 1   |                  |                                       |                     |               |               |   |                       |          |
| Card                                 | Year Built  | Stories   | Total Rooms      | Grade                                 | Architectural Style | Exterior Wall | Basement Type | Square Footage (SFLA)                       |                       |          |
| 1                                    | 1920        | 2   | 5                | C                                     | Colonial            | Brick         | Part          | 1,232                                       |                       |          |
|                                      |             |   |                  |                                       |                     |               |               | 1,232                                       |                       |          |
| Other Building and Yard Improvements |             |   |                  |                                       |                     |               |               |   |                       |          |
| Bldg/ Card #                         | Line        | Type  | Year Built       | Grade                                 | Units               | Size          | Area          | Replace Cost                                | Adjusted Replace Cost |          |
| 1                                    | 1           | Brick or Stone Detached Garage  | 1995             | C                                     | 1                   | 24x28         | 672           | \$12,020                                    | \$11,770              |          |
|                                      |             |   |                  |                                       |                     |               | 1             | 672   | \$12,020              | \$11,770 |
| Flood Zone Information               |             |   |                  |                                       |                     |               |               | Learn more at <a href="#">WV Flood Tool</a> |                       |          |
| Acres (c.)                           |             | Risk  |                  |                                       |                     |               |               |   |                       |          |
| 0.23                                 |             | <b>High</b> This parcel appears to be in a HIGH RISK flood hazard zone. |                  |                                       |                     |               |               |   |                       |          |
| Sales History                        |             |   |                  |                                       |                     |               |               |   |                       |          |
| Sale Date                            | Price       | Sale Type   | Source Code      | Validity Code                         | Book                | Page          |               |   |                       |          |
| 11/17/2008                           | \$135,000   | Land and Buildings  | 4                | 1                                     | 915                 | 095           |               |   |                       |          |

## Detailed Property Report

<http://www.mapwv.gov/Assessment/?PID=0206000600480000000>

# RiskMAP View

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

**Flood Risk Awareness & Mitigation Planning**

Public | Exper | **Risk MAP**

Layers: Flood | Reference | Basemaps

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

Tools: [Icons for various map functions]

**Layers Panel:**

- Site Bldg Exposure Costs (BI)
- Site Bldg Damage Loss (UDF)  
Render Map By:  Percent  Value
- 2016-17 Hazus Level II (Census Blocks)
- Total Bldg Assets Exposed
- Building Damage Loss
- Debris Removal
- Temporary Shelters
- 2010 Hazus Level I

**Legend:**

Risk Assessment - UDF  
Site BLDG Loss (UDF)(% Damaged)

- 0
- 0 - 1
- 1 - 10
- 10 - 25
- 25 - 50
- 50 - 100

**Information Sidebar:**

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

FEMA Issued Flood Map: 54003C0154E  
Map Effective Date: 7/7/2009  
Contacts: Berkeley

Flood Height: Refer to FIS report for BFE  
Water Depth: About 4.8 ft (Source: EQL)  
HEC-RAS Model: N/A  
Community: City of Martinsburg  
CID: 540006 CRS Class: 8

Location (long, lat): (-77.959498, 39.468441)  
Location (UTM 17N): (761562, 4373175)

Elevation: About 449 ft (Source: FEMA 2012)

Address: 301 W MOLER AVE, Martinsburg, West Virginia, 25404

Parent ID: 02-06-0006-0048-0000

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

# RiskMAP View – 3D Visualization


3D Flood Model

3D Visualization

301 W MOLER AVE, Martinsburg, West Virginia, 25404

Depth

- [0 Foot](#)
- [1 Foot](#)
- [2 Feet](#)
- [3 Feet](#)
- [4 Feet](#)
- [5 Feet](#)**
- [6 Feet](#)
- [7 Feet](#)
- [8 Feet](#)
- [9 Feet](#)
- [10 Feet](#)
- [11 Feet](#)
- [12 Feet](#)
- [13 Feet](#)



Parcel ID: 02-06-0006-0048-0000      Water Depth: ~ 4.8 ft ( EQL)      [Google Map](#)

[12 Feet](#) Wall and Paintings - Second layer of drywall and paintings damaged  
Electrical - Light switches, fixtures, and main panel would be destroyed at 5.0 feet.

[13 Feet](#)

<https://www.mapwv.gov/flood/map/?wkid=102100&x=-8678412&y=4788996&l=11&v=2>

# RiskMAP View – 3D Visualization

Click on each tab to view information

Address Parcel Risk

## Exposure Replacement Cost (BI)

Building Replacement Cost \$156,882

Content Cost \$108,165

Building Area 1,232 sq ft

Hazus Occupancy Code RES1

**Building Exposure**

Number of Stories 2

Year Built 1920

Building Construction Brick

Building Condition Low

Building Foundation Basement

First Floor Ht 4 ft above ground

## Damage Estimates (UDF)

Building Damage Pct 57%

Building Loss USD \$88,834

**HAZUS Loss Estimate**

Content Damage Pct 54%

Content Loss USD \$42,701



**Flood Depth**



**Street View Image**

# Flood Layers

| FLOOD LAYERS  | Public View<br><i>for general public</i>  | Expert View<br><i>floodplain managers</i>   | RiskMAP View<br><i>flood risk reduction</i>   |
|---|---|---|---|
| <b>Flood Hazard Layers</b> <ul style="list-style-type: none"> <li>• Flood Hazard Areas</li> <li>• Flood Height Values (BFE and AFH)</li> <li>• Panel Index (link to FEMA issued map)</li> <li>• X-Sections / BFE's</li> <li>• LOMAs / LOMRs*</li> <li>• Structures, Levees, Mile Markers*</li> <li>• Political Areas/CRS Communities</li> <li>• Flood Elevation Certificates (Barbour Co. Pilot)</li> </ul> | <p style="text-align: center;">Yes**</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p> | <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> | <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> |
| <b>Flood Risk</b> <ul style="list-style-type: none"> <li>• Flood Water Depths (HEC-RAS models)</li> <li>• Other Water Depths (USGS HWM, Hazus, EQL)</li> <li>• Historical High-Water Marks (points)</li> <li>• Building-Specific Flood Risk Assessments</li> <li>• <i>Historical Flood/Dam/Levee Inundation Maps</i></li> </ul>   | <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p>   | <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p>   | <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p>  |
| <b>Property Mitigation</b> <ul style="list-style-type: none"> <li>• Mitigated Structures/Buyout Properties</li> </ul>   | <p style="text-align: center;">No</p>   | <p style="text-align: center;">Yes</p>  | <p style="text-align: center;">Yes</p>  |
| <b>Flood Prediction</b> <ul style="list-style-type: none"> <li>• USGS Real-Time Stream Gages*</li> </ul>  | <p style="text-align: center;">No</p>   | <p style="text-align: center;">Yes</p>  | <p style="text-align: center;">Yes</p>  |

*Italics Text* = To Be Added in Future

\* External Agency Web Map Services

\*\* 100-YR Floodplain only

# Flood Query Results Panel

| #  | Each Location Query Answers:                |
|----|---|
| 1  | In Flood Hazard Area? Flood Zone? Floodway? |
| 2  | Stream & Watershed names?                   |
| 3  | FEMA Issued Flood Map / NFHL links?         |
| 4  | Floodplain Manager Contact?                 |
| 5  | Flood Height value or information?          |
| 6  | Water Depth value and source?               |
| 7  | HEC-RAS Model available?                    |
| 8  | Flood Profile available?                    |
| 9  | CRS community information?                  |
| 10 | Coordinate x,y location?                    |
| 11 | External Map Viewer Links?                  |
| 12 | Ground elevation value and source?          |
| 13 | E-911 Address (link to address info)        |
| 14 | Parcel ID (link to property info)           |
| 15 | Flood risk assessment info?                 |
| 16 | 3D flood visualization?                     |



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

**2** Stream: Dry Run  
 Watershed (HUC8): Conococheague-Opequon (2070004)

**3** FEMA Issued Flood Map: [54003C0154E](#)

Map Effective Date: 7/7/2009

**4** Contacts: [Berkeley](#)

**5** Flood Height: Refer to FIS report for BFE [More Info](#)

**6** Water Depth: About 13.7 ft (Source: EQL)

**7** HEC-RAS Model: N/A

**8** Flood Profile: [54003\\_001](#)

**9** Community: City of Martinsburg  
 CID: 540006 CRS Class: 8

**10** Location (long, lat): (-77.959501, 39.468345)  
 Location (UTM 17N): (761562, 4373164)

**11** External Viewers:

**12** Elevation: About 446 ft (Source: FEMA 2012)

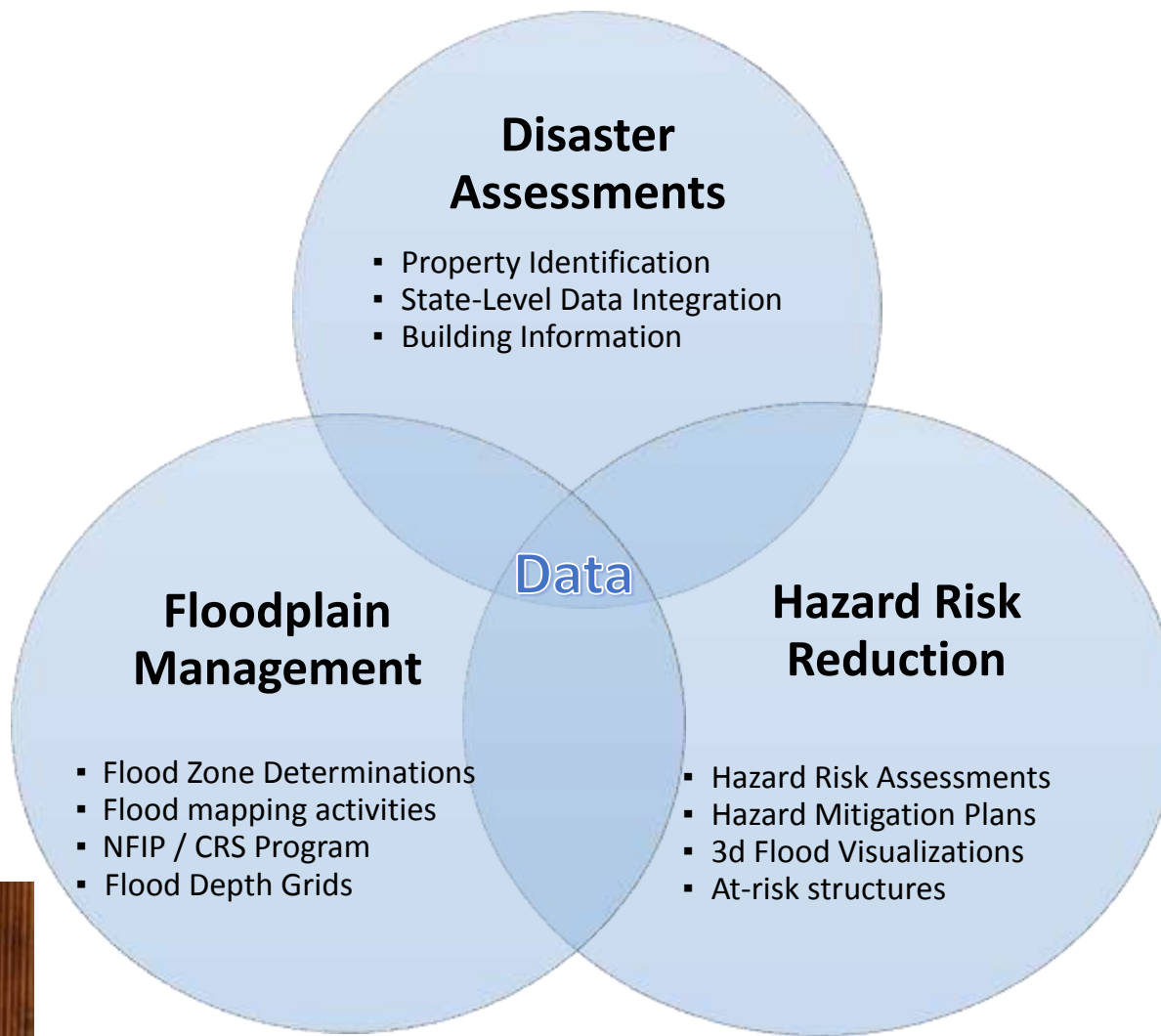
**13** Address: [301 W MOLER AVE, Martinsburg, West Virginia, 25404](#)

**14** Parcel ID: [02-06-0006-0048-0000](#) [Disclaimer](#)

**15** Flood Risk Information [Related Resources](#)  
[Flood Risk Assessment](#)

**16** [3D Flood Visualization](#)

# WV Flood Tool 2018



Kevin Sneed  
State NFIP Coordinator



Brian Penix  
State Hazard Mitigation Officer

# WV Flood Tool 2018

## Disaster Assessment

Subject: Letter of Appreciation for Support to FEMA-4331-DR-WV

I want to personally thank you and your colleagues at the West Virginia GIS Technical Center for the outstanding support your website <https://www.mapwv.gov/flood/map/> provided to the Individual Assistance Program as part of the Federal Emergency Management Agency (FEMA) response to July's Severe Storms and Flooding in northern West Virginia.

Our IA teams were able to match Preliminary Damage Assessment (PDA), 911 addresses, and registration data sets to your parcel data to ensure all impacted individuals and families were contacted by our Disaster Survivor Assistance Teams and registered for assistance. Once registered, we were able to assist in resolving a myriad of issues, including property ownership and property mapping location.

My staff remarked the website was easy to navigate, and the ultimate compliment, "it got the job done". We were able to respond more quickly to the needs of the survivors in a more timely manner. Your support to the whole community partnership has allowed the FEMA team to support the residents of West Virginia efficiently and effectively. We are fortunate to have you as a team partner. Your dedication is much appreciated by FEMA as well as the communities who were affected by this most recent disaster.

Thank you for your continued support.

Sincerely,



Steven S. Ward  
Federal Coordinating Officer  
FEMA-4331-DR-WV

U.S. Department of Homeland Security  
Federal Emergency Management Agency  
West Virginia Joint Field Office  
426 Leon Sullivan Way  
Charleston, WV 25301



**FEMA**

**FEMA Letter dated September 29, 2017, about  
WV Flood Tool support for Disaster Assessments**



# Property Identification

**Collect multiple spatial identifiers to verify location**

|                       |   |
|-----------------------|---|
| <b>Parcel</b>         | 01-08-0011-0069-0000  |
| <b>Address</b>        | 604 S Main St, Philippi, West Virginia, 26416   |
| <b>X,Y Coordinate</b> | -80.033529, 39.144752   |
| <b>Share URL Link</b> | <a href="https://www.mapwv.gov/flood/map/?wkid=102100&amp;x=-8909292&amp;y=4742427&amp;l=12&amp;v=1">https://www.mapwv.gov/flood/map/?wkid=102100&amp;x=-8909292&amp;y=4742427&amp;l=12&amp;v=1</a> |

# Property Identification

**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: [Share Link]

**604 Main St, Philippi, WV 26416**

**X,Y COORD.**

**ADDRESS**

**PARCEL**

**SHARE LINK**

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

FEMA Issued Flood Map: 54001C0118C  
Map Effective Date: 5/3/2011  
Contacts: Barbour

Flood Height: Refer to FIS report for BFE  
Water Depth: N/A  
HEC-RAS Model: N/A  
Flood Profile: 54001\_001  
Community: City of Philippi  
CID: 540004 CRS Class: 8

Location (long, lat): (-80.033529, 39.144752)  
Location (UTM 17N): (583519, 4333284)

External Viewers: [Icons]

Elevation: About 1315 ft. (Source: SAMS 2003)

Address: 604 S MAIN ST, PHILIPPI, West Virginia, 26416

Parcel ID: 01-08-0011-0069-0000

Flood Risk Information  
Flood Risk Assessment: N/A  
3D Flood Visualization: No Depth Grid Available

Scale: 1:1,128  
x: -80.033003, y: 39.144112  
©WVGISTC Leaf-Off Mixed-Resolution Imagery

Share Link: <https://www.mapwv.gov/flood/map/?wkid=102100&x=-8909292&y=4742427&l=12&v=1>

# Property Identification

E-911 and County Assessor report location as 604 S Main Street

## WV Real Estate Assessment Data



[About](#)

[New Search](#)

|           |                      |          |      |        |         |      |           |
|-----------|----------------------|----------|------|--------|---------|------|-----------|
| Parcel ID | 01-08-0011-0069-0000 | Tax Year | 2017 | County | Barbour | Date | 5/29/2018 |
| Root PID  | 01080011006900000000 |          |      |        |         |      |           |

### Property Owner and Mailing Address

|                 |                                   |
|-----------------|-----------------------------------|
| Owner(s)        | HAYHURST DOROTHY                  |
| Mailing Address | 645 MAPLE AVE, PHILIPPI, WV 26416 |

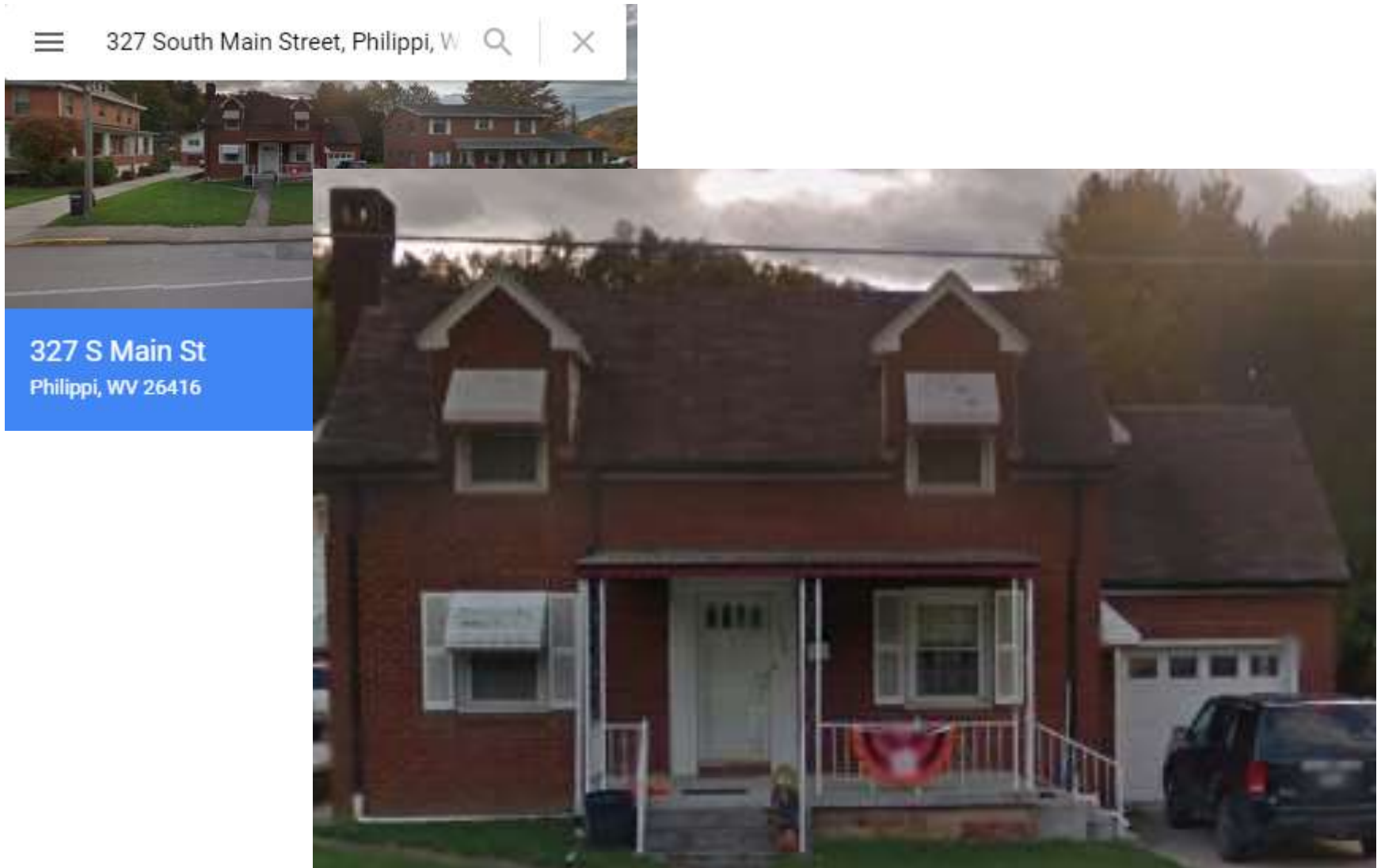
### Property Location

|                  |   |
|------------------|---|
| Physical Address | 604 S MAIN ST   |
| E-911 Address    | 604 S MAIN ST PHILIPPI WV 26416   |
| Parcel ID        | 01-08-0011-0069-0000  |
| County           | 1 - Barbour   |
| District         | 8 - Philippi Corp   |
| Map              | <a href="#">0011</a> (Click for PDF tax map)  |
| Parcel No.       | 0069  |
| Parcel Suffix    | 0000  |
| Map View Link    | <a href="https://mapwv.gov/parcel/?pid=01-08-0011-0069-0000">https://mapwv.gov/parcel/?pid=01-08-0011-0069-0000</a> |

### Property Parcel Address

### E-911 Address

# Property Identification



**Google Street View and House Number list location as 327 S Main Street**

# Property Identification

U.S. DEPARTMENT OF HOMELAND SECURITY  
FEDERAL EMERGENCY MANAGEMENT AGENCY  
*National Flood Insurance Program*

## ELEVATION CERTIFICATE

Important: Read the instructions on pages 1–9.

### SECTION A – PROPERTY INFORMATION

A1. Building Owner's Name Dorothy Hayhurst

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.  
327 S. Main Street

City Philippi

State WV

ZIP Code 26416

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)  
327 S. Main Street

IMPORTANT: In these spaces, copy the corresponding information from Section A.

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.  
327 South Main

City Philippi

State WV

ZIP Code 26416

FOR USE

Policy No.

Company

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least 2 building photographs below according to item A5. Identify all photographs with date taken; "Front View" and "Rear View", and, if required, "Right Side View." When applicable, photographs must show the foundation with representative examples of the flood indicated in Section A5. If submitting more photographs than will fit on this page, use the Continuation Page.

09/24/14 – Front/Right with Garage



FEMA's Elevation Certificate lists location as 327 S Main Street

# Property Identification

**But the correct location is 604 S Main Street**  
***Always collect multiple spatial identifiers to verify location!***

|                |   |
|----------------|---|
| Parcel         | 01-08-0011-0069-0000  |
| Address        | 604 S Main St, Philippi, West Virginia, 26416   |
| X,Y Coordinate | -80.033529, 39.144752   |
| Share URL Link | <a href="https://www.mapwv.gov/flood/map/?wkid=102100&amp;x=-8909292&amp;y=4742427&amp;l=12&amp;v=1">https://www.mapwv.gov/flood/map/?wkid=102100&amp;x=-8909292&amp;y=4742427&amp;l=12&amp;v=1</a> |

## TEMPLATE FOR SPATIAL LOCATIONS FOR FLOOD ELEVATION CERTIFICATES

| EC # | E-911 Address                                   | Parcel ID            | Longitude, Latitude   | Share Tool Link   |
|------|---|----------------------|-----------------------|---|
| EX   | 195 N WALNUT ST, PHILIPPI, West Virginia, 26416 | 01-08-0004-0109-0000 | -80.041465, 39.154333 | <a href="https://www.mapwv.gov/flood/map/?wkid=102100&amp;x=-8910178&amp;y=4743809&amp;l=12&amp;v=1">https://www.mapwv.gov/flood/map/?wkid=102100&amp;x=-8910178&amp;y=4743809&amp;l=12&amp;v=1</a> |
| 1    | 604 S MAIN ST, Philippi, West Virginia, 26416   | 01-08-0011-0069-0000 | -80.033472, 39.144704 | <a href="https://www.mapwv.gov/flood/map/?wkid=102100&amp;x=-8909285&amp;y=4742420&amp;l=11&amp;v=1">https://www.mapwv.gov/flood/map/?wkid=102100&amp;x=-8909285&amp;y=4742420&amp;l=11&amp;v=1</a> |

**Example Excel Spatial Template for Elevation Certificates in West Virginia**

# Property Identification – Case Study

**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

**Correct Address is 604 Main Street – Confirmed with Floodplain Manager**

**604 Main St, Philippi, WV 26416**

**Flood Hazard Information:**  
Flood Hazard Area: Location is **WITHIN** the FEMA 100-year floodplain.  
Flood Zone: AE  
Stream: Anglins Run  
Watershed (HUC8): Tygart Valley (5020001)  
FEMA Issued Flood Map: 54001C0118C  
Map Effective Date: 5/3/2011  
Contacts: Barbour  
Flood Height: Refer to FIS report for BFE  
Water Depth: N/A  
HEC-RAS Model: N/A  
Flood Profile: 54001\_001  
Community: City of Philippi  
CID: 540004 CRS Class: 8  
Location (long, lat): (-80.033604, 39.144726)  
Location (UTM 17N): (583512, 4333281)  
Elevation: About 1315 ft (Source: SAMS 2003)  
Address: 604 S MAIN ST, PHILIPPI, West Virginia, 26416  
Parcel ID: 01-08-0011-0069-0000  
Flood Risk Information: Flood Risk Assessment: N/A, 3D Flood Visualization: No Depth Grid Available

# Property Identification – Case Study

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

604 Main St, Philippi, WV 26416

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

**Correct information used to add Elevation Certificate point to WV Flood Tool**

| Elevation Certificate |  |
|-----------------------|--|
| Certificate ID        | 540004-001                                     |
| LAG (ft)              | 1312.80  |
| Parcel #              | 01-08-0011-0069-0000                           |
| Building ID           | 01-08-0011-0069-0000-0604                      |
| Certified Year        | 2014   |
| Address               | 604 S MAIN ST<br>Philippi, West Virginia 26416 |
| Location              | (-80.033538, 39.144688)                        |
| PDF Certificate       | <a href="#">Link</a>                           |

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

FEMA Issued Flood Map: 54001C0118C  
Map Effective Date: 5/3/2011  
Contacts: Barbour

Flood Height: Refer to FIS report for BFE  
Water Depth: N/A  
HEC-RAS Model: N/A  
Flood Profile: 54001\_001

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

Location (long, lat): (-80.033604, 39.144726)  
Location (UTM 17N): (583512, 4333281)

External Viewers: [Icons for various mapping services]

Elevation: About 1315 ft (Source: SAMS 2003)

Address: 604 S MAIN ST, PHILIPPI, West Virginia, 26416  
Parcel ID: 01-08-0011-0069-0000

**Flood Risk Information**  
Flood Risk Assessment: N/A  
3D Flood Visualization: No Depth Grid Available



# WV Flood 2018

## State-Level Data Integration

- **Parcels**
- **Addresses**
- **Imagery**
- **Elevation**

# WV Flood Tool

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

# Flood Tool Data Integration

Views

Layers

Search

Tools

Public Expert Risk MAP Flood Reference Basemaps Address e.g., 123 street name, city, state, zip

Hazard Layers

100-Yr High Risk Flood Zone  
FEMA Effective Floodplain

- Floodway
- Flood Hazard Zone
- Advisory Zone A or Updated Zone AE

**2018 IMAGERY**

**Flood Hazard Area:** Location is **WITHIN** an advisory floodplain but **NOT** a FEMA 100-year effective floodplain. [More Info](#)

**Flood Zone:** Advisory A

**Stream:** Lashmeet Branch

**Watershed (HUC8):** Middle New (5050002)

**FEMA Issued Flood Map:** 54055C0118D [Download](#) [Share](#)

**Map Effective Date:** 3/2/2005

**Contacts:** Mercer

**Community:** Mercer County

**CID:** 540124 **CRS Class:** 10

**Location (long, lat):** (-81.165523, 37.405743)

**Location (UTM 17N):** (485351, 4139896)

**External Viewers:** [Google Earth](#) [ArcGIS](#) [Blender](#) [OpenStreetMap](#)

**Elevation:** About 2092 ft (Source: SAMS 2003)

**Address:** 1734 MATOAKA RD, Rock, West Virginia, 24747

**Parcel ID:** 28-11-0039-0001-0000 [Disclaimer](#)

**Flood Risk Information**

Flood Risk: N/A

**3D Flood Visualization**

**ELEVATION**  
**ADDRESS**  
**PARCEL**

Click on each tab to view information

Address Parcel Risk

**PHYSICAL ADDRESS**

Physical Address: 1734 MATOAKA RD  
*(often incomplete)*

**BUILDING INFORMATION**

|                          |                            |
|--------------------------|----------------------------|
| Property Class Type      | R - Residential            |
| Land Use                 | 101 - Residential 1 Family |
| Year Built               | 1911                       |
| Architectural Style      | Colonial                   |
| Story Height             | 2                          |
| Exterior Wall            | Aluminum                   |
| Construction Area(sq ft) | 2260                       |
| Total Rooms              | 8                          |
| Building Grade           | D                          |
| Basement Type            | Full                       |

Scale: 1:1,728  
x: -81.164847, y: 37.406150

# More Info – Flood Visualization

3D Flood Model

3D Visualization    Related Resources

Depth

- [0 Foot](#)
- [1 Foot](#)**
- [2 Feet](#)
- [3 Feet](#)
- [4 Feet](#)
- [5 Feet](#)
- [6 Feet](#)
- [7 Feet](#)
- [8 Feet](#)
- [9 Feet](#)
- [10 Feet](#)
- [11 Feet](#)
- [12 Feet](#)
- [13 Feet](#)
- [14 Feet](#)
- [15 Feet](#)

1734 MATOAKA RD, Rock, West Virginia, 24747



Parcel ID: 28-11-0039-0001-0000      Water Depth: ~ 0.9 ft ( HEC-RAS)      Google Map

**General Damage** - Furniture, insulation, walls, electrical outlets damaged.

**12 Feet Exterior Wall/Facade** - Painted exterior walls will have to be painted at 0.5 foot to 1.0 foot of water as a result of staining. Walls will have to be painted completely because of the inability to match weather-worn paint. Modern stucco facade materials are destroyed when water gets behind the stucco material, which can occur at 0.5 foot of floodwater. Brick veneer will require cleaning.

**14 Feet Windows** - Includes window frames and panes, as well as structural window frames. These items can sustain some water around them, but by 0.5 feet of floodwater they will need to be completely restored or replaced.

**15 Feet Mobile Home Ductwork** - Underfloor ductwork found in mobile homes and is damaged completely at 0.5 foot of floodwater.

*3D Flood Visualization*

# More info – Web Parcel Report

<http://mapwv.gov/Assessment/?PID=28110039000100000000>

| General Information                  |             |   |                  |                    |                     |               |               |                       |                       |   |
|--------------------------------------|-------------|---|------------------|--------------------|---------------------|---------------|---------------|-----------------------|-----------------------|---|
| Tax Class                            | Book / Page | Deeded Acres  | Calculated Acres | Legal Description  |                     |               |               |                       |                       |   |
| 2                                    | 713 / 0715  | 5.220   | 5.28             | 5.22 ACS BLUESTONE |                     |               |               |                       |                       |   |
|                                      |             | 5.220   | 5.28             |                    |                     |               |               |                       |                       |   |
| Cost Value                           |             |   |                  |                    | Appraisal Value     |               |               |                       |                       |   |
| Dwelling Value                       |             | \$46,900  |                  |                    | Land Appraisal      |               | \$21,100      |                       |                       |   |
| Other Bldg/Yard Values               |             | \$7,760   |                  |                    | Building Appraisal  |               | \$55,000      |                       |                       |   |
| Commercial Value                     |             | ---   |                  |                    | Total Appraisal     |               | \$76,100      |                       |                       |   |
| Building Information                 |             |   |                  |                    |                     |               |               |                       |                       |   |
| Property Class                       |             | R - Residential   |                  |                    |                     |               |               |                       |                       |   |
| Land Use                             |             | 101 - Residential 1 Family  |                  |                    |                     |               |               |                       |                       |   |
| Sum of Structure Areas               |             | 2,260   |                  |                    |                     |               |               |                       |                       |   |
| # of Buildings (Cards)               |             | 1   |                  |                    |                     |               |               |                       |                       |   |
| Card                                 | Year Built  | Stories   | Total Rooms      | Grade              | Architectural Style | Exterior Wall | Basement Type | Square Footage (SFLA) |                       |   |
| 1                                    | 1911        | 2   | 8                | D                  | Colonial            | Aluminum      | Full          | 2,260                 |                       |   |
|                                      |             |   |                  |                    |                     |               |               | 2,260                 |                       |   |
| Other Building and Yard Improvements |             |   |                  |                    |                     |               |               |                       |                       |   |
| Bldg/ Card #                         | Line        | Type  | Year Built       | Grade              | Units               | Size          | Area          | Replace Cost          | Adjusted Replace Cost |   |
| 1                                    | 1           | Frame or CB Detached Garage   | 2004             | C                  | 1                   | 24x32         | 768           | \$8,850               | \$7,760               |   |
|                                      |             |   |                  |                    | 1                   |               | 768           | \$8,850               | \$7,760               |   |
| Flood Zone Information               |             |   |                  |                    |                     |               |               |                       |                       |   |
|                                      |             |   |                  |                    |                     |               |               |                       |                       | Learn more at <a href="#">WV Flood Tool</a> |
| Acres (c.)                           |             | Risk  |                  |                    |                     |               |               |                       |                       |   |
| 5.28                                 |             | <b>High</b> This parcel appears to be in a HIGH RISK flood hazard zone. |                  |                    |                     |               |               |                       |                       |   |

# More Info – Google Street View

<https://goo.gl/maps/FEsUXpGFyAG2>



*Google Street View*



# WV Flood Tool

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

# Flood Tool Data Integration

About Help Home

Views

Layers

Search

Tools

Public Expert Risk MAP Flood Reference Basemaps Address e.g., 123 street name, city, state, zip

Hazard Layers

100-Yr High Risk Flood Zone  
FEMA Effective Floodplain

- Floodway
- Flood Hazard Zone
- Advisory Zone A or Updated Zone AE

**2018 IMAGERY**

**Flood Hazard Area:** Location is **WITHIN** an advisory floodplain but **NOT** a FEMA 100-year effective floodplain. [More Info](#)

**Flood Zone:** Advisory A

**Stream:** Lashmeet Branch

**Watershed (HUC8):** Middle New (5050002)

**FEMA Issued Flood Map:** 54055C0118D [↓](#) [🔗](#)

**Map Effective Date:** 3/2/2005

**Contacts:** Mercer

**Community:** Mercer County

**CID:** 540124 **CRS Class:** 10

**Location (long, lat):** (-81.165523, 37.405743)

**Location (UTM 17N):** (485351, 4139896)

**External Viewers:** [🗺️](#) [📷](#) [📺](#) [🔍](#)

**Elevation:** About 2092 ft (Source: SAMS 2003)

**Address**  : 1734 MATOAKA RD, Rock, West Virginia, 24747

**Parcel ID**  : 28-11-0039-0001-0000 [Disclaimer](#)

**Flood Risk Information**

Flood Risk Assessment [🔗](#) N/A

3D Flood Visualization [🔗](#)

Click on each tab to view information

Address Parcel Risk

**PHYSICAL ADDRESS**

Physical Address **1734 MATOAKA RD**  
*(often incomplete)*

**BUILDING INFORMATION**

|                          |                            |
|--------------------------|----------------------------|
| Property Class Type      | R - Residential            |
| Land Use                 | 101 - Residential 1 Family |
| Year Built               | 1911                       |
| Architectural Style      | Colonial                   |
| Story Height             | 2                          |
| Exterior Wall            | Aluminum                   |
| Construction Area(sq ft) | 2260                       |
| Total Rooms              | 8                          |
| Building Grade           | D                          |
| Basement Type            | Full                       |

**ELEVATION**  
**ADDRESS**  
**PARCEL**

# Spatial Data Layers

Parcels



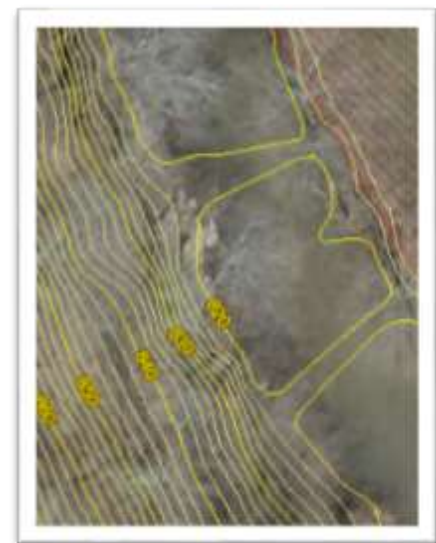
Site Addresses



Aerial Imagery

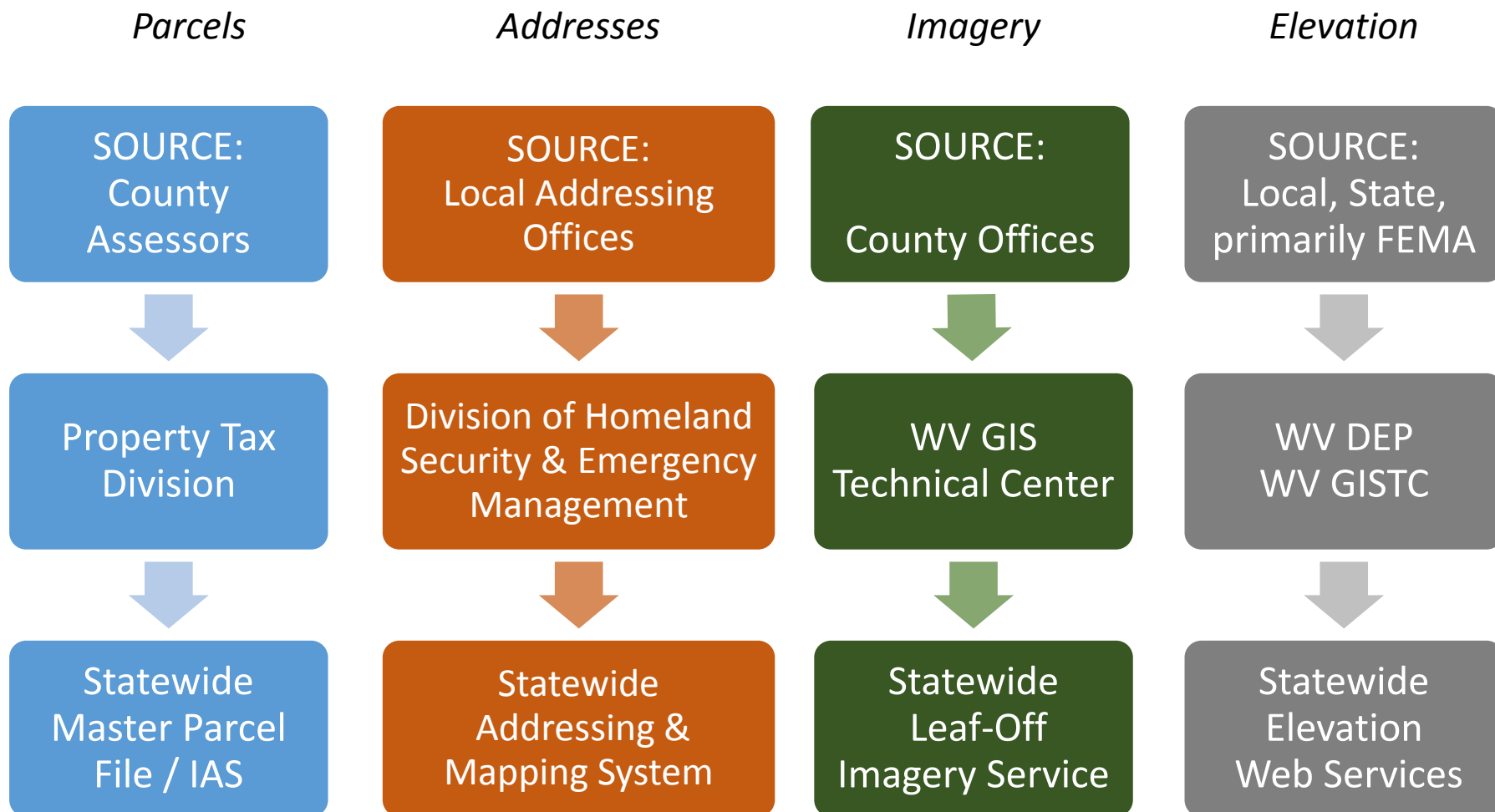


Elevation



*State Spatial Data Infrastructure*

# State-Level Integration



*State-level integration allows for statewide mapping products and services*



# WV Flood Tool 2018

**Parcels**

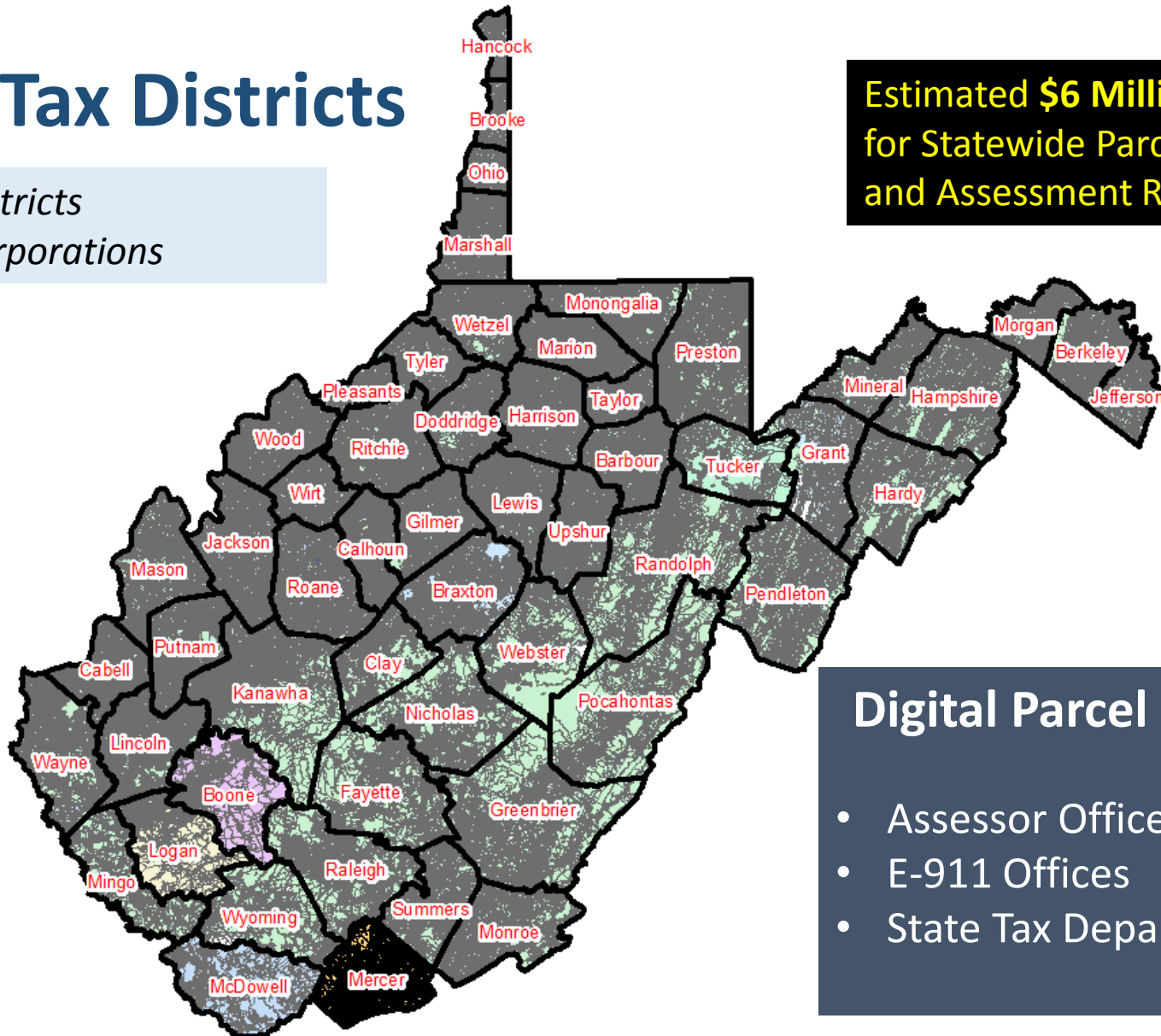
# Statewide Digital Parcel File

## 599 Tax Districts

347 Districts

252 Corporations

Estimated \$6 Million Value  
for Statewide Parcel File  
and Assessment Records



## Digital Parcel Sources

- Assessor Offices
- E-911 Offices
- State Tax Department

# Assessment Building Info

## West Virginia Parcel Property Class Breakdown for Tax Year 2017

| Code  | Property Class | # of Parcels | Percent (%) |
|-------|----------------|--------------|-------------|
| R     | Residential    | 1,164,470    | 79.61%      |
| F     | Farm           | 121,384      | 8.30%       |
| A     | Apartment      | 3,222        | 0.22%       |
| C     | Commercial     | 65,784       | 4.50%       |
| I     | Industrial     | 3,105        | 0.21%       |
| X     | Exempt         | 97,773       | 6.68%       |
| U     | Utility        | 192          | 0.01%       |
| Other | Not classified | 6,837        | 0.47%       |
|       |                | 1,462,767    | 100.00%     |

*Assessment records are important for **building inventories** and are used to estimate the total building exposure (\$) and building loss (\$) for multi-hazards. Often building inventories and corresponding loss estimates are organized by **property class**.*

# Parcels link to Owner/Building Info

## Residential or Farm Property

629 PENNSYLVANIA AVE, Morgantown, WV, 26501  
<https://www.mapwv.gov/flood/map/?wkid=102100&x=-8899684&y=4811867&l=13&v=0>



|                             |                            |
|-----------------------------|----------------------------|
| <b>DESCRIPTION</b>          |                            |
| GIS Parcel ID               | 31-10-0029-0130-0000       |
| Legal Description           | BL 12-1/2 LOT 10           |
| Acreage (deed)              | 0.0373                     |
| Tax Year                    | 2015                       |
| Tax Class                   | 4                          |
| Deed Book / Page            | 1259 / 45                  |
|                             |                            |
| <b>PROPERTY OWNER(S)</b>    |                            |
| Property Owner(s)           | Smith John                 |
|                             |                            |
| <b>BUILDING INFORMATION</b> |                            |
| <b>Property Class Type</b>  | <b>R- Residential</b>      |
| Land Use                    | 101 - Residential 1 Family |
| Year Built                  | 1911                       |
| Architectural style         | Conventional               |
| Exterior Wall               | Aluminum                   |
| Stories                     | 2                          |
| Total Rooms                 | 8                          |
| Building Grade              | C                          |
| Basement Type               | Full                       |
| Structure Area              | 1,320                      |
| Building (card) Number      | 1                          |
| # of main BLDGs (cards)     | 1                          |
|                             |                            |
| <b>APPRAISED VALUES</b>     |                            |
| Land Appraisal              | \$33,200                   |
| Building Appraisal          | \$29,000                   |
| Total Appraisal             | \$62,200                   |

# Parcels link to Owner/Building Info

## Commercial or Industrial Property

1501 DECKERS CREEK BLVD, Morgantown, West Virginia, 26505  
<https://www.mapwv.gov/flood/map/?v=0&pid=31-14-0031-0101-0000>



|                          |                      |
|--------------------------|----------------------|
| <b>DESCRIPTION</b>       | 84 Lumber            |
| GIS Parcel ID            | 31-14-0031-0101-0000 |
| Legal Description        | 5.0922 AC;SABRATON   |
| Acreage (deed)           | 5.09                 |
| Deed Book / Page         | 1376 / 234           |
| <b>PROPERTY OWNER(S)</b> |                      |
| Property Owner(s)        | SPIRIT SPE PORTFOLIO |

|                             |                                       |
|-----------------------------|---------------------------------------|
| <b>BUILDING INFORMATION</b> |                                       |
| <b>Property Class Type</b>  | <b>C- Commercial</b>                  |
| Land Use                    | 373 - Retail-Single Occupancy         |
| Year Built                  | 1994                                  |
| Stories                     | 2                                     |
| Exterior Wall               | Brick or Stone                        |
| Construction Type           | Pre-Engineered Steel                  |
| Building Grade              | D+                                    |
| Basement Type               | None                                  |
| Business Living Area        | 15,255                                |
| Cubic Feet                  | 292,380                               |
| Use Type                    | 34-Retail Store, 82- Multi-Use Office |

|                         |           |
|-------------------------|-----------|
| <b>COST VALUES</b>      |           |
| Other Bldg/Yard Values  | \$67,020  |
| Commercial Value        | \$227,700 |
| <b>APPRAISED VALUES</b> |           |
| Land Appraisal          | \$378,800 |
| Building Appraisal      | \$294,700 |
| Total Appraisal         | \$673,500 |

# GIS Digital Tax Conversion Status

## GIS Tax Parcel Program

Yes (45)

In Progress (4)

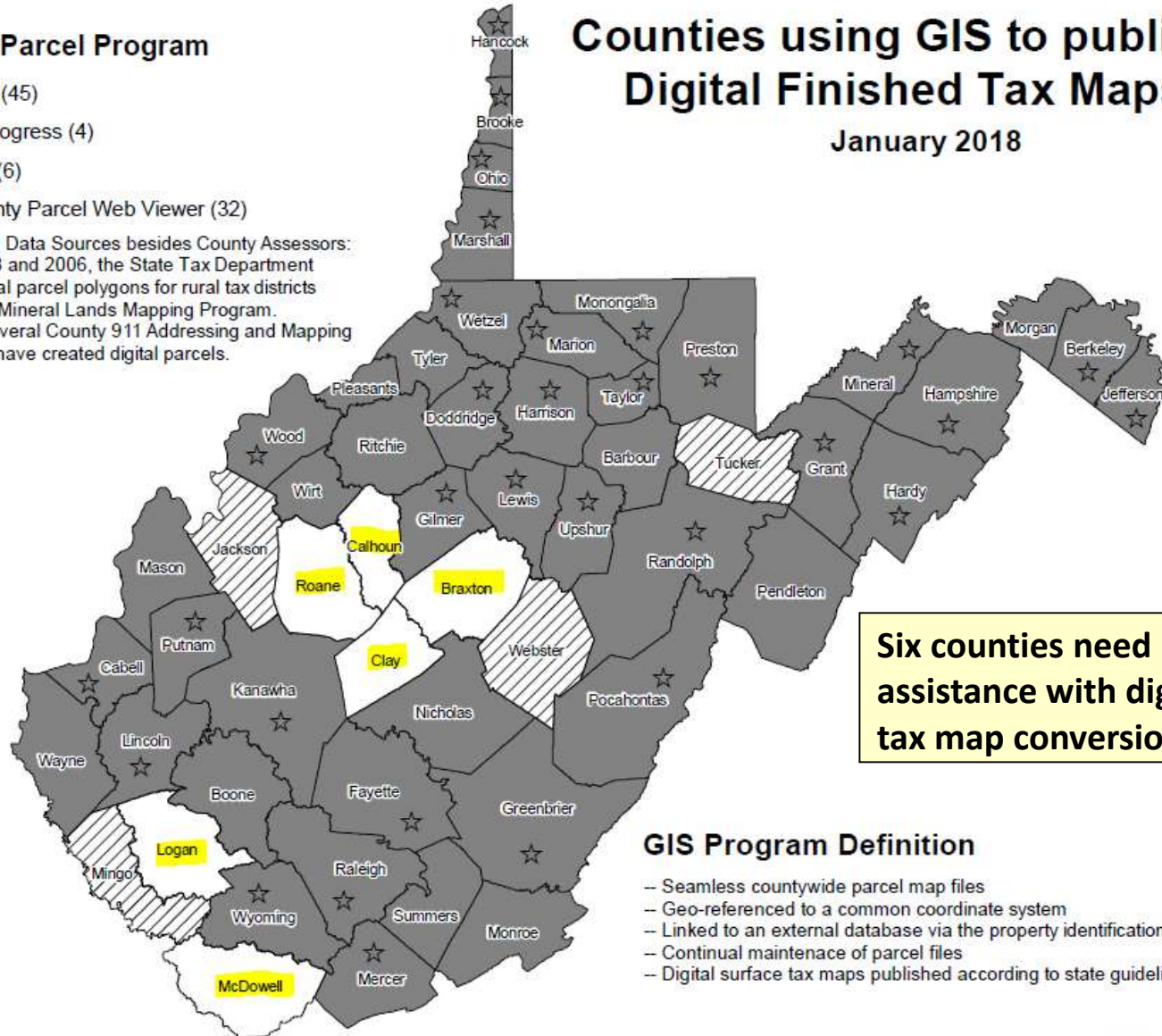
No\* (6)

☆ County Parcel Web Viewer (32)

\* Other Parcel Data Sources besides County Assessors:  
Between 1998 and 2006, the State Tax Department collected digital parcel polygons for rural tax districts as part of the Mineral Lands Mapping Program. In addition, several County 911 Addressing and Mapping Coordinators have created digital parcels.

## Counties using GIS to publish Digital Finished Tax Maps

January 2018



# 18 Colonial Drive, Ripley, WV

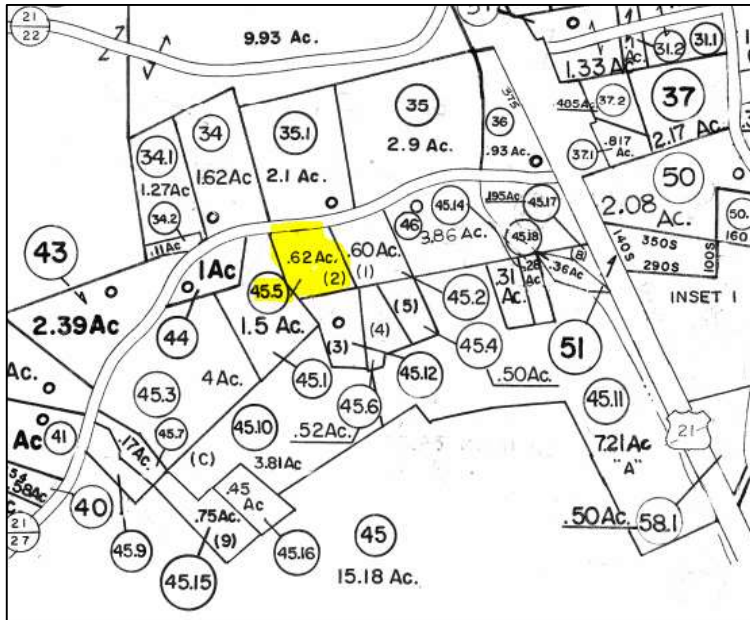
## PAPER TAX MAP

(static map)

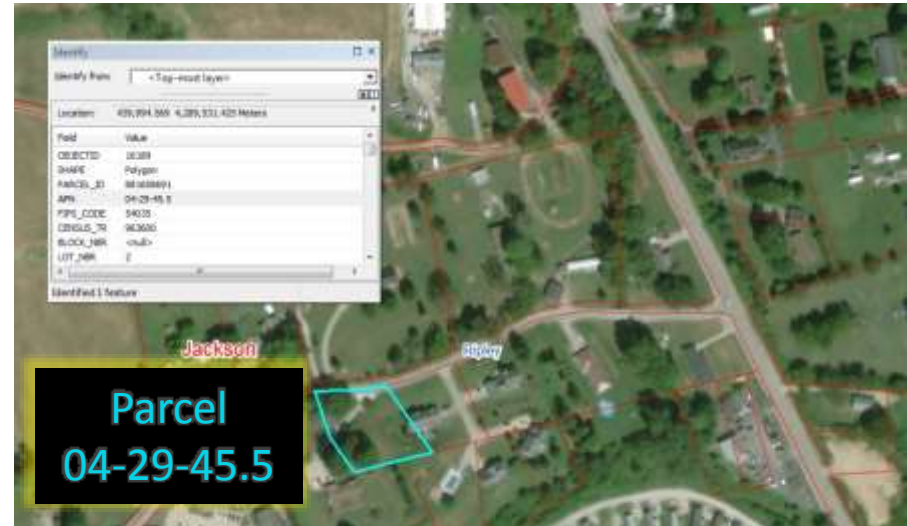


## DIGITAL TAX MAP

(interactive, seamless, aerial photo reference, map link to attributes (property info) and graphics (building sketch))

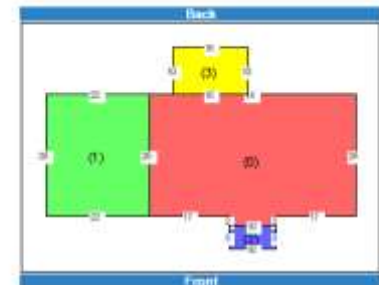


Parcel 04-29-45.5



|                     |             |
|---------------------|-------------|
| Year Built          | 2000        |
| Total Rooms         | 6           |
| Bed Rooms           | 3           |
| Full Baths          | 2           |
| Half Baths          | 1           |
| Additional Fixtures | 2           |
| Total Fixtures      | 10          |
| Heating             | Central A/C |
| Heating Fuel Type   | Gas         |
| Living Area (SF)    | 2328        |

Sketch of District 04, Map 29, Parcel 45.5 for the Tax Year 2017



Addition List

| Line # | Lower | First                    | Second | Third | Area |
|--------|-------|--------------------------|--------|-------|------|
| 1      |       |                          |        |       | 1184 |
| 1      |       | Frame Garage             |        |       | 872  |
| 2      |       | Masonry Stoop or Terrace |        |       | 50   |
| 3      |       | Wood Deck                |        |       | 160  |

Search criteria: "Parcel ID (Account)"=04 29004500000000 "Tax Year"=2017

# Why Conversion/Re-Mapping Necessary?

**West Virginia Property Viewer**

Parcel Address Flood Zone

Search Layers Basemap Tools Clear Help

**Jackson County example**

*Parcel 29-45.5 not aligned properly with imagery. Should be located with 18 Colonial Dr. structure.*

**29-45.5**

**18 Colonial Drive**

Toggle Highlight: ON Copy Link Parcel ID: 18-04-0029-0045-0005 Details Zoom Close

|                    |   |                 |   |
|--------------------|---|-----------------|---|
| Owner(s):          | RT 21/27 ANGEL RIDGE RIPLEY 25271         | Community:      | Jackson County  |
| Address:           | Residential                               | E-911 Address:  |   |
| Class Type:        | LOT 2 (.62 AC); COLONIAL DRIVE-GRASS LICK | External Links: |   |
| Legal Description: |   | Flood Info:     | Parcel appears to be in a LOW RISK flood hazard zone. Learn more at WV Flood Tool |

[Click here for parcel assessment report](#) [Having questions about a property?](#)

Scale - 1: 1,128  
38.753196, -81.692067  
(38.752325, -81.690732)



# Why Conversion/Re-Mapping Necessary?

**West Virginia Property Viewer**

Parcel Address Flood Zone

Search Layers Basemap Tools Clear Help

**Jackson County example**  
*Parcel 29-45.5 should be aligned with structure located at 18 Colonial Drive, Ripley, WV*

29-45.5 → 18 Colonial Drive

Parcel ID: 18-04-0029-0045-0002

|                      |   |                 |   |         |
|----------------------|---|-----------------|---|---------|
| Toggle Highlight: ON | Copy Link                               | Details +       | Zoom  | Close x |
| Owner(s):            | 1                                       | Community:      | Jackson County  |         |
| Address:             | 15 COLONIAL DR RIPLEY 25271 9492        | E-911 Address:  | 18 COLONIAL DR, Ripley, WV, 25271   |         |
| Class Type:          | Residential                             | External Links: |   |         |
| Legal Description:   | LOT 1 (.60 AC); COLONIAL ADD-GRASS LICK | Flood Info:     | Parcel appears to be in a LOW RISK flood hazard zone. Learn more at WV Flood Tool |         |

[Click here for parcel assessment report](#)      [Having questions about a property?](#)

# What is in a Parcel Identifier

GIS Parcel ID: 31-05-0007-0031-0015

|               |                           |
|---------------|---------------------------|
| County        | 31 (Monongalia County)    |
| District      | 05 (Clinton Tax District) |
| Map           | 7                         |
| Parcel Prefix | 31                        |
| Parcel Suffix | 15                        |



The **GIS Parcel ID** is a unique number that is the basis for identifying all parcels in West Virginia. The GIS Parcel ID consists of five elements: County code, District code, Map number, Parcel Prefix, and Parcel Suffix.

# WV Property Viewer



## Statewide Parcel Application and Web Services

- **WV Property Viewer application**  
([www.mapwv.gov/property](http://www.mapwv.gov/property))
- **Online Tax PDF Maps**
- **Web Parcel Reports**
- **Beneficial for Disaster Assessments**

# WV Flood Tool Outreach

Charleston WV Billboard Marketing (April 2017)



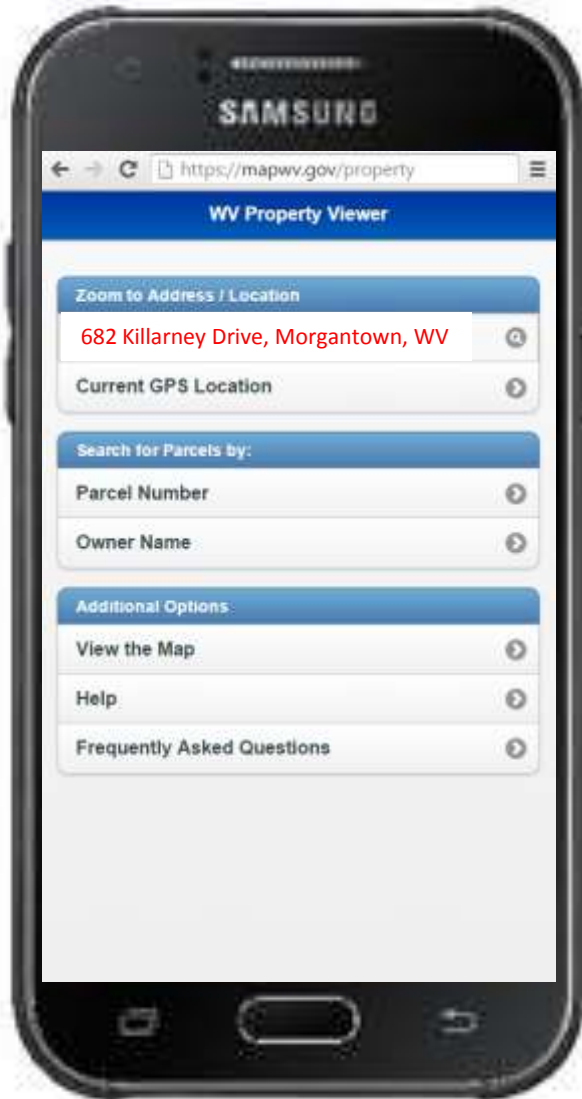
Which instrument is better for the public discovering the WV Flood Tool – a Billboard Campaign or a Real Estate Property Viewer?

WV Property Viewer  
[www.mapwv.gov/property](http://www.mapwv.gov/property)



# WV Property Viewer (Mobile)

[www.mapwv.gov/property](http://www.mapwv.gov/property)



*Mobile Home Page*



*Zoom to E-911 Address*



*Toggle Layers of Interest*

# WV Property Viewer (Mobile)

[www.mapwv.gov/property](http://www.mapwv.gov/property)



*Touch Parcel for More Info*



*View Parcel Attributes*



*Link to Detailed Report*

# WV Property Viewer - [www.mapwv.gov/property](http://www.mapwv.gov/property)

- Developed in collaboration with WV Property Tax Division
- Modelled after Tennessee Property Viewer
- FEMA/State Hazard Mitigation is a business driver for identifying flood hazards. Serves as a gateway to WV Flood Tool.
- Key Features:
  - Statewide parcel attribute searches (e.g., owner name, acreage)
    - [www.mapwv.gov/assessment](http://www.mapwv.gov/assessment) (still being built out)
  - Integrated with E-911 Statewide Addressing & Mapping System
  - General info on all properties (R, F, C, A, I, X, U)
  - Counties/State Agencies can link to Statewide Parcel Web Services
    - PDF Full-Version Tax Maps
      - <https://www.mapwv.gov/taxmaps/?m=31-15-0054> (County Code - District No. - Map ID)
    - Web Parcel Reports – displays multiple records (e.g., structures)
      - <http://mapwv.gov/Assessment/?PID=28110039000100000000>
- Free property viewer for county offices with limited resources
- Formal release this summer with 2018 Tax Year data

# WV Flood Tool 2018

## **E-911 Addresses**



# Statewide E-911 Address & Mapping File

- Property Identification for disaster assessments
- Address Match Locators – Geocoding
- Validate Parcel Addresses
- Emergency Service Zone Boundaries
- Other uses:
  - Fire insurance rates
  - Flood insurance discounts
  - Broadband, emergency, hazard reduction, and transportation planning

# Statewide E-911 Addresses

## Address Issues

### Missing Address Site Numbers



*Fairmont, WV*

### Wrong Addresses

(98 Graham St. should be 315 Graham St.)



*Elkins, WV*

# WV Address Issues

| Address Issues  | Community Name  |
|---|---|
| <p><b>Missing Address Information</b></p> <p>Counties 9</p> <p>Municipalities 33</p>    | <p><b>Boone County</b>*(4) – Danville, Madison, Sylvester, Whitesville, <b>Cabel County</b>*, <b>Calhoun County</b>*, <b>Gilmer County</b> (2) – Glenville, Sand Fork, <b>Grant County</b> (1) – Petersburg, <b>Lewis County</b>*, <b>Marion County</b>*(6) – Barrackville, Fairmont, Farmington, Rivesville, White Hall, Worthington, <b>McDowell County</b> (1) – Bradshaw, <b>Mingo County</b> (1) – Williamson, <b>Morgan County</b>*(2) – Bath, Great Cacapon, <b>Pleasants County</b> (1) – Belmont, <b>Pocahontas County</b>*(3) – Durbin, Hilsboro, Marlinton, <b>Putnam County</b> (6) – Bancroft, Buffalo, Eleanor, Hurricane, Poca, Winfield, <b>Summers County</b> (1) – Bluestone, <b>Tyler County</b> (1) – Friendly, <b>Wayne County</b>*, <b>Webster County</b>*(3) – Addison, Camden-On-Gauley, Cowen, <b>Wyoming County</b> (1) - Mullens</p> |
| <p><b>Incorrect Address Information</b></p> <p>Counties 2</p> <p>Municipalities 3</p>   | <p><b>Putnam County</b>*</p> <p><b>Randolph County</b> (1) – Elkins</p> <p><b>Roane County</b>* (2) – Reedy, Spencer</p>  |
| <p><b>Misaligned Addresses or Parcels</b></p> <p>Counties 1</p> <p>Municipalities 3</p> | <p><b>Hardy County</b>* (1) – Moorefield</p> <p><b>Jefferson County</b> (1) – Shepherdstown</p> <p><b>Randolph County</b> (1) – Womelsdorf</p>  |

\* Address issues with the entire county

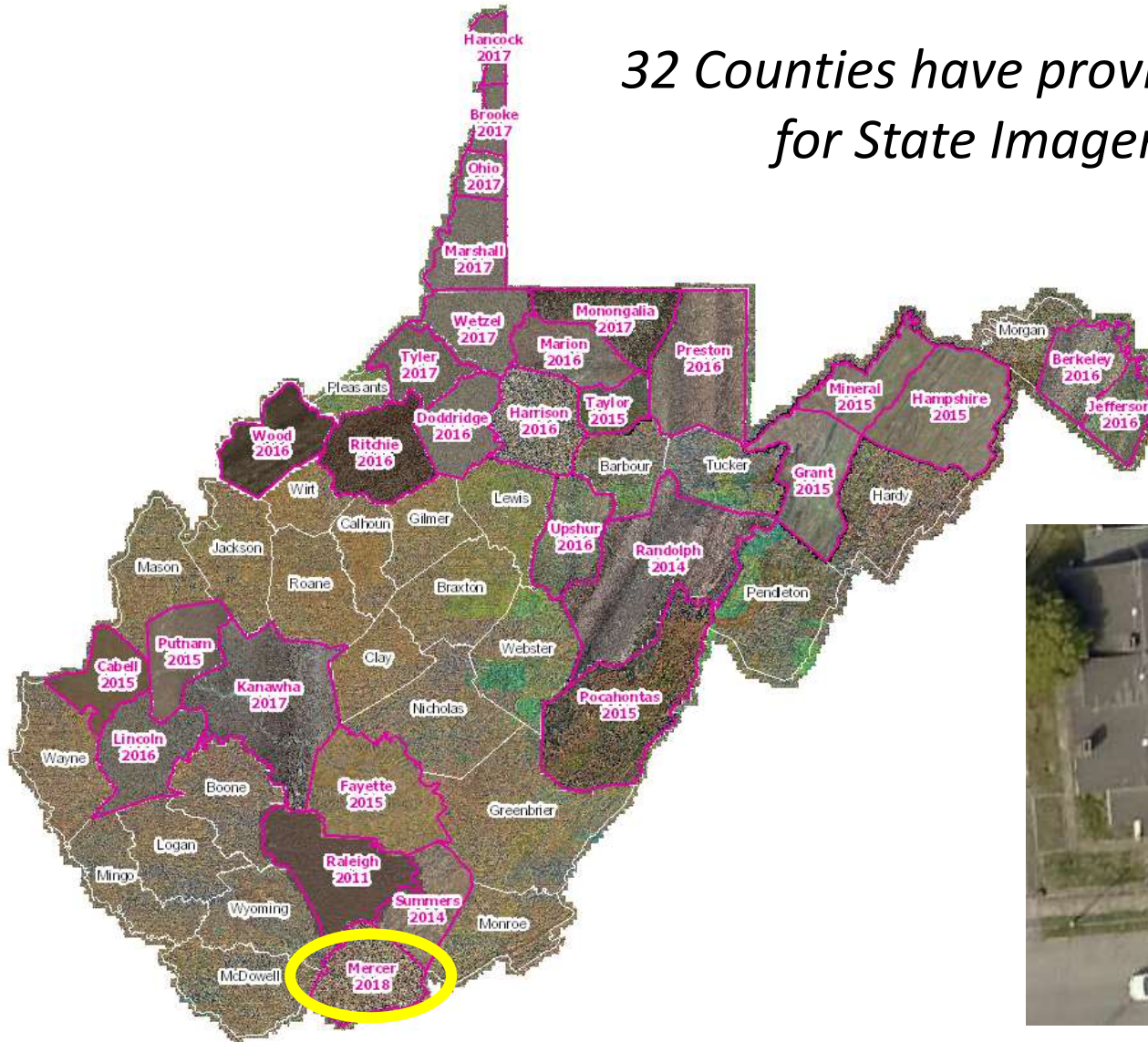
# WV Flood Tool 2018

## Leaf-Off Imagery

# Leaf-Off Aerial Imagery Web Service

[https://services.wvgis.wvu.edu/arcgis/rest/services/ImageryBaseMaps/wv\\_aerial\\_photos\\_mixed\\_resolutions\\_wm/MapServer?f=jsapi](https://services.wvgis.wvu.edu/arcgis/rest/services/ImageryBaseMaps/wv_aerial_photos_mixed_resolutions_wm/MapServer?f=jsapi)

*32 Counties have provided leaf-off imagery for State Imagery Web Service*



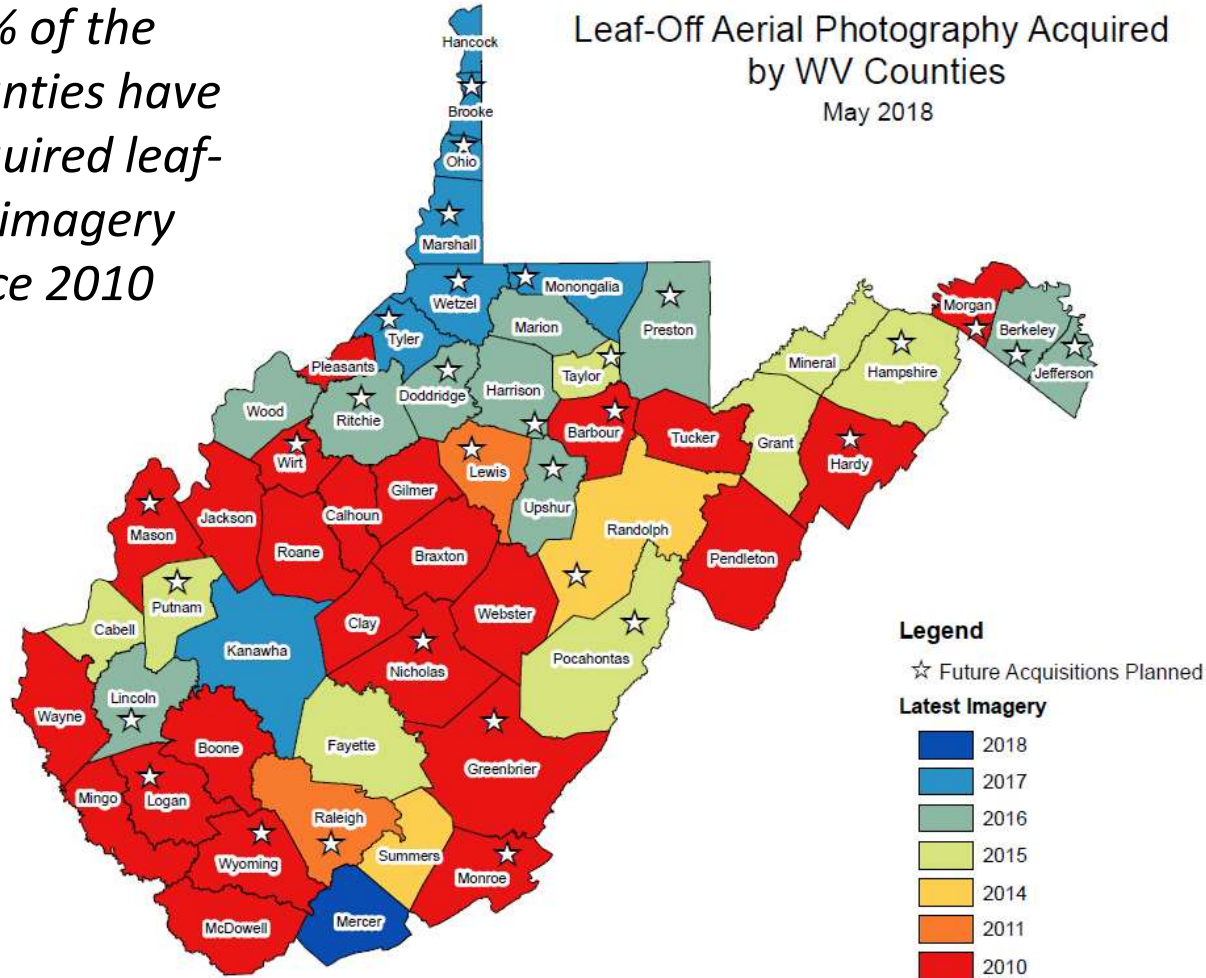
2018 Mercer County  
Aerial Imagery



# Aerial Imagery

*58% of the counties have acquired leaf-off imagery since 2010*

Leaf-Off Aerial Photography Acquired by WV Counties  
May 2018



Source: County GIS

Map Created by WVGISTC: 5/22/2018

What is the cost?

\$70 per square mile for aerial imagery

*Ideally, leaf-off imagery should not be older than 5 years. Imagery is important for identifying at-risk structures and accurate disaster mapping.*

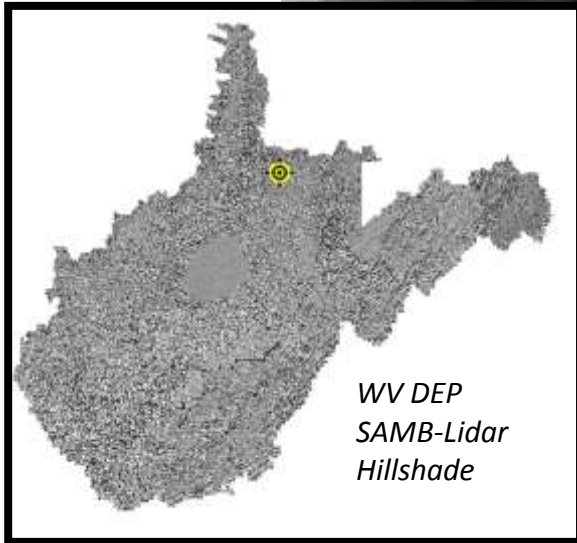
# WV Flood Tool 2018

**Elevation**

# Statewide Elevation Layers

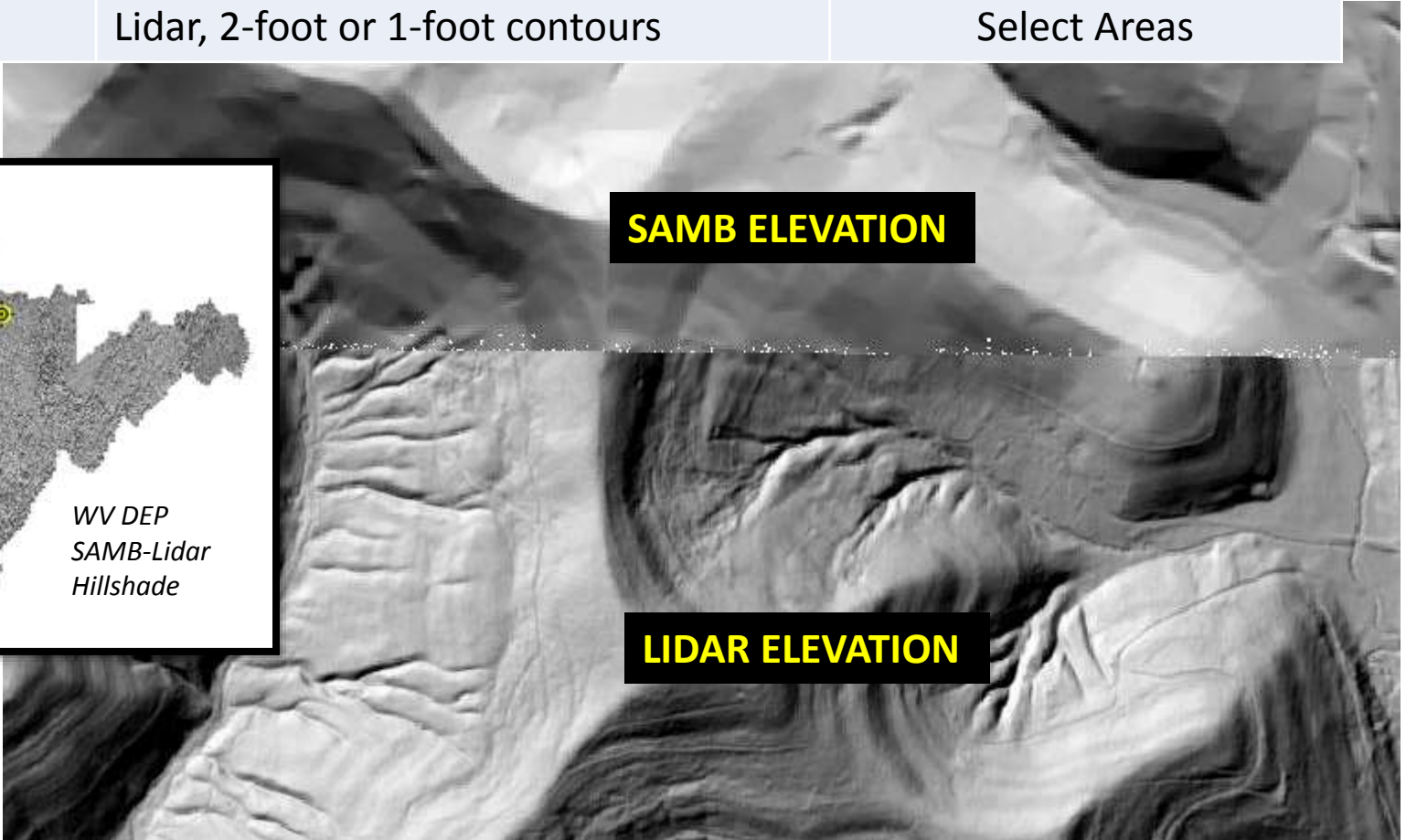
*Elevation Grids, Hillshade Grids, Contours, **used** for Flood Depths, Imagery Orthorectification*

| Layer | Source                               | Coverage     |
|-------|--------------------------------------|--------------|
| SAMB  | 2003 SAMB, 3-meter, 10-foot contours | Statewide    |
| Lidar | Lidar, 2-foot or 1-foot contours     | Select Areas |



**SAMB ELEVATION**

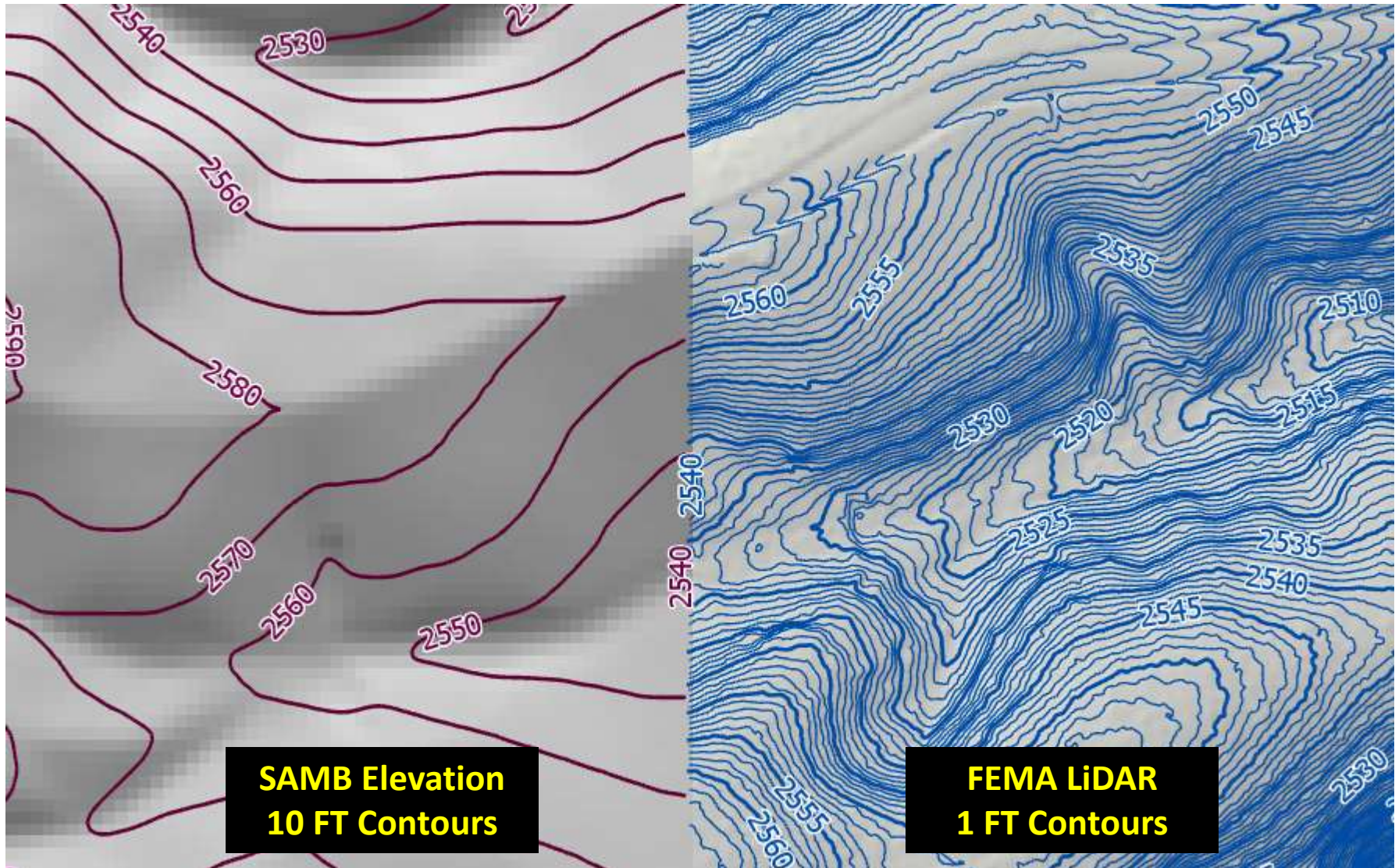
**LIDAR ELEVATION**





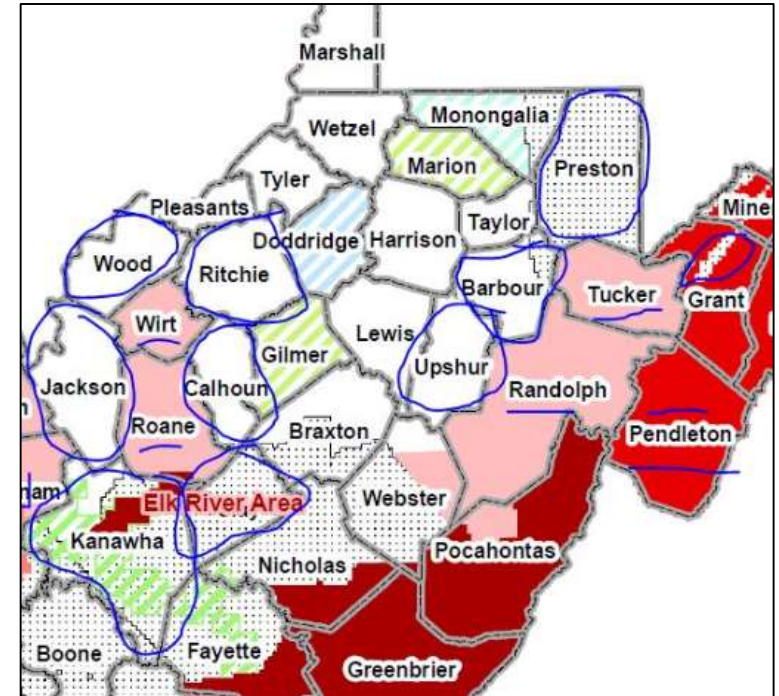
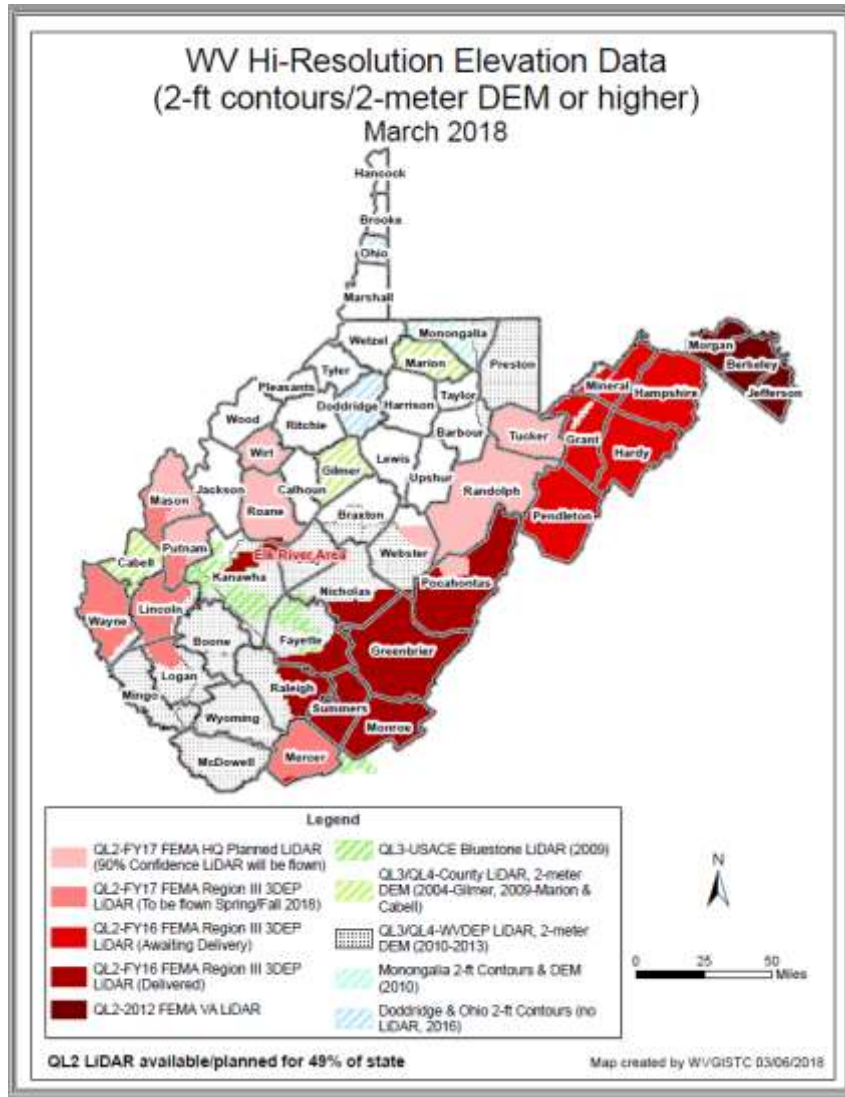
# High Resolution Elevation

New FEMA LiDAR Elevation Data is **10x** better than 2003 Statewide Elevation Data Set



# FEMA Hi-Resolution Elevation Data (QL2 LiDAR - 1 Ft Contours)

Elevation data can be accessed through State Data Clearinghouse - [www.mapwv.gov/lidar](http://www.mapwv.gov/lidar)



**Possible Fall 2018 LiDAR Acquisitions  
(Blue Circles)**

# WV Flood Tool 2018

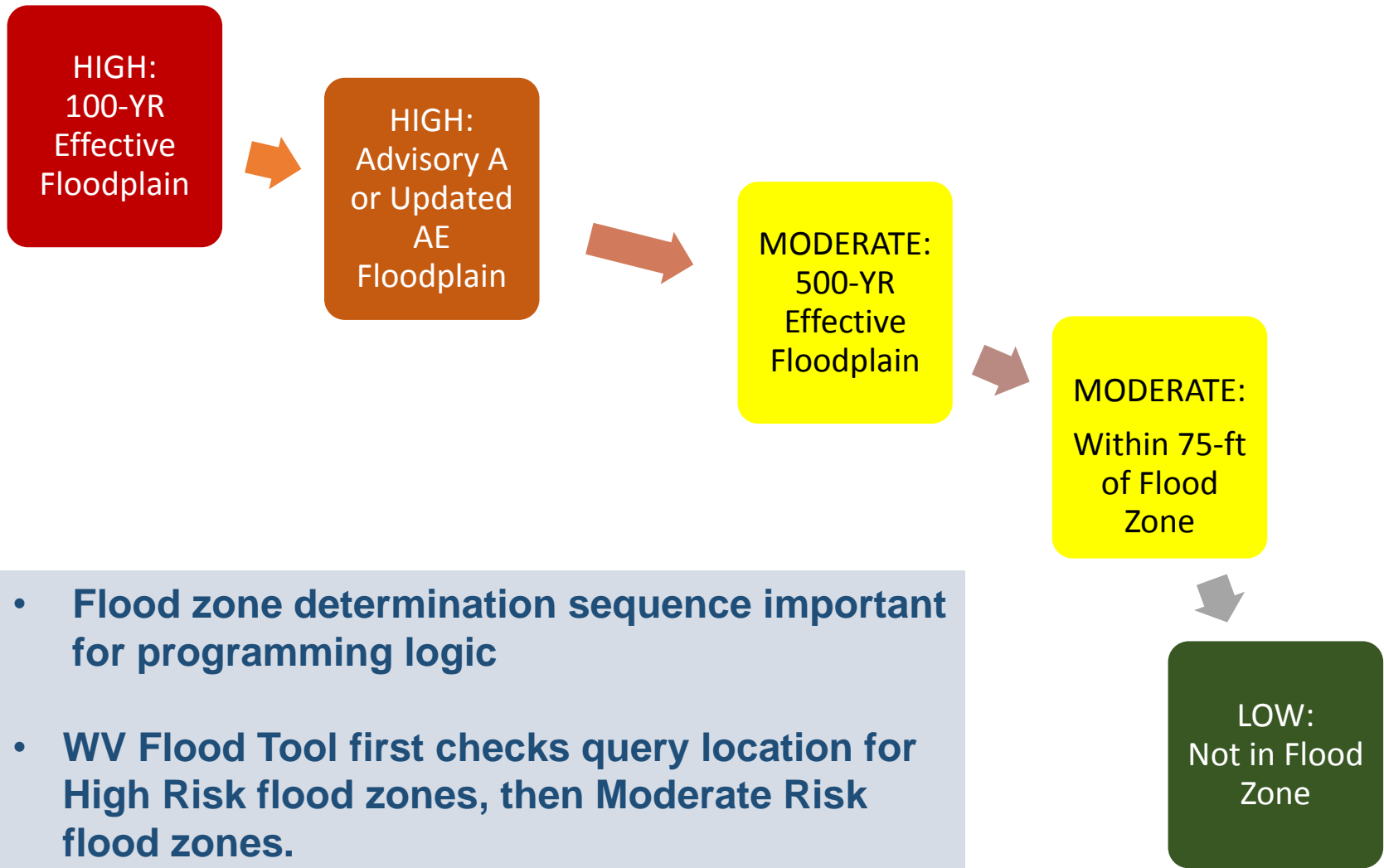
## Floodplain Management

# Flood Zone: < zone designation >

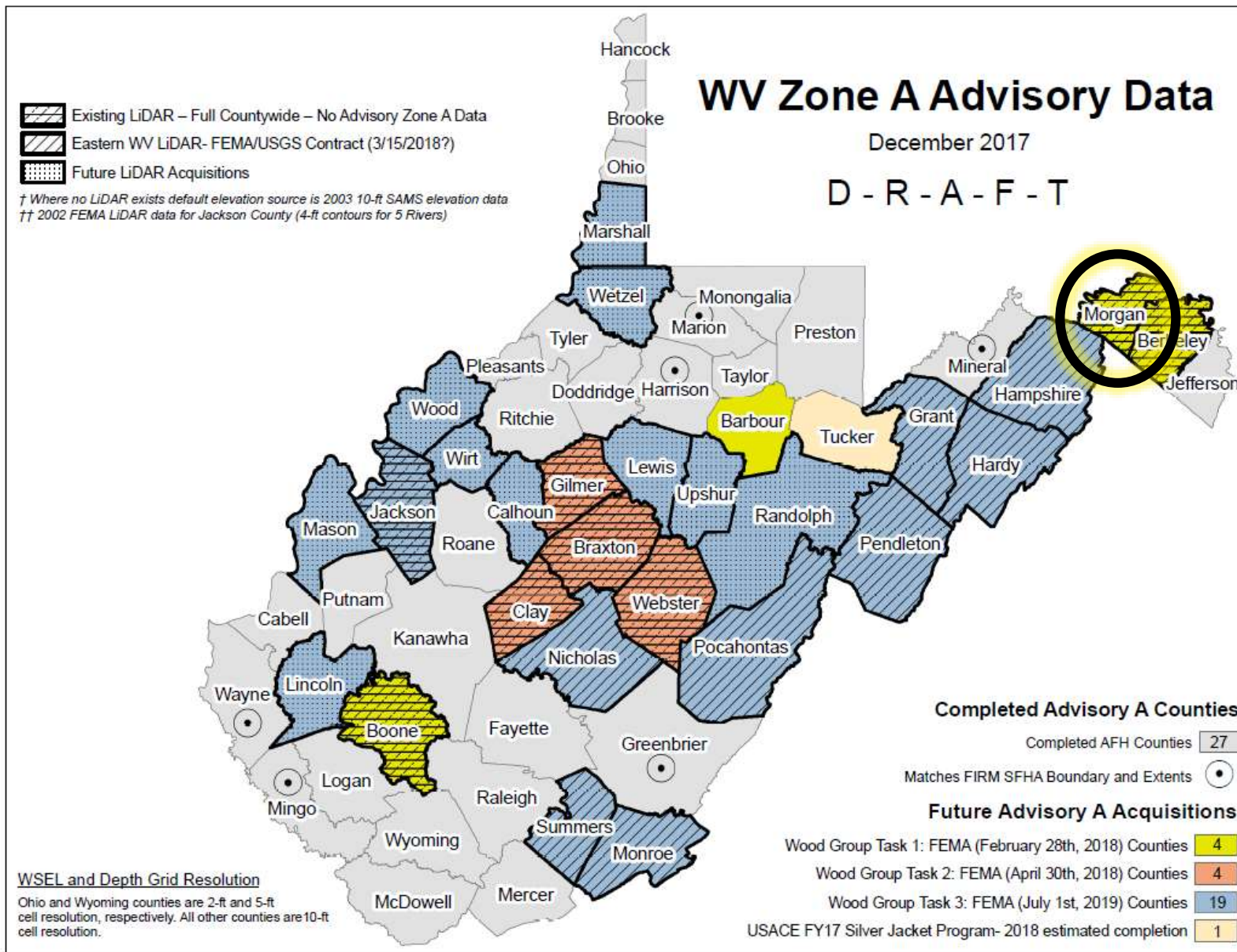
| Status # | Flood Risk Zone Designation    | Message   | Flood Degree Risk | Color Warning Status |
|----------|--------------------------------|---|-------------------|----------------------|
| 1        | AE, AH (5), AO (2)             | Location is WITHIN the FEMA 100-year floodplain.  | High              | Red                  |
| 2        | AE (Floodway)                  | Location is WITHIN the FEMA 100-year floodplain and floodway.   | High              | Red                  |
| 3        | A                              | Location is WITHIN the FEMA 100-year floodplain.  | High              | Red                  |
| 4        | A (Advisory A)                 | Location is WITHIN the FEMA 100-year floodplain. Advisory Flood Heights available.                          | High              | Red                  |
| 5        | Updated AE Floodplain Boundary | Location is WITHIN an updated detailed floodplain boundary but NOT a FEMA 100-year effective floodplain.    | High              | Orange               |
| 6        | Advisory A                     | Location is WITHIN an advisory floodplain but NOT a FEMA 100-year effective floodplain.                     | High              | Orange               |
| 7        | Shaded X                       | Location is WITHIN a moderate flood risk hazard such as a FEMA 500-year floodplain.                         | Moderate          | Yellow               |
| 8        | <i>Near Flood Zone</i>         | Location is NOT WITHIN identified flood hazard area, but within 75 feet of an identified flood hazard area. | Moderate          | Yellow               |
| 9        | <i>Out of Flood Zone</i>       | Location is NOT WITHIN any identified flood hazard area. Unmapped flood hazard areas may be present.        | Low               | Green                |

Three Degrees of Risk: High, Moderate, Low. Four Warning Status Colors: In 100-YR Effective Floodplains (red), Advisory A/Updated AE Floodplains (orange), moderate risk or close to high risk zones (yellow), low risk (green). Three Stacked Floodplain Boundary GIS Files: (1) 100-YR NFHL effective, (2) 100-YR Advisory A-Updated AE, (3) 500-YR NFHL Effective

# Flood Zone Determination Sequence



# AFH Proposed Schedule



# Flood Zone – Structure in Advisory A

**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: [Navigation icons]

**Parcel ID: 33-01-0010-0033-0000**

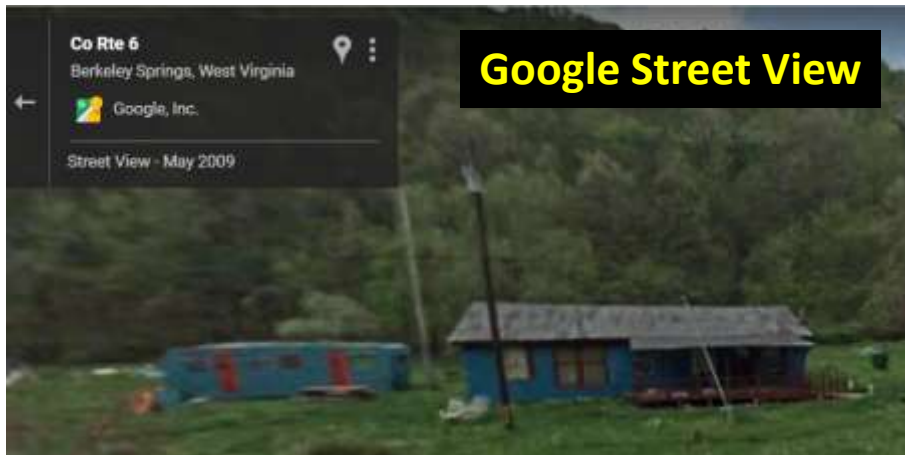
<https://www.mapwv.gov/flood/map/?wkid=102100&x=-8698746&y=4815674&l=12&v=2>

**Information Panel:**

- Flood Hazard Area: Location is **WITHIN** an advisory floodplain but **NOT** a FEMA 100-year effective floodplain. [More info](#)
- Flood Zone: **Advisory A**
- Stream: Swim Run
- Watershed (HUC8): Conococheague-Opeugon (2070004)
- FEMA Issued Flood Map: 54065C0070E [Download] [Share]
- Map Effective Date: 9/25/2009
- Contacts: Morgan
- Flood Height: About 506 ft (Source: AFH) [More Info](#)
- Water Depth: About 1.5 ft (Source: HEC-RAS)
- HEC-RAS Model: Swim Run [All Models](#)
- Community: Morgan County  
CID: 540144 CRS Class: 9
- Location (long, lat): (-78.142112, 39.653195)  
Location (UTM 17N): (745197, 4393170)
- External Viewers: [Icons for social media]
- Elevation: About 503 ft (Source: FEMA 2012)
- Address: multiple addresses
- Parcel ID:  33-01-0010-0033-0000 [Disclaimer](#)
- Flood Risk Information [Related Resources](#)
  - Flood Risk Assessment: N/A
  - 3D Flood Visualization

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 Zone – Structure in Advisory A



Parcel ID: 33-01-0010-0033-0000

## Flood Visualization

Parcel ID: 33-01-0010-0033-0000      Water Depth: ~ 1.5 ft (HEC-RAS)

**12 Feet** General Damage - Woodwork, doors, and most appliances damaged. When 2 feet of water is in the living space and the walls are wet it is classified as a Major Emergency by the WV Division of Homeland Security and Emergency Management (WV DHSEM).

**13 Feet** Appliances - Most appliances (refrigerator, stove, dishwasher, washer, dryer) are a total loss between 1.0 and 2.0 feet of water. Vehicles - 2.0 feet of water, especially quickly flowing flood waters, can float a larger vehicle such as a pickup truck. As little as 1.5 feet can float a small vehicle.

| Cost Value              |          | Appraisal Value    |          |
|-------------------------|----------|--------------------|----------|
| Dwelling Value          | \$16,500 | Land Appraisal     | \$26,600 |
| Other Bldg./Yard Values | \$2,630  | Building Appraisal | \$19,100 |
| Commercial Value        | ---      | Total Appraisal    | \$45,700 |

## Web Parcel Report

| Building Information   |                            |  |  |  |  |  |  |  |  |
|------------------------|----------------------------|--|--|--|--|--|--|--|--|
| Property Class         | R - Residential            |  |  |  |  |  |  |  |  |
| Land Use               | 101 - Residential 1 Family |  |  |  |  |  |  |  |  |
| Sum of Structure Areas | 1,056                      |  |  |  |  |  |  |  |  |
| # of Buildings (Cards) | 1                          |  |  |  |  |  |  |  |  |

| Card | Year Built | Stories | Total Rooms | Grade | Architectural Style | Exterior Wall | Basement Type | Square Footage (SFLA) |
|------|------------|---------|-------------|-------|---------------------|---------------|---------------|-----------------------|
| 1    | 1982       | 1       | 9           | E     | Other               | Frame         | None          | 1,056                 |
|      |            |         |             |       |                     |               |               | 1,056                 |

### Other Building and Yard Improvements

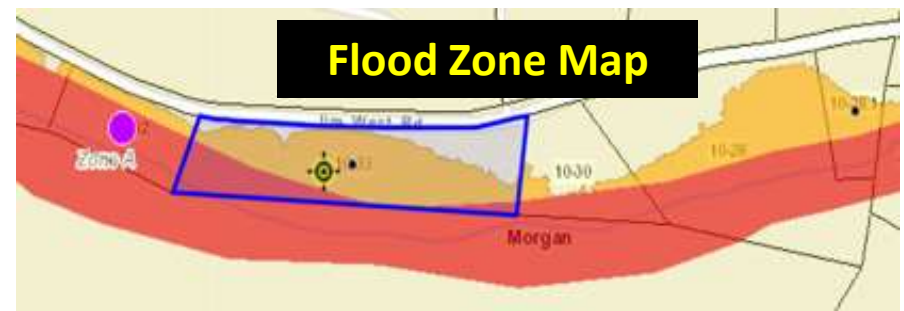
| Bldg/ Card # | Line | Type               | Year Built | Grade | Units | Size  | Area | Replace Cost | Adjusted Replace Cost |
|--------------|------|--------------------|------------|-------|-------|-------|------|--------------|-----------------------|
| 1            | 3    | Frame Utility Shed | 2006       | D     | 1     | 16x20 | 320  | \$2,070      | \$2,630               |
|              |      |                    |            |       |       |       | 320  | \$2,070      | \$2,630               |

### Flood Zone Information

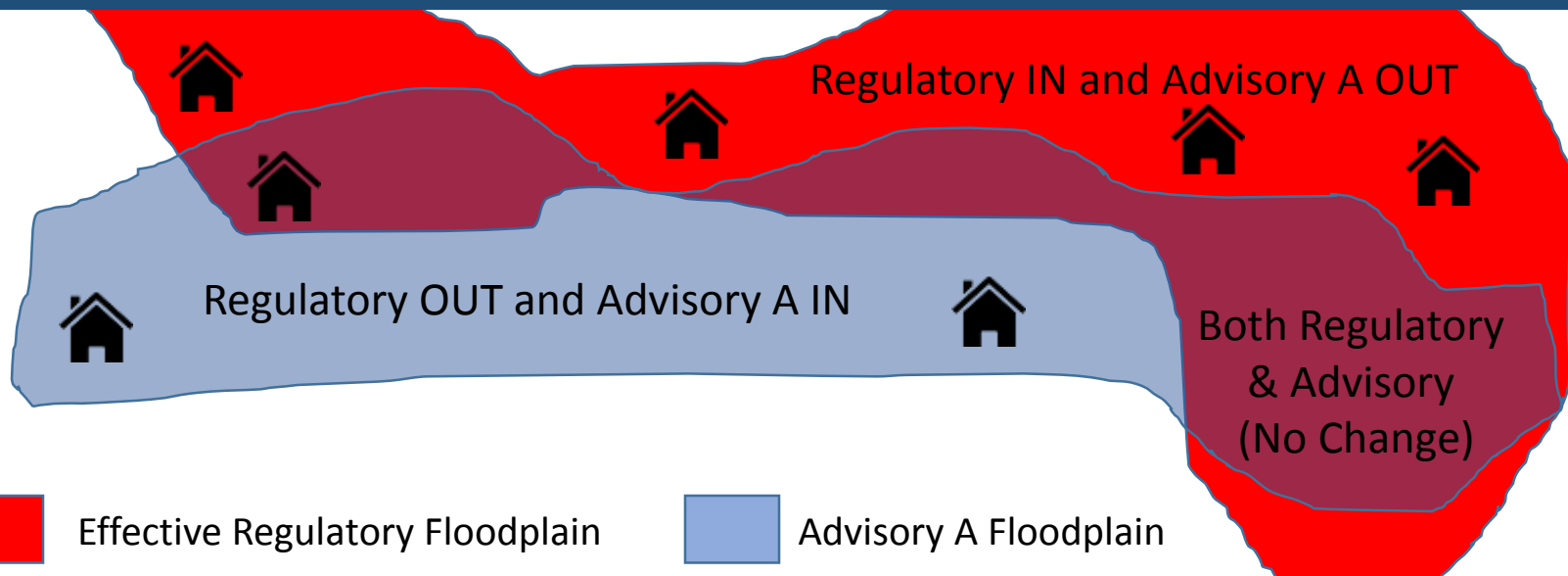
Learn more at [WV Flood Tool](#)

| Acres (c.) | Risk | Description   |
|------------|------|---|
| 2.57       | High | This parcel appears to be in a HIGH RISK flood hazard zone. |





# Advisory A Zones – Outreach Information



| Union           | Meaning                           | Building Changes | Area Changes      |
|-----------------|-----------------------------------|------------------|-------------------|
| No Change       | IN both Regulatory and Advisory A | 1                | 11 m <sup>2</sup> |
| Advisory A Only | Regulatory OUT and Advisory A IN  | 2                | 13 m <sup>2</sup> |
| Regulatory Only | Regulatory IN and Advisory A OUT  | 4                | 21 m <sup>2</sup> |

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

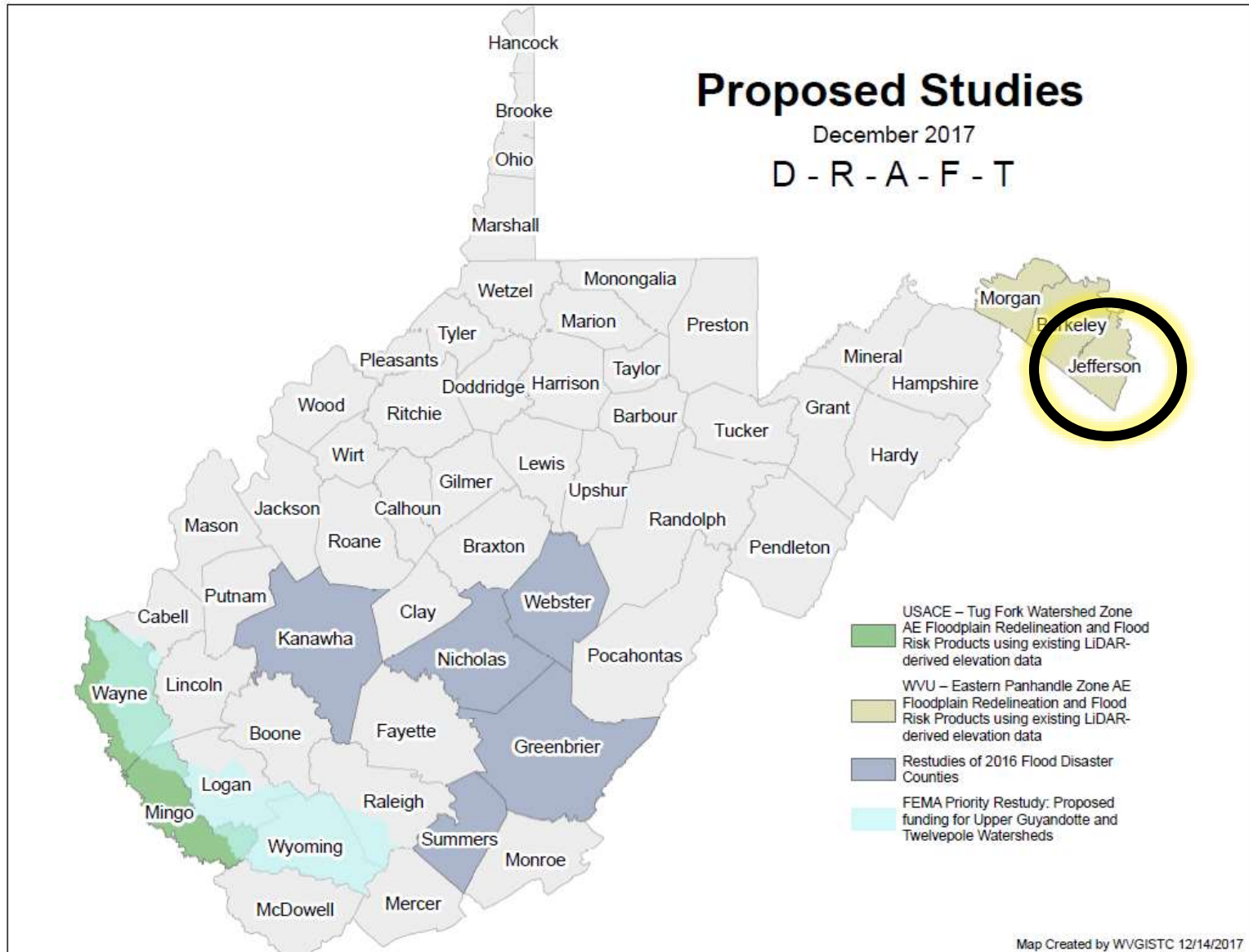
*The geographic union of Regulatory and Advisory Floodplains generates a change polygon for flood risk analysis by area. Subsequently the union polygon can be intersected with site-specific structures to analyze the impact of the Advisory Floodplain changes to the Regulatory Floodplain.*

# Proposed Flood Studies

## Proposed Studies

December 2017

D - R - A - F - T



# Flood Zone – Updated AE

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

**Parcel ID: 19-07-0018-0026-0000**

**Flood Hazard Area:** Location is **WITHIN** an updated detailed floodplain boundary but **NOT** a FEMA 100-year effective floodplain. [More Info](#)

**Flood Zone:** Updated AE Floodplain Boundary

**Stream:** N/A

**Watershed (HUC8):** Conococheague-Opequon (2070004)

**FEMA Issued Flood Map:** 54037C0105E [Download](#) [Share](#)

**Map Effective Date:** 12/18/2009

**Contacts:** [Jefferson](#)

**Flood Height:** N/A [More Info](#)

**Water Depth:** About 6.8 ft (Source: HEC-RAS)

**HEC-RAS Model:** N/A

**Flood Profile:** N/A

**Community:** Jefferson County

**CID:** 540065 **CRS Class:** 5

**Location (long, lat):** (-77.990031, 39.325026)

**Location (UTM 17N):** (759466, 4357166)

**External Viewers:** [Facebook](#) [Twitter](#) [LinkedIn](#)

**Elevation:** About 425 ft (Source: FEMA 2012)

**Address:** 288 OUR LN, Kearneysville, WV, 25430

**Parcel ID:** 19-07-0018-0026-0000 [Disclaimer](#)

**Flood Risk Information** [Related Resources](#)

**Flood Risk Assessment:** N/A

**3D Flood Visualization**

**PHYSICAL ADDRESS**

**BUILDING INFORMATION**

|                          |                            |
|--------------------------|----------------------------|
| Property Class Type      | R - Residential            |
| Land Use                 | 101 - Residential 1 Family |
| Year Built               | 2005                       |
| Architectural Style      | Colonial                   |
| Story Height             | 2                          |
| Exterior Wall            | Aluminum                   |
| Construction Area(sq ft) | 1882                       |
| Total Rooms              | 7                          |
| Building Grade           | B                          |
| Basement Type            | Full                       |
| Building (card) Number   |                            |
| # of main BLDGs (cards)  | 1                          |

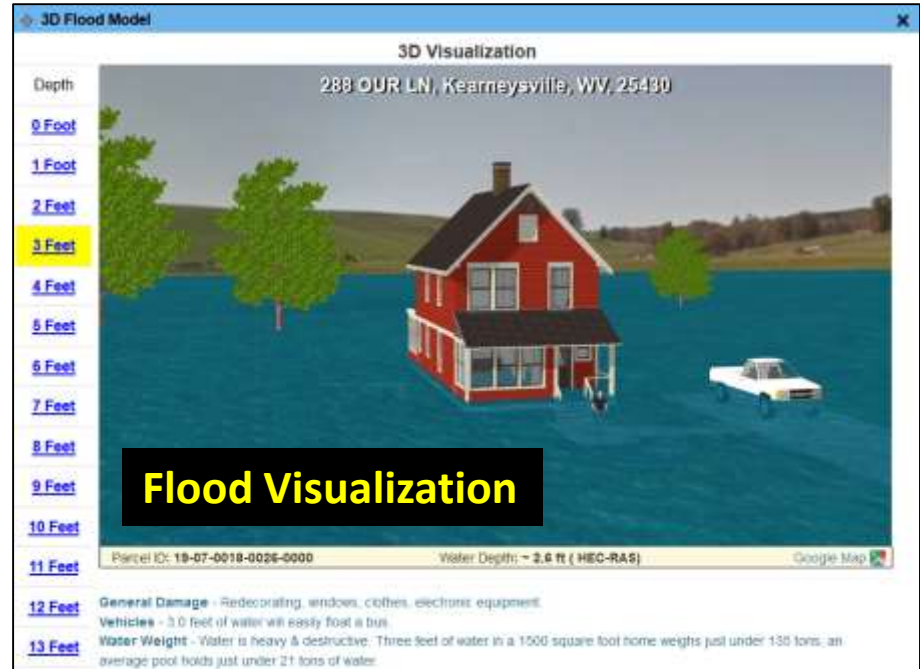
<http://www.mapwv.gov/flood/map/?v=1&pid=19-07-0018-0026-0000>

Structure is **WITHIN** an **Updated AE Floodplain Boundary** but **NOT** a FEMA 100-year effective floodplain. Parcel ID 19-07-0018-0026-0000, Address: 288 OUR LN, Kearneysville, WV, 25430. Opequon Creek in Jefferson County, WV.

# Flood Zone – Updated AE



Parcel ID: 19-07-0018-0026-0000



| Cost Value              |           | Appraisal Value    |           |
|-------------------------|-----------|--------------------|-----------|
| Dwelling Value          | \$148,200 | Land Appraisal     | \$42,900  |
| Other Bldg./Yard Values | \$0       | Building Appraisal | \$148,200 |
| Commercial Value        | ---       | Total Appraisal    | \$191,100 |

| Building Information   |                            |  |  |  |  |  |  |  |
|------------------------|----------------------------|--|--|--|--|--|--|--|
| Property Class         | R - Residential            |  |  |  |  |  |  |  |
| Land Use               | 101 - Residential 1 Family |  |  |  |  |  |  |  |
| Sum of Structure Areas | 1,882                      |  |  |  |  |  |  |  |
| # of Buildings (Cards) | 1                          |  |  |  |  |  |  |  |

| Card | Year Built | Stories | Total Rooms | Grade | Architectural Style | Exterior Wall | Basement Type | Square Footage (SFLA) |
|------|------------|---------|-------------|-------|---------------------|---------------|---------------|-----------------------|
| 1    | 2005       | 2       | 7           | B     | Colonial            | Aluminum      | Full          | 1,882                 |
|      |            |         |             |       |                     |               |               | 1,882                 |

| Flood Zone Information |             | Learn more at: <a href="#">WV Flood Tool</a>                |
|------------------------|-------------|---|
| Acres (c.)             | Risk        |   |
| 1.04                   | <b>High</b> | This parcel appears to be in a HIGH RISK flood hazard zone. |

| Sales History |           |                    |             |               |      |      |
|---------------|-----------|--------------------|-------------|---------------|------|------|
| Sale Date     | Price     | Sale Type          | Source Code | Validity Code | Book | Page |
| 6/21/2006     | \$329,000 | Land and Buildings | 4           | 0             |      |      |

**Web Parcel Report**

**Flood Zone Map**

# Updated Floodplains - Building Counts

| 100-YR Flood (High Flood Risk) |                       |                                    |                        |                        |                         |                    |
|--------------------------------|-----------------------|------------------------------------|------------------------|------------------------|-------------------------|--------------------|
| FLOOD ZONE                     | (A)<br>ONLY Effective | (B)<br>BOTH Effective & Advisory A | (A+B)<br>SUM Effective | (C)<br>ONLY Advisory A | (B+C)<br>SUM Advisory A | (A+B)-(B+C)<br>Net |
| <b>Approximate A Zone</b>      | 20                    | 352                                | 372                    | 10                     | 362                     | +10                |
| FLOOD ZONE                     | (A)<br>ONLY Effective | (B)<br>BOTH Effective & Update AE  | (A+B)<br>SUM Effective | (C)<br>ONLY Updated AE | (B+C)<br>SUM Updated AE | (A+B)-(B+C)<br>Net |
| <b>Detailed AE Zone</b>        | 10                    | 400                                | 410                    | 21                     | 421                     | -11                |

| 500-YR Flood (Moderate Flood Risk) |  |  |    |  |  |  |
|------------------------------------|--|--|----|--|--|--|
| 500-YR                             |  |  | 45 |  |  |  |

# Flood Height: < Value >

| Status # | Flood Height Designation  | Flood Zones  | Message on Flood Query Results Panel      | More Info Link on Flood Query Results Panel   |
|----------|---|--|---|---|
| 1        | <b>Advisory Flood Heights</b>   | A Zones<br><br>Flood Zone Statuses 4 & 6 (Refer to Flood Zone Slide) | FLOOD HEIGHT: About < value> ft. (AFH)    | <p><b>Advisory Flood Heights (AFH) for Approximate A Zones:</b> 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: <a href="http://www.mapwv.gov/flood/content/documents/AFHhandout.pdf">http://www.mapwv.gov/flood/content/documents/AFHhandout.pdf</a></p> <p><b>Restudy and Non-Restudy AE Zones:</b> To validate base flood elevations refer to the Flood Profiles and Flood Elevation Tables in the FIS Report.</p> <p><b>Vertical Datum:</b> The vertical datum of all flood height values in West Virginia is NAVD 88 except for McDowell county is NGVD 29.</p> |
| 2        | <b>Base Flood Elevation (Restudy)</b><br><br>Upper Mon Watershed only | AE Zones<br><br>Flood Zone Statuses 1 & 2                            | FLOOD HEIGHT: < value> feet (BFE)         |   |
| 3        | <b>Base Flood Elevation (Non-Restudy)</b>                             | AE Zones<br><br>Flood Zone Statuses 1,2,7                            | FLOOD HEIGHT: Refer to FIS report for BFE |   |
| 4        | No Flood Height Information   | Flood Zone Statuses 3, 5, 8, 9                                       | FLOOD HEIGHT: N/A                         |   |

Invisible Composite Query Rasters for flood height values of Water Surface Elevation Level (WSEL) layers: *Effective Base Flood WSEL Grid (WSEL\_BFE\_01pct\_1m-cell.grid)* and *Advisory Flood Height WSEL Grid (WSEL\_AFH\_01pct\_5ft-cell.grid)*

# Water Depth: about <<value>>

| Water Depth  | Message               | Sources  |
|--------------|-----------------------|--|
| Water Depth: | About << value >> ft. | <ul style="list-style-type: none"><li>• <b>Model-Backed Depth Grids</b><ul style="list-style-type: none"><li>○ Engineering Studies (HEC-RAS)</li><li>○ AE Non-Restudy Re-Delineations</li></ul></li><li>• <b>Other Depth Grids</b><ul style="list-style-type: none"><li>○ HAZUS</li><li>○ EQL</li><li>○ USGS Inundation Layers</li></ul></li></ul> |

A statewide “composite” Flood Risk Assessment Depth Grid is created from model-backed (1) *Effective*, (2) *Advisory A*, and (3) *Updated AE floodplain boundary* depth grids at a **5-foot cell resolution** (1.5 meters)

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 are a source of credits for CRS communities

# Jefferson County Composite Depth Grid

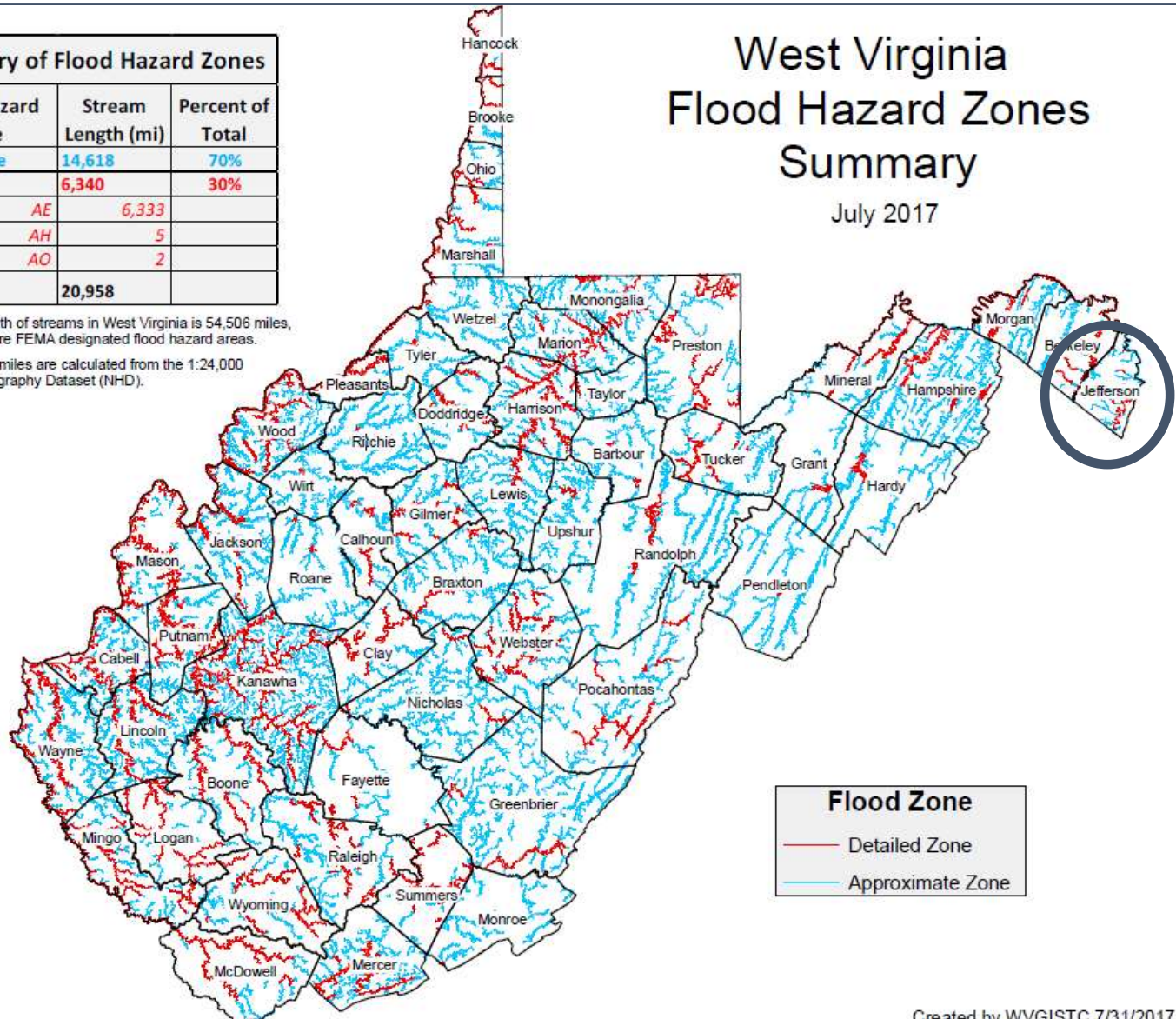
| Summary of Flood Hazard Zones |                    |                  |
|-------------------------------|--------------------|------------------|
| Flood Hazard Zone             | Stream Length (mi) | Percent of Total |
| Approximate                   | 14,618             | 70%              |
| Detailed                      | 6,340              | 30%              |
| AE                            | 6,333              |                  |
| AH                            | 5                  |                  |
| AO                            | 2                  |                  |
| <b>Total</b>                  | <b>20,958</b>      |                  |

† The total length of streams in West Virginia is 54,506 miles, of which 38% are FEMA designated flood hazard areas.

†† The stream miles are calculated from the 1:24,000 National Hydrography Dataset (NHD).

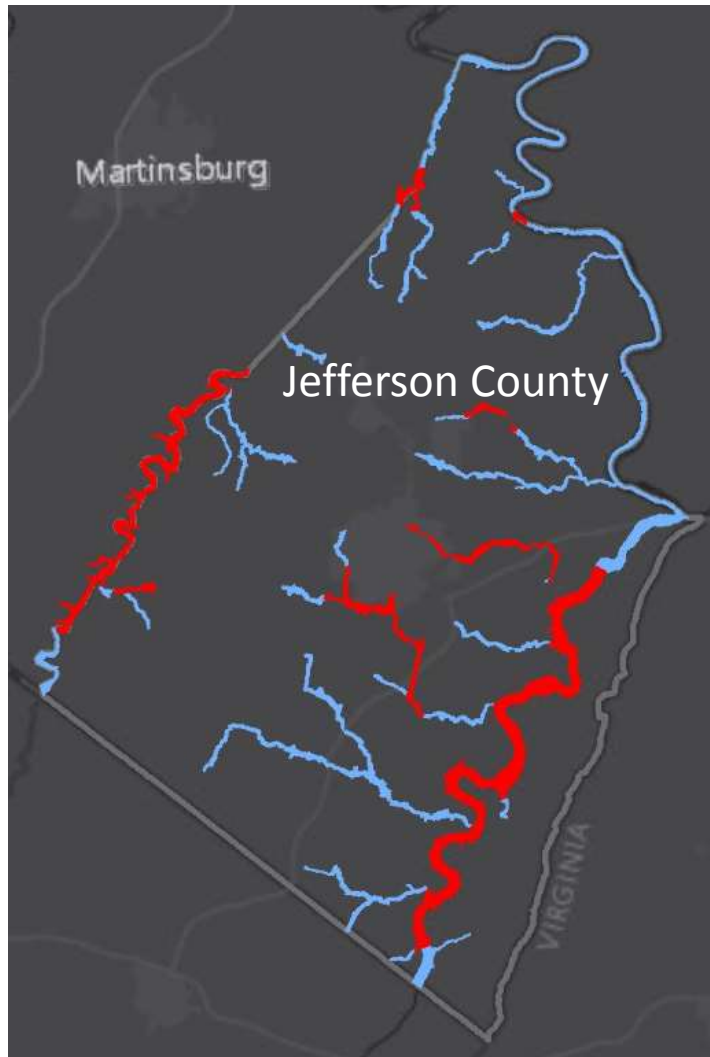
## West Virginia Flood Hazard Zones Summary

July 2017





# Model-Backed Depth Grids



- Preliminary “Model-Backed” Depth Grid for 1% Annual Event Flood for all of Jefferson County
- Depth grids derived from FEMA 2010 1-meter lidar elevation data
- Water Depth important for 3D flood visualizations and flood risk building loss estimates
- Communities receive CRS credit for published water depth grids



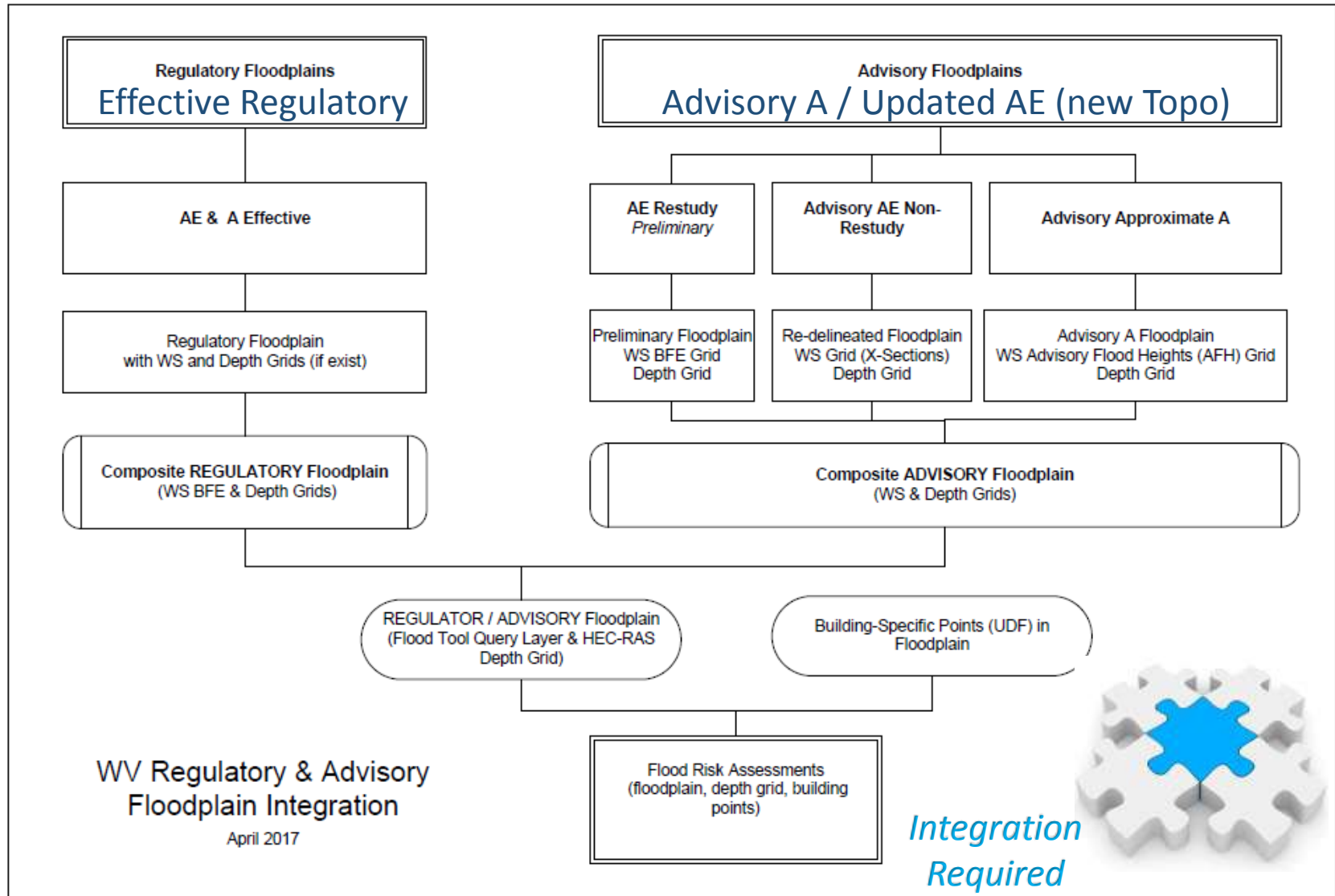
**Advisory A Depth Grid (AECOM)**



**Depth Grid from Updated AE Floodplain Boundary (WVU)**

Jefferson County: 162 stream miles of **Approximate A Zones**, 77 miles of **Detailed Flood Zones**

# Statewide Composite WSEL / Depth Grids



# WV Flood Tool 2018

## Hazard Mitigation Grant Application

- **Flood Risk Assessments (283 communities)**
- **Landslide Assessments (55 counties)**
- **Data Development (parcels, addresses, imagery)**

*Site-specific building-level inventories for hazard exposure and loss estimates*

*Technical support for (1) Local/State Hazard Mitigation Plans and for the (2) Community Rating System (CRS)*

# Hazard Mitigation Grant Proposal

## A Statewide Approach to Risk Studies

### Multi-Hazard Risk Assessment Proposal



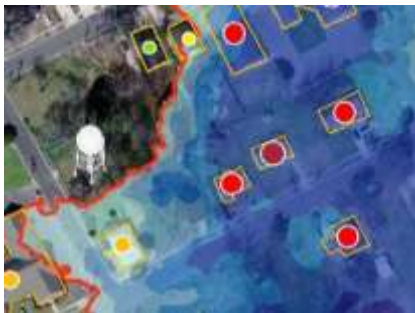
**Floods Risk (TEIF)**



**Landslide Risk (TEAL)**



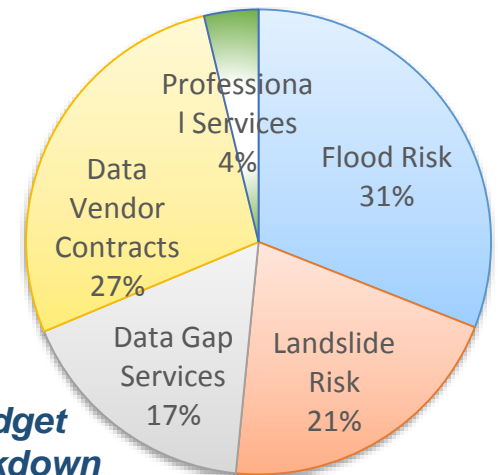
**Reference Data  
Development**



**Identify Site-Specific  
At-Risk Structures**



**Statewide**



# Hazard Mitigation Grant Proposal

## Multi-Agency Coordination

Federal Agencies

State Agencies

Universities

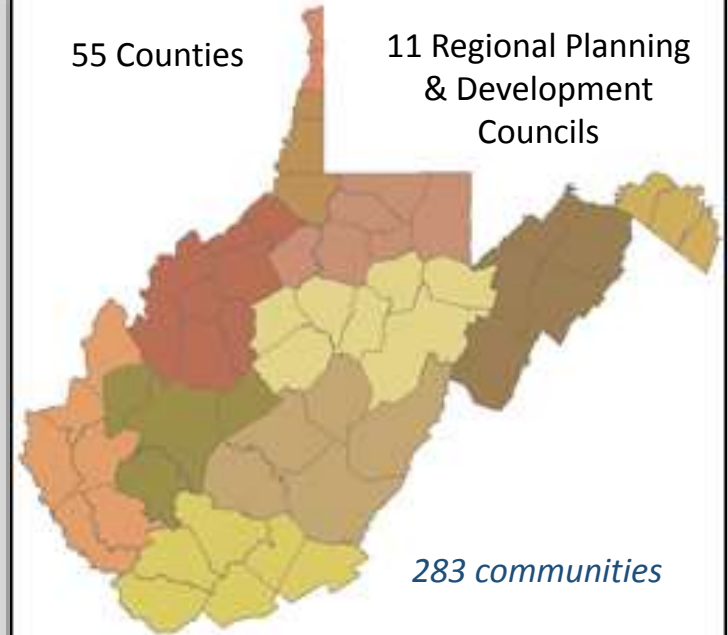
Regional Councils

Local Counties

Private Companies

55 Counties

11 Regional Planning  
& Development  
Councils



283 communities



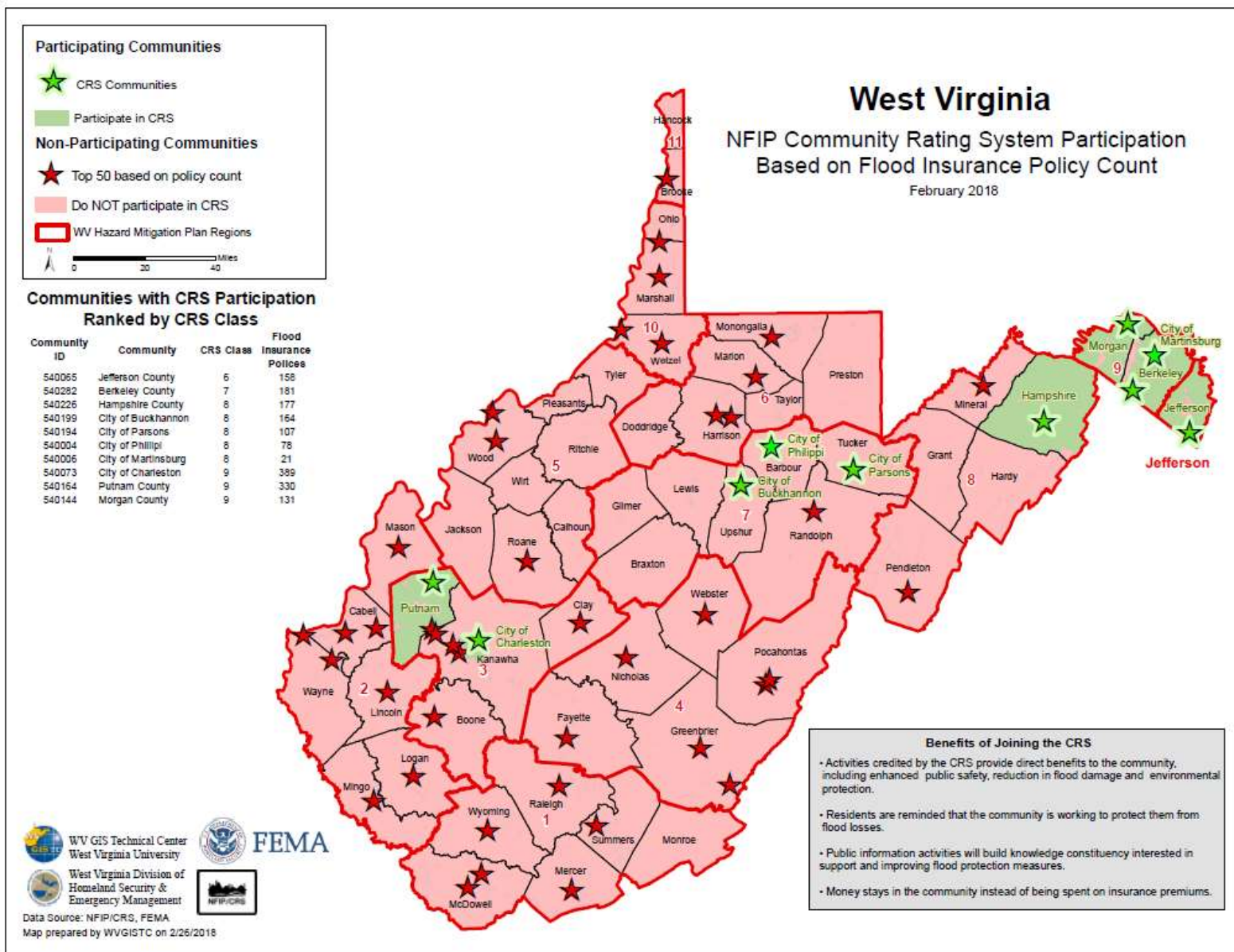
FEMA



ISO



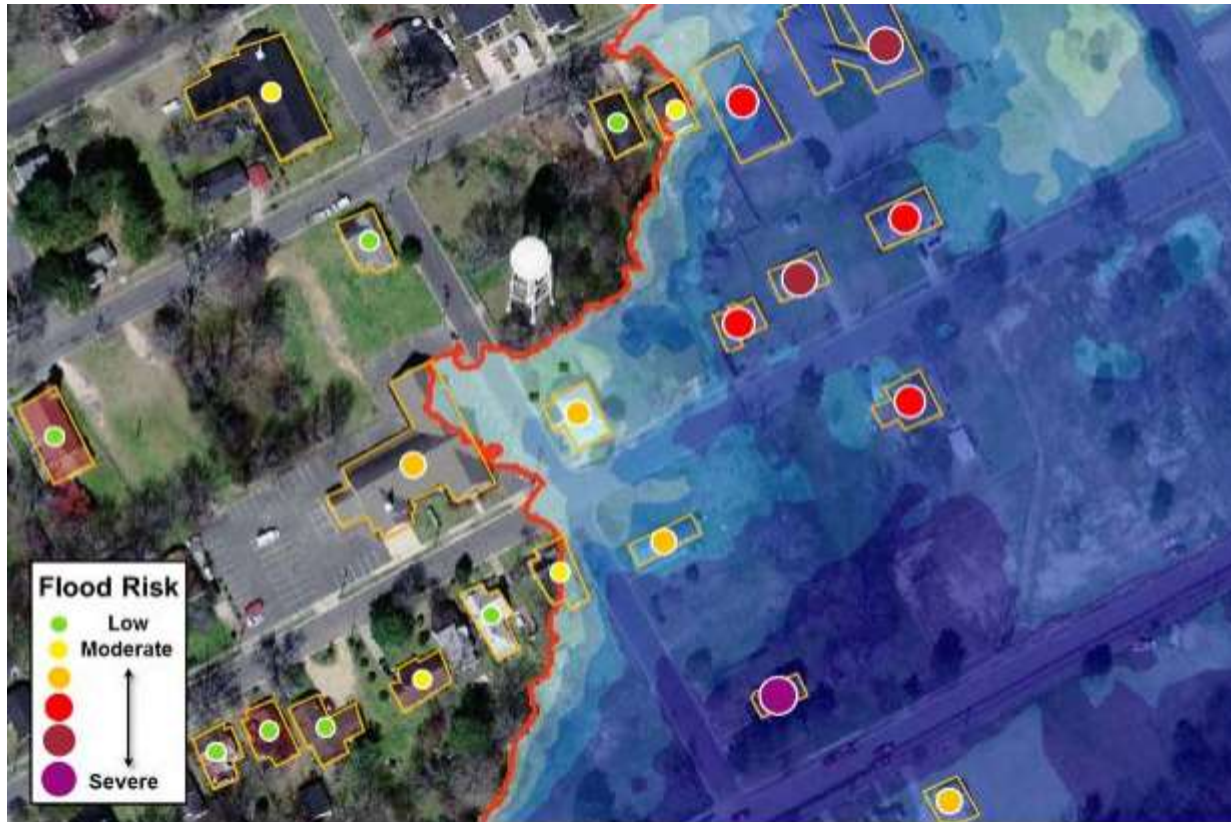
# Support for Community Rating System



# Support for Community Rating System

| Communities with CRS Participation<br>Ranked by CRS Class |                     |           |                          |
|---|---------------------|-----------|--------------------------|
| Community ID  | Community           | CRS Class | Flood Insurance Policies |
| 540065  | Jefferson County    | 6         | 158                      |
| 540282  | Berkeley County     | 7         | 181                      |
| 540226  | Hampshire County    | 8         | 177                      |
| 540199  | City of Buckhannon  | 8         | 164                      |
| 540194  | City of Parsons     | 8         | 107                      |
| 540004  | City of Phillipi    | 8         | 78                       |
| 540006  | City of Martinsburg | 8         | 21                       |
| 540073  | City of Charleston  | 9         | 389                      |
| 540164  | Putnam County       | 9         | 330                      |
| 540144  | Morgan County       | 9         | 131                      |

# Statewide Flood Risk Structure File

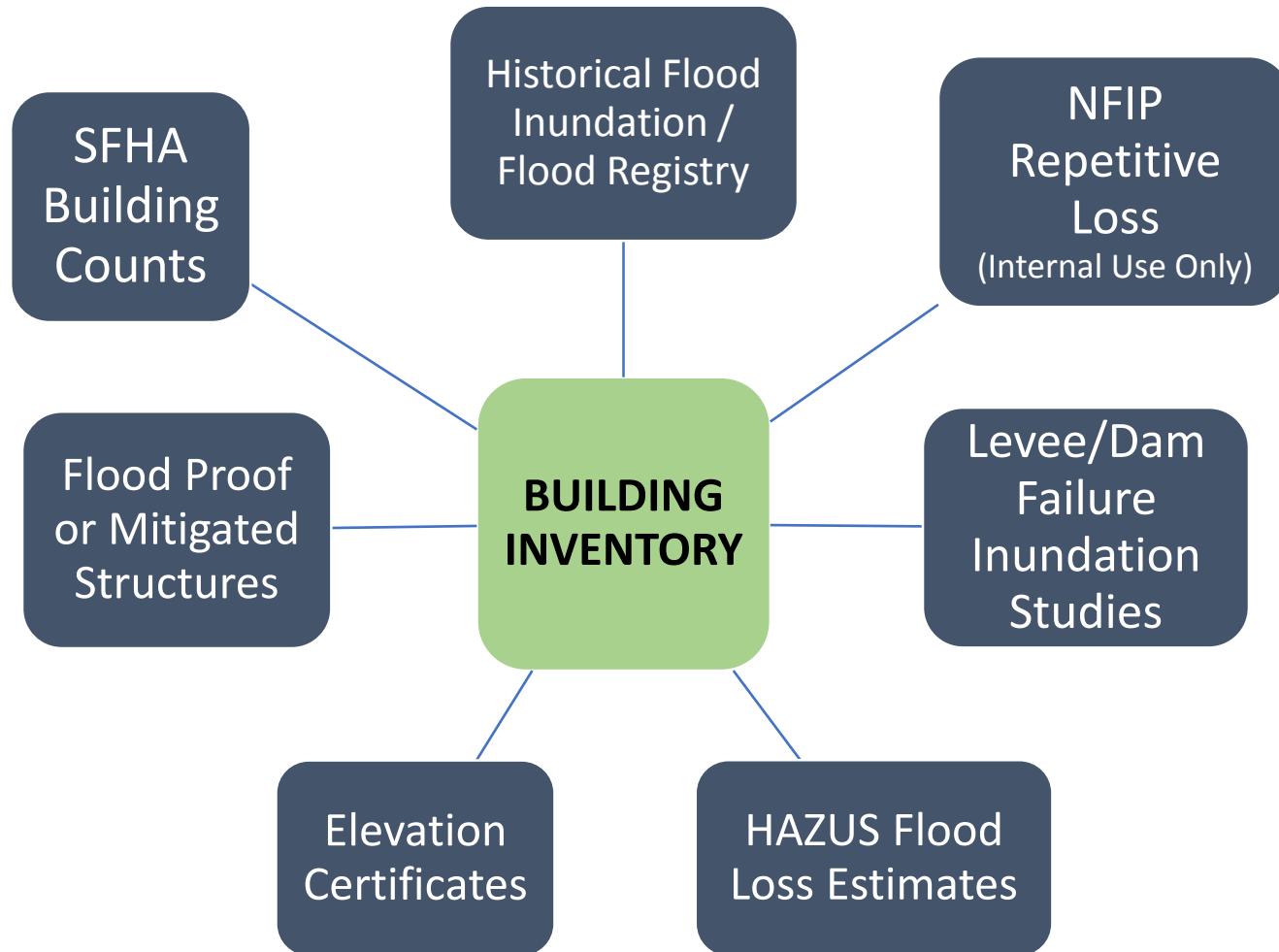


Various **Flood Risk Reports** by community, stream name, flood zones, etc. can be generated from the Flood Risk Data (FRD).

Structure-specific (called “User-Defined Facilities”, or UDFs, in Hazus) flood risk assessments produce loss estimates at the building or structure level, and can often help facilitate flood risk discussions with individual home- or business-owners in a community. These types of risk assessments can provide valuable information to communities to help pre-screen properties and projects before going through a more in-depth Benefit-Cost Analysis (BCA). Personally-identifiable information (PII) such as property address, name of owner, etc. will not be included in FEMA's Flood Risk Assessment dataset (S\_UDF\_Pt and L\_RA\_UDF\_Results). Source: Flood Risk Assessment Guidance - [https://www.fema.gov/media-library-data/1469146645661-31ad3f73def7066084e7ac5bfa145949/Flood\\_Risk\\_Assessment\\_Guidance\\_May\\_2016.pdf](https://www.fema.gov/media-library-data/1469146645661-31ad3f73def7066084e7ac5bfa145949/Flood_Risk_Assessment_Guidance_May_2016.pdf)



# Site-Specific Building Inventories



*Building Inventories important for flood reduction activities*

# Building Inventories

## *CRS Activities Requiring Building Inventories*

| <b>Table 302-1. Impact adjustments for buildings.</b>                   |                    |  |
|---|--------------------|--|
| <b>Activity</b>   | <b>Element</b>     | <b>Denominator</b>   |
| 310 (Elevation Certificates)  | ECPO               | Number of post-FIRM buildings (bPO)                        |
|   | ECPR               | Number of pre-FIRM buildings (bPR)                         |
| 510 (Floodplain Management Planning)                                    | RLAA               | Number of buildings in all repetitive loss areas           |
| 520 (Acquisition and Relocation)  | All                | bSF + number of credited buildings                         |
| 530 (Flood Protection)  | All                | bSF  |
| 610 (Flood Warning and Response)  | FTR, EWD, FRO, CFP | bSF  |
| 620 (Levees)  | All                | Number of buildings affected by levee failure (bLF)        |
| 630 (Dams)  | DFR, DFW, DFO, DCF | Number of buildings inundated by a dam failure flood (bDF) |
| <i>Elements not listed do not have an impact adjustment calculation</i> |                    |  |

*Building Inventories important for flood reduction activities including the NFIP Community Rating System*

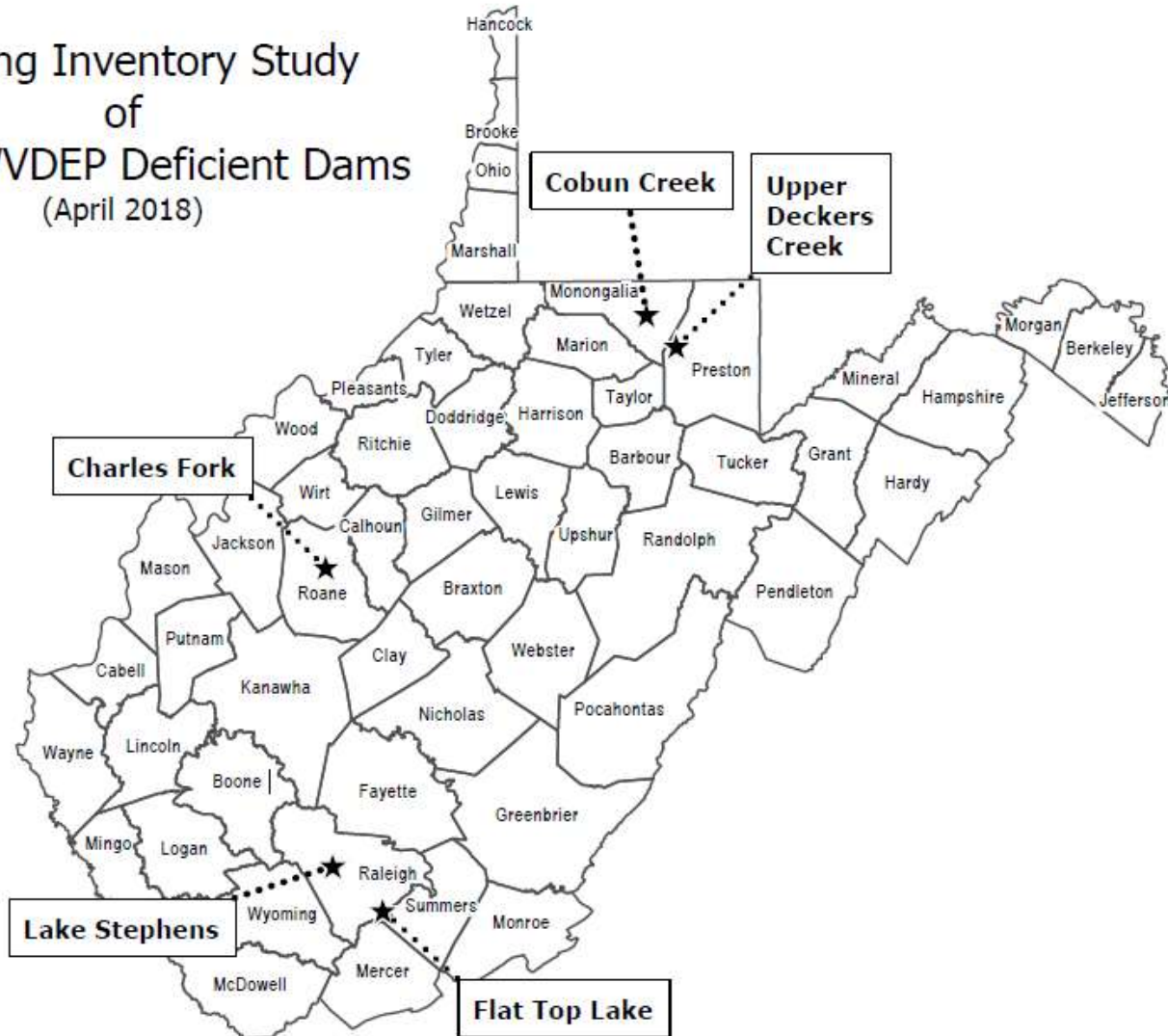
Source: CRS Coordinator's Manual

[https://www.fema.gov/media-library-data/1493905477815-d794671adeed5beab6a6304d8ba0b207/633300\\_2017\\_CRS\\_Coordinators\\_Manual\\_508.pdf](https://www.fema.gov/media-library-data/1493905477815-d794671adeed5beab6a6304d8ba0b207/633300_2017_CRS_Coordinators_Manual_508.pdf)

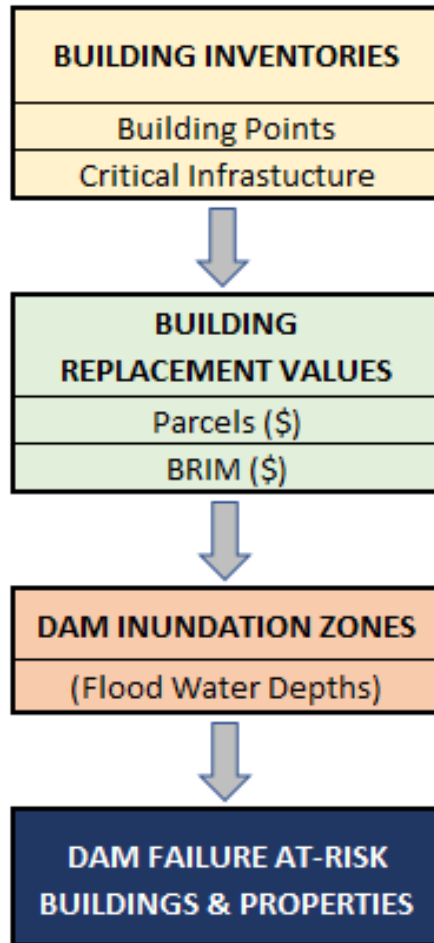


# Building Inventories – Deficient Dams

## Building Inventory Study of Select WVDEP Deficient Dams (April 2018)

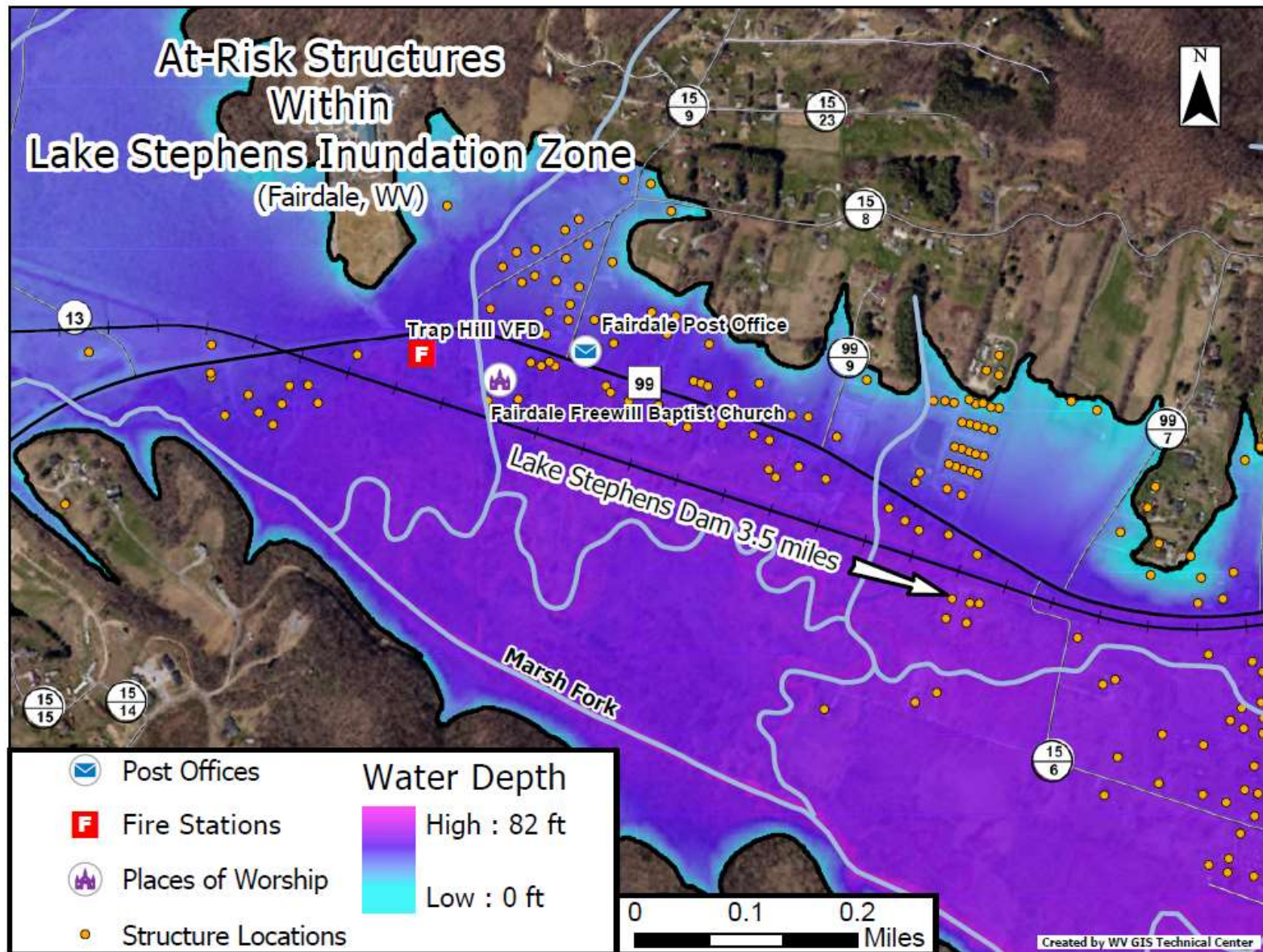


# Building Inventories – Deficient Dams

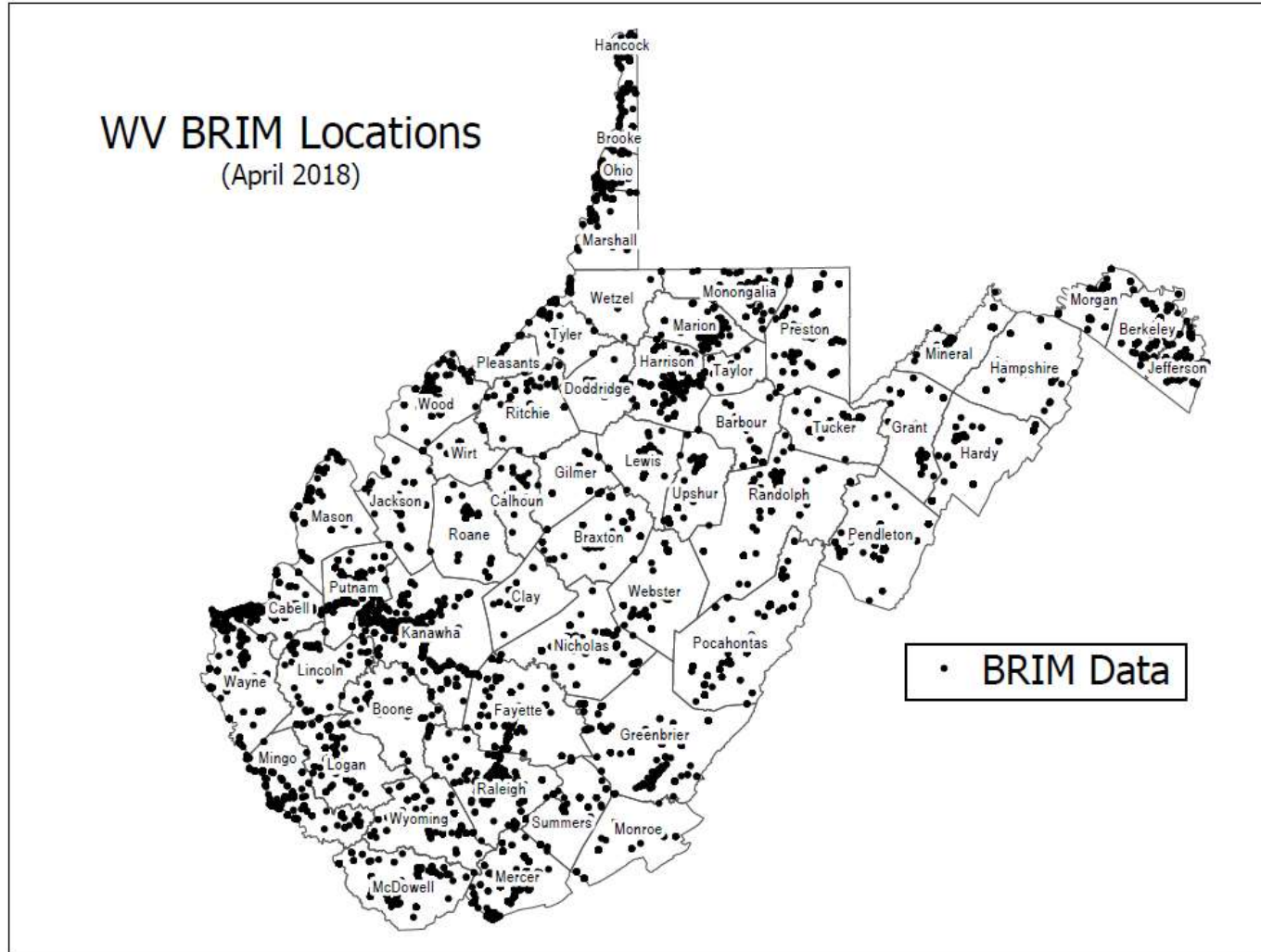


| Category                                       | Charles Fork #17 Dam | Cobun Creek Dam          | Flat Top Lake Dam    | Lake Stephens Dam             | Upper Deckers #1 Dam |
|--|----------------------|--------------------------|----------------------|-------------------------------|----------------------|
| Hazard Potential Classification                | High Risk            | Significant Risk         | High Risk            | High Risk                     | Significant Risk     |
| WV DEP Deficient Dams / Rank                   | T1 / 5               |                          | T1 / 14              | T1 / 7                        |                      |
| Flood Inundation Area (sq. mi.)                | 3.06                 | 0.04                     | 3.38                 | 4.91                          | 1.55                 |
| Flood Inundation Area (acres)                  | 1955                 | 23                       | 2164                 | 3141                          | 995                  |
| River or Stream                                | Charles Fork         | Cobun Creek              | Beaverpond Branch    | Stephens Branch               | Decker's Creek       |
| Watershed                                      | Little Kanawha       | Upper Monongahela        | Lower New            | Coal                          | Upper Monongahela    |
| County   | Roane                | Monongalia               | Raleigh              | Raleigh                       | Preston              |
| Community and distance (mi)                    | Spencer (2 miles)    | Morgantown (1 mile)      | Cool Ridge (1 mile)  | Surveyor (1 mile)             | Arthurdale (1 mile)  |
| Owner  | City of Spencer      | Morgantown Utility Board | Flat Top Lake Assoc. | Raleigh County Rec. Authority | Monongahela SCD      |
| <b># Structures</b>                            | <b>983</b>           | <b>7</b>                 | <b>252</b>           | <b>1,071</b>                  | <b>188</b>           |
| Building Type - % Residential                  | 58%                  | 29%                      | 85%                  | 80%                           | 75%                  |
| Building Type - % Farm                         | 16%                  | 0%                       | 9%                   | 5%                            | 12%                  |
| Building Type - % Commercial / Industrial      | 13%                  | 57%                      | 1%                   | 12%                           | 9%                   |
| Building Type - % Other                        | 13%                  | 14%                      | 5%                   | 3%                            | 4%                   |
| <b>At-Risk Building Exposure Value (\$)</b>    | <b>\$33,821,000</b>  | <b>\$83,900</b>          | <b>\$11,244,500</b>  | <b>\$27,286,500</b>           | <b>\$7,465,600</b>   |
| <b># Critical Facilities</b>                   | <b>7</b>             | <b>0</b>                 | <b>1</b>             | <b>5</b>                      | <b>0</b>             |
| <b>Critical Facilities Exposure Value (\$)</b> | <b>\$2,025,500</b>   |                          | <b>\$203,300</b>     | <b>\$1,175,800</b>            |                      |
| <b># Parcels Intersecting Inundation Zone</b>  | <b>1,253</b>         | <b>25</b>                | <b>478</b>           | <b>2,063</b>                  | <b>277</b>           |
| Land Use Type - % Vacant / Open Space          | 24%                  | 68%                      | 23%                  | 44%                           | 28%                  |
| Land Use Type - % Residential                  | 40%                  | 0%                       | 45%                  | 34%                           | 50%                  |
| Land Use Type - % Agriculture                  | 14%                  | 0%                       | 20%                  | 8%                            | 10%                  |
| Land Use Type - % Commercial / Industrial      | 9%                   | 28%                      | 5%                   | 2%                            | 8%                   |
| Land Use Type - % Other                        | 13%                  | 4%                       | 7%                   | 11%                           | 5%                   |

# Building Inventories – Deficient Dams



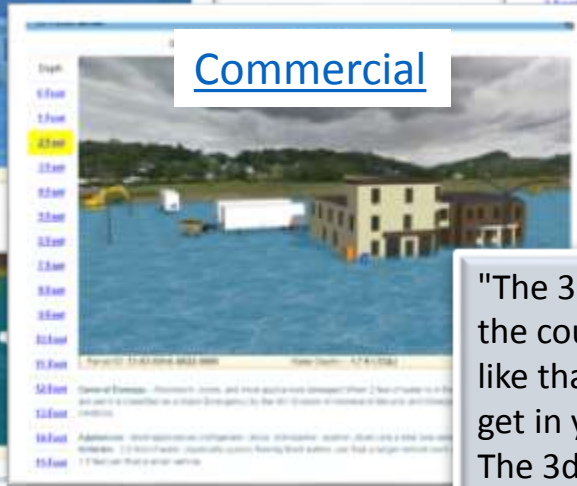
# WV Board of Risk & Insurance Management



Building value source for state tax-exempt buildings

# 3D Flood Visualizations

*Visualizations are easier for non-technical users to understand flood risks to their property in feet of water rather than comprehending the adjacent base flood elevation*



"The 3D visualization is really cool. Our citizen comes to the counter and says 'there is no way there can be a flood like that.' Then we show them how much water you will get in your house and how much it will cost to repair it. The 3d visual is really good! And then we like the way you can click on a parcel ID and it brings up all the information as far as property owner, tax map and parcel number, deed book, page number - everything is right there. And the building information is really good too because it tells what the structure is made of, whether it has a basement - all the information that we would have to go to another system to pull is right there." Source: 3D Flood Visualization Comment from Debbie Robinson, Kanawha County Planning and Development Office

3D flood visualizations are available statewide for locations where **flood depth grids** exist. The parcel assessment data fields (land use, stories) are necessary to identify the correct property type: residential one- or two-story homes, mobile home, commercial/industrial, etc.

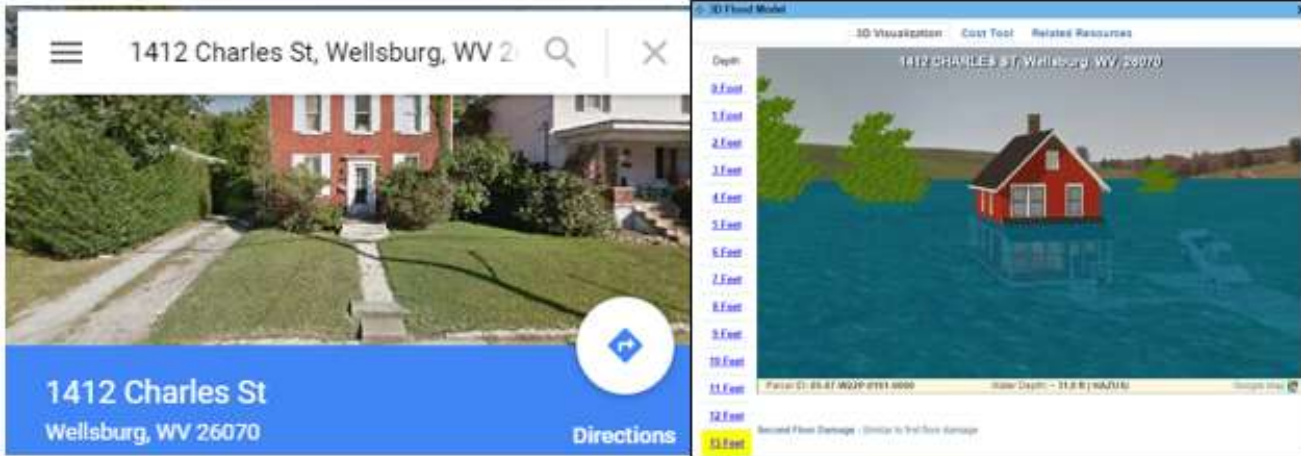


# 3D Flood Visualizations

## Brooke County

<https://www.mapwv.gov/flood/map/?v=1&pid=05-07-W22P-0161-0000>

1412 Charles St, Wellsburg, WV, 26070, Parcel ID: 05-07-W22P-0161-0000



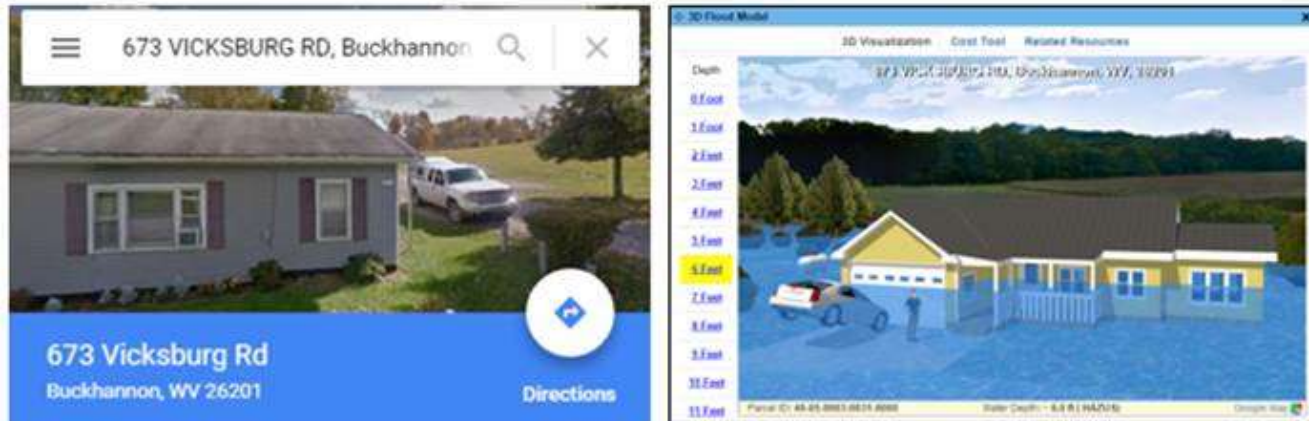
“This is the coolest thing ever....thank you!!!”

Source: 3D Flood Visualization Comment from Terri Jo Bennett, CFM, Upshur County Building Permit, Floodplain and Addressing and Mapping Coordinator

## Upshur County

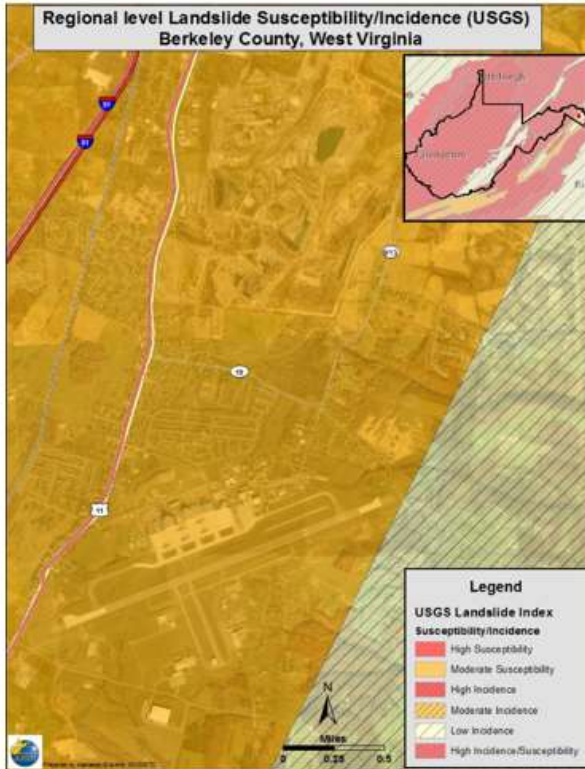
<https://www.mapwv.gov/flood/map/?v=0&pid=49-05-0003-0031-0000>

673 Vicksburg Rd, Buckhannon, WV, 26201, Parcel ID: 49-05-0003-0031-0000

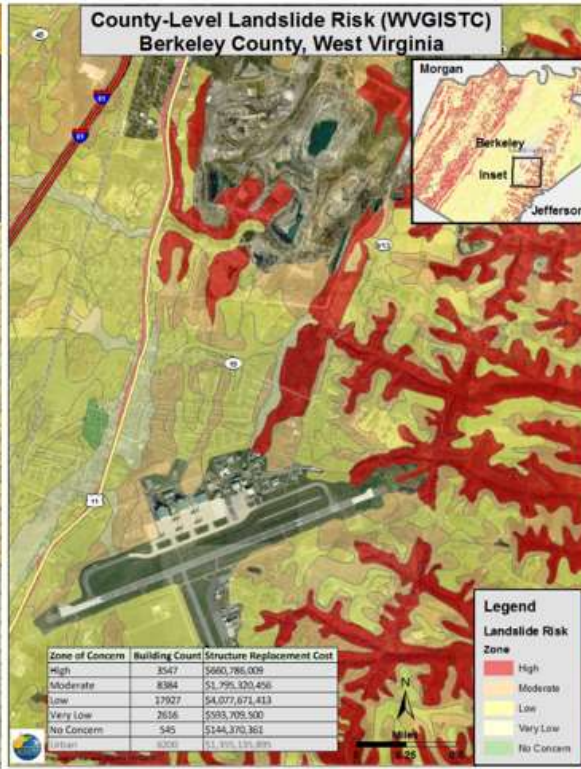


# Landslide Risk Assessment

REGIONAL LANDSLIDE MAP (USGS)



COUNTY LANDSLIDE MAP (WVGISTC)



## Landslide Risks

Buildings Exposed to Landslide Risks

| Zone of Concern                 | Building Count | Structure Replacement Cost |
|---------------------------------|----------------|----------------------------|
| High                            | 3547           | \$660,786,009              |
| Moderate                        | 8384           | \$1,795,320,456            |
| Low                             | 17927          | \$4,077,671,413            |
| Very Low                        | 2616           | \$593,709,500              |
| No Concern                      | 545            | \$144,370,361              |
| *Urban (No relevant attributes) | 6200           | \$1,355,135,895            |

*Risk Assessment table showing building counts along with estimated replacement costs in landslide zones of concern*

*Landslide susceptibility map showing generalized USGS map and detailed WVGISTC map*

# FUTURE DIRECTIONS

Table 110-2. Credit points awarded for CRS activities.\*

| Activity                                     | Maximum Possible Points | Maximum Points Earned | Average Points Earned | Percentage of Communities Credited |
|--|-------------------------|-----------------------|-----------------------|------------------------------------|
| <b>300 Public Information Activities</b>     |                         |                       |                       |                                    |
| 310 Elevation Certificates                   | 116                     | 116                   | 38                    | 96%                                |
| 320 Map Information Service                  | 90                      | 90                    | 73                    | 85%                                |
| 330 Outreach Projects                        | 350                     | 350                   | 87                    | 93%                                |
| 340 Hazard Disclosure                        | 80                      | 62                    | 14                    | 84%                                |
| 350 Flood Protection Information             | 125                     | 125                   | 38                    | 87%                                |
| 360 Flood Protection Assistance              | 110                     | 100                   | 55                    | 41%                                |
| 370 Flood Insurance Promotion <sup>5</sup>   | 110                     | 110                   | 39                    | 4%                                 |
| <b>400 Mapping and Regulations</b>           |                         |                       |                       |                                    |
| 410 Flood Hazard Mapping                     | 802                     | 576                   | 60                    | 55%                                |
| 420 Open Space Preservation                  | 2,020                   | 1,603                 | 509                   | 89%                                |
| 430 Higher Regulatory Standards              | 2,042                   | 1,335                 | 270                   | 100%                               |
| 440 Flood Data Maintenance                   | 222                     | 249                   | 115                   | 95%                                |
| 450 Stormwater Management                    | 755                     | 605                   | 132                   | 87%                                |
| <b>500 Flood Damage Reduction Activities</b> |                         |                       |                       |                                    |
| 510 Floodplain Mgmt. Planning                | 622                     | 514                   | 175                   | 64%                                |
| 520 Acquisition and Relocation               | 2,250                   | 1,999                 | 195                   | 28%                                |
| 530 Flood Protection                         | 1,600                   | 541                   | 73                    | 13%                                |
| 540 Drainage System Maintenance              | 570                     | 454                   | 218                   | 43%                                |
| <b>600 Warning and Response</b>              |                         |                       |                       |                                    |
| 610 Flood Warning and Response               | 395                     | 365                   | 254                   | 20%                                |
| 620 Levees                                   | 235                     | 207                   | 157                   | 0.5%                               |
| 630 Dams                                     | 160                     | 99                    | 35                    | 35%                                |

*Use FEMA's CRS Program as a performance measure*



# FUTURE DIRECTIONS

## *Programming Enhancements*

- **Mobile Flood Tool:** Update mobile phone version with new flood hazard information
- **Flood Query Layers:** Update query layers for stream names, HEC-RAS models, and flood profiles
- **Flood Resource Links:** Coordinate with floodplain managers and flood insurance administrators to publish useful links on WV Flood Tool. Resources links can be organized by flood insurance needs. [CRS Series 300 \(Public Information\)](#)
- **Community Web Resource Links:** Link to [CRS Activity 350 \(General floodplain page\)](#)
- **Detailed Risk Assessments (RiskMAP View):** [CRS Activity 510 \(Floodplain Management Planning\)](#)
  - **Flood Risks:** Total Exposure in Floodplains (TEIF). Add building-level Hazus loss estimates for all flood structures located in flood hazard areas.
  - **Landslide Risks:** Total Exposure in Areas of Landslides (TEAL). Add link to new landslide incident and susceptibility maps.
  - **Dam/Levee Failures:** Building inventories for [CRS Series 600 Warning and Response activities](#); [CRS 632.a State Dam Safety program credit for communities downstream of high-hazard-potential dams.](#)

# FUTURE DIRECTIONS

## *Flood Layers*

- **New Advisory A:** Add Advisory Flood Heights (AFH) for Barbour and Boone counties. CRS element 512.a. (Floodplain Management Planning)
- **News Depth Grids:** Credit under CRS element 322.d. (Map Information Service)
  - **Countywide HEC-RAS Depth Grid:** Finalize “model-backed” depth grid for Jefferson County.
  - **Flood 2016 Depth Grid:** Add USGS flood inundation depth grids from high water marks/terrain for 2016 flood areas. (Also CRS element 322.f credit)
- **Historical Flood Data:** Credit under CRS element 322.f
  - **USGS High Water Marks** for previous disasters
- **Elevation Certificates:** Publish Flood Elevation Certificates for interested floodplain managers. Coordinate effort with Community Rating System (CRS) program.
  - Building elevation data on a website is credited under CRS Activity 350 (Flood Protection Information) and having it on a GIS is credited under Activity 440 (Flood Data Maintenance).
- **Update Buyout Properties:** CRS Activity 520 (Acquisition and Relocation) and CRS 422.b (Open Space Deed Restrictions)

# FUTURE DIRECTIONS

## *Reference Layers*

- **Aerial Imagery:** Add new 2018 county aerial imagery for 20 counties
- **Parcels:** Secure HMGP funding for select county assessor offices to convert from manual to digital parcel maintenance systems [CRS Activity 440 \(Flood Data Maintenance\)](#); [CRS 420 \(Open Space\)](#).
- **Addresses:** Provide technical support for E-911 Addressing Offices to correct missing or incorrect addresses in high risk flood zones. [CRS Activity 330 \(Outreach Project – print out addresses of all properties in floodplain\)](#)
- **Elevation:** Add New Hi-Resolution Topography. Capitalize on FEMA's considerable investment in high-resolution topography by incorporating one-meter resolution digital elevation models and one-foot contours in WV Flood Tool. ([CRS Activity 440](#))
- **Wetlands and Soils:** [CRS Activity 440](#)

# WV Flood Tool Updates

## March 2018 Updates

- **Flood Zones**

- Revised 9 Flood Zone Categories in Flood Query Results Panel
- Added preliminary Updated AE Floodplain Boundaries for Jefferson County and Clear Fork, Wyoming County.
- Uploaded the most current and official National Flood Hazard Layers (NFHL)
  - Cleaned and further processed NFHL for cartography and flood queries (e.g., flood zone, panel index number, community information)
  - Added 500-YR floodplain boundaries and flood zone labels to EXPERT View map
- Added “orange” color high-risk flood zones to the PUBLIC View for **Advisory A** and **Updated AE** floodplain zones that exist but are NOT in a FEMA 100-year effective floodplain

- **Flood Heights**

- Display Base Flood Elevations (BFE) in the Flood Query Results Panel for the preliminary Upper Monongahela Watershed Restudy
- Increased resolution of statewide composite Advisory Flood Height layer from 10-ft to 5-ft grid cells

- **Depth Grids**

- Created a new statewide composite depth grid of 5-ft cell resolution that incorporates all depth grids from Restudies, Advisory Flood Height studies, and Updated AE floodplain boundary redelineations
- For Jefferson County published preliminary countywide “model-backed” depth grid for 100-year floodplains

***New flood data and updated query programming logic***

# WV Flood Tool Updates (cont.)

## March 2018 Updates

- **Community and CRS Class**

- In Flood Query Results Panel added Community Name, Community Identifier, and CRS Class
- Added FEMA's community boundaries as a reference layer

- **Elevation**

- Added a more current, accurate 10-ft resolution elevation grid from the best available topographic sources to include LiDAR data
- Provide a metadata link about the elevation source based on the queried location

- **Parcel Reference Layer**

- Added parcels from the best available sources for all 55 West Virginia counties
- Created web links for all the full-version tax maps (n = 22,875) for all 55 West Virginia counties. The full-version PDF tax maps are the authoritative source for digital parcels.

- **Aerial Photography Base Layer**

- Added new 2017 leaf-off aerial photography for Kanawha County

- **Map Functions**

- For selected location added external viewer links to Google Street View, Google Maps, Bing Maps, and OpenStreetMap
- Includes a new map function that allows users to add GIS files or web services to the WV Flood Tool



# Flood Tool Development Team



Kurt Donaldson  
Manager



Xiannian Chen  
Lead Programmer



Jim Schindling  
Database  
Programmer



Kevin Kuhn  
GIS Analyst /  
Address-Parcel  
Specialist

WV GIS Technical Center  
West Virginia University  
Morgantown, WV  
<http://wvgis.wvu.edu>



Frank LaFone  
Systems  
Administrator



Yibing Han  
GIS Programmer



Maneesh Sharma  
GIS Analyst /  
Flood Risk  
Specialist



Eric Hopkins  
GIS Analyst /  
Flood Risk  
Specialist

# Contact Information

## WVU GIS Technical Center

**Kurt Donaldson**, GIS Manager

[kurt.donaldson@mail.wvu.edu](mailto:kurt.donaldson@mail.wvu.edu), phone: (304) 293-9467

**Eric Hopkins**, GIS Analyst

[Eric.Hopkins@mail.wvu.edu](mailto:Eric.Hopkins@mail.wvu.edu), phone: (304) 293-9463

**Maneesh Sharma**, GIS Analyst

[Maneesh.Sharma@mail.wvu.edu](mailto:Maneesh.Sharma@mail.wvu.edu), phone (304) 293-9466