

Risk MAP (Hampshire Co. Preliminary Flood Maps)

Risk **M**apping (New Preliminary Flood Maps)

Understand Flood Map Changes
(BFEs, Floodplains/Floodways)

Floodplain Building Counts

SFHA Building Changes and
Outreach Letters

LOMAs (SFHA mapped out)

All Essential Facilities mapped out

New Vertical Datum (NAVD88)

Risk **A**nalysis (Risk Identification)

Large Floodplain Area (acres) and
Length (miles)

Higher Number of Community Assets

High Flood Depths

High Building Damage Losses

High Repetitive Loss Structures and
Paid Claims

Higher Number of Recreational
Vehicles

Risk **P**lanning (Flood resiliency)

Swift Grant Funding for RL Structures

Preload Structures into FEMA SDE
Software

Validate floodplain building inventory

Plan for Inundated Roads

Verify Buyout Properties

Apply for higher CRS status class

Plan for more stream gauges besides
South Branch of Potomac

Publish Elevation Certificates on WV
Flood Tool



Preliminary Floodplain Building Counts

COMMUNITY IDENTIFICATION					
Community Name	Community Type	Estimated structures in the Community	Estimated structures in the preliminary flood high hazard area	Estimated structures newly mapped in	Estimated structures newly mapped out
Hampshire County*	Unincorporated	14,884	727	31	384
Capon Bridge	Incorporated	263	26	0	12
Romney	Incorporated	1,158	4	0	3
	County	16,305	757	31	399

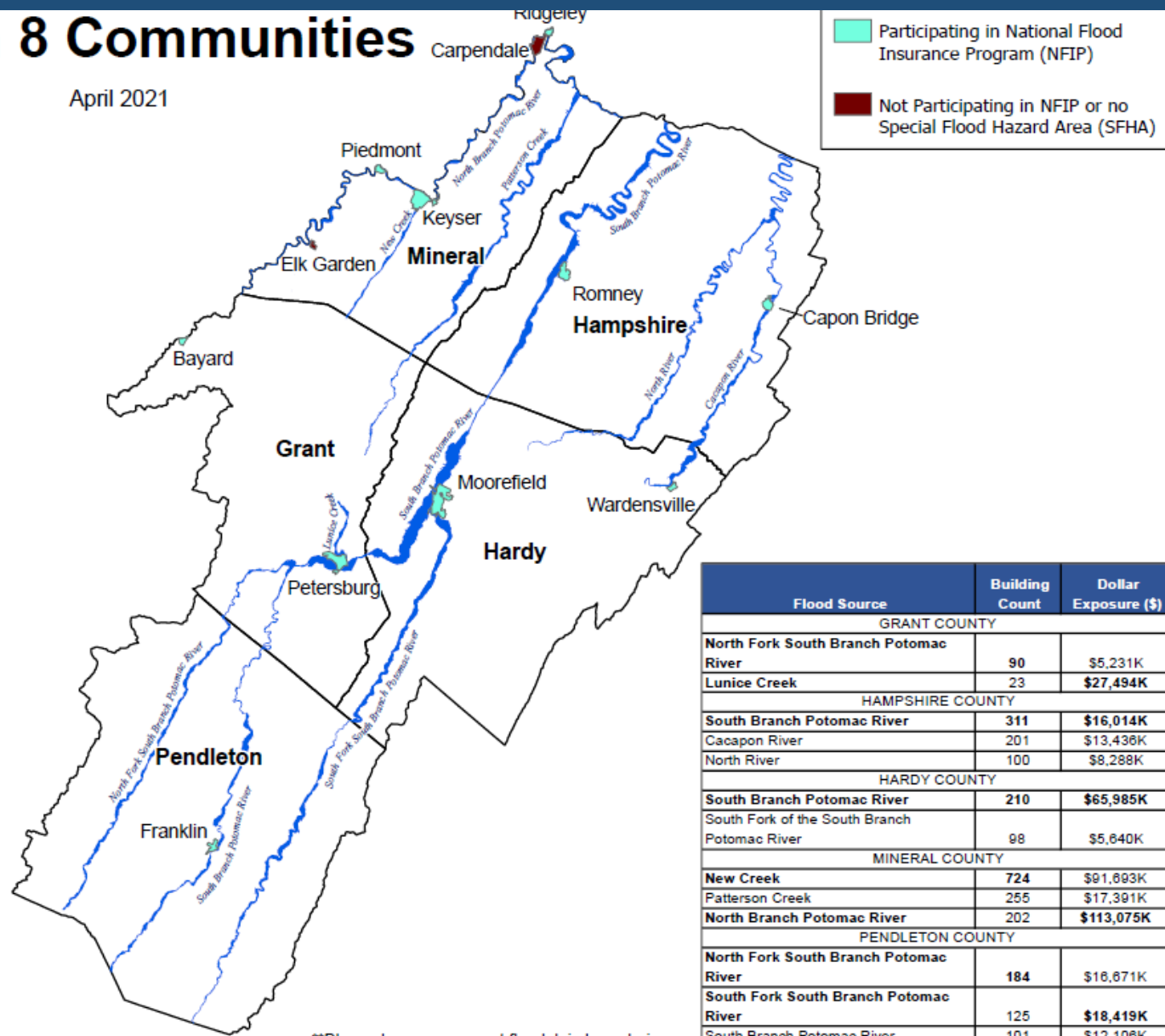
County Net Change in structures: - 368

County Net Change in floodway structures: - 74

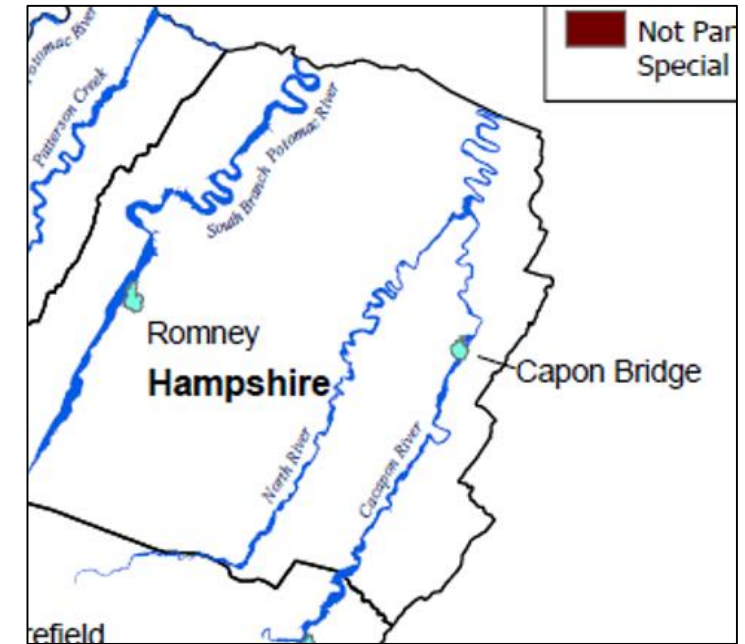
Building Counts & Values by Rivers (2021)

Region 8 Communities

April 2021



Flood Source	Building Count	Dollar Exposure (\$)
GRANT COUNTY		
North Fork South Branch Potomac River	90	\$5,231K
Lunice Creek	23	\$27,494K
HAMPSHIRE COUNTY		
South Branch Potomac River	311	\$16,014K
Cacapon River	201	\$13,436K
North River	100	\$8,288K
HARDY COUNTY		
South Branch Potomac River	210	\$65,985K
South Fork of the South Branch Potomac River	98	\$5,640K
MINERAL COUNTY		
New Creek	724	\$91,693K
Patterson Creek	255	\$17,391K
North Branch Potomac River	202	\$113,075K
PENDLETON COUNTY		
North Fork South Branch Potomac River	184	\$16,671K
South Fork South Branch Potomac River	125	\$18,419K
South Branch Potomac River	101	\$12,106K



Top Rivers with highest building counts are **South Branch of Potomac River (311)**, **Cacapon River (201)**, and **North River (100)**.

SFHA Map Change Letters

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



[FEMA Region 3 Toolkit for New Flood Studies](#)

City of White Sulphur Springs

White Sulphur Springs has 68 buildings being mapped into the SFHA

Date: 10/14/2021

Dear SMITH JOHN:

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

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

How will these changes affect you?

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

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

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

[Mail Merge Template for SFHA Mapped-in Structures](#)

Counties which recently sent outreach letters to homeowners:

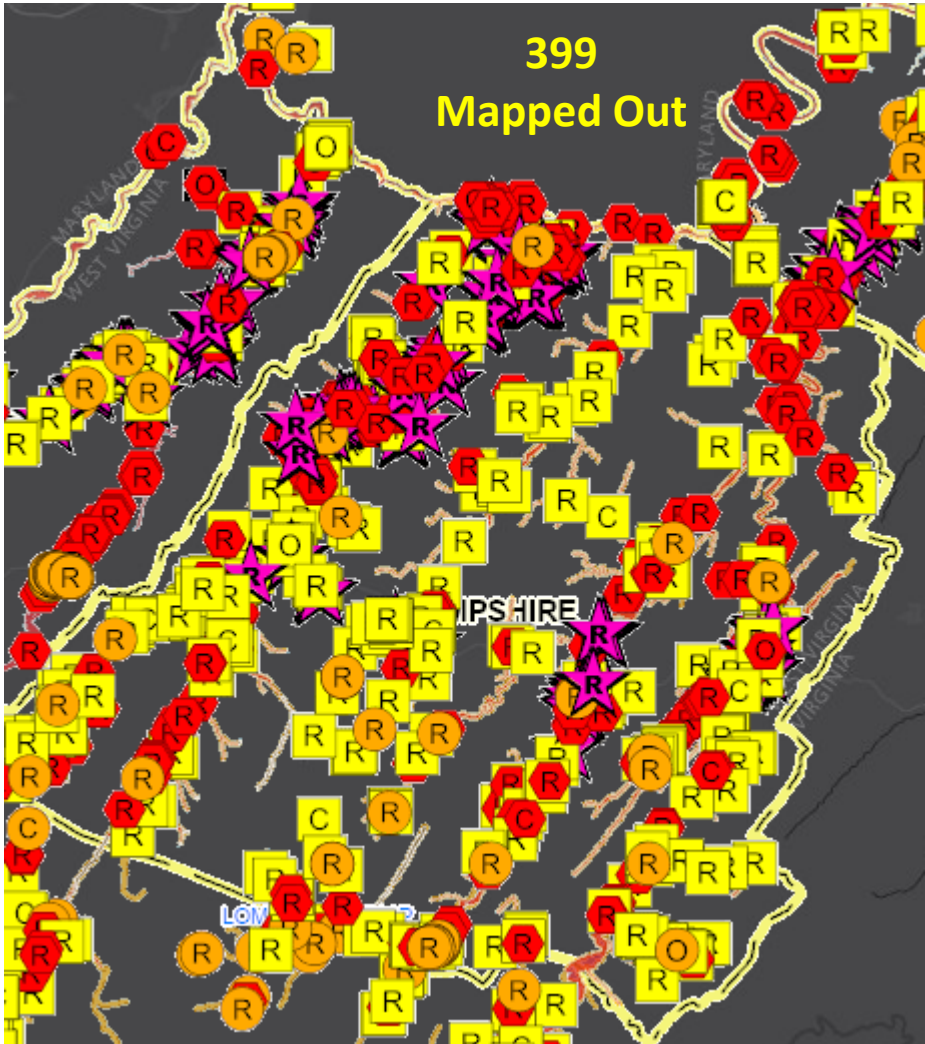
- Hardy County Risk MAP
- Kanawha County - Elk River PMR
- Greenbrier County Risk MAP



Building SFHA Change (LiDAR LOMAs)

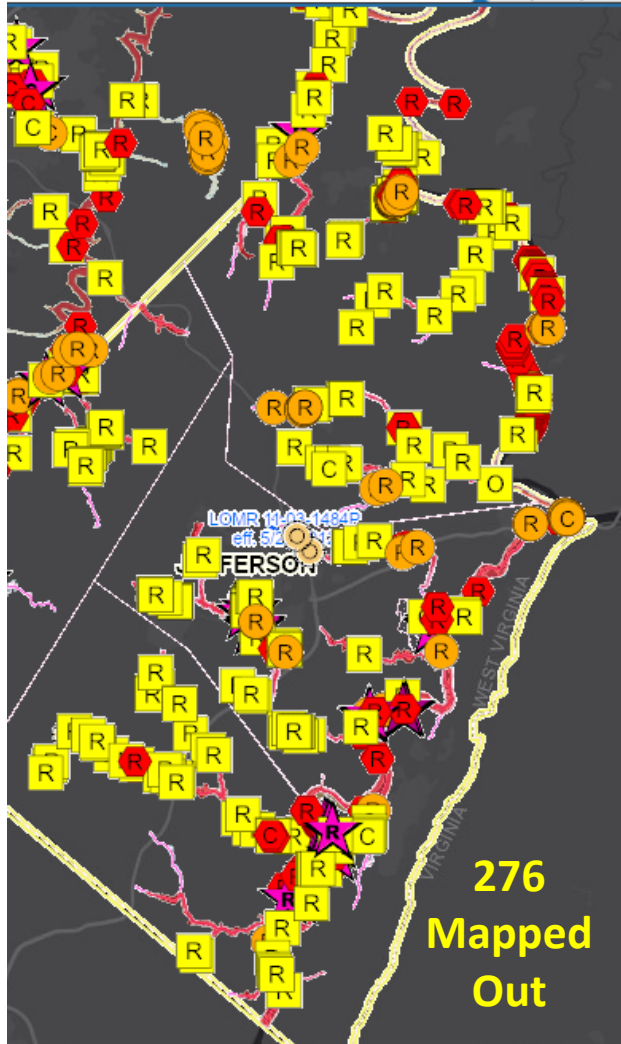
Hampshire County

399
Mapped Out



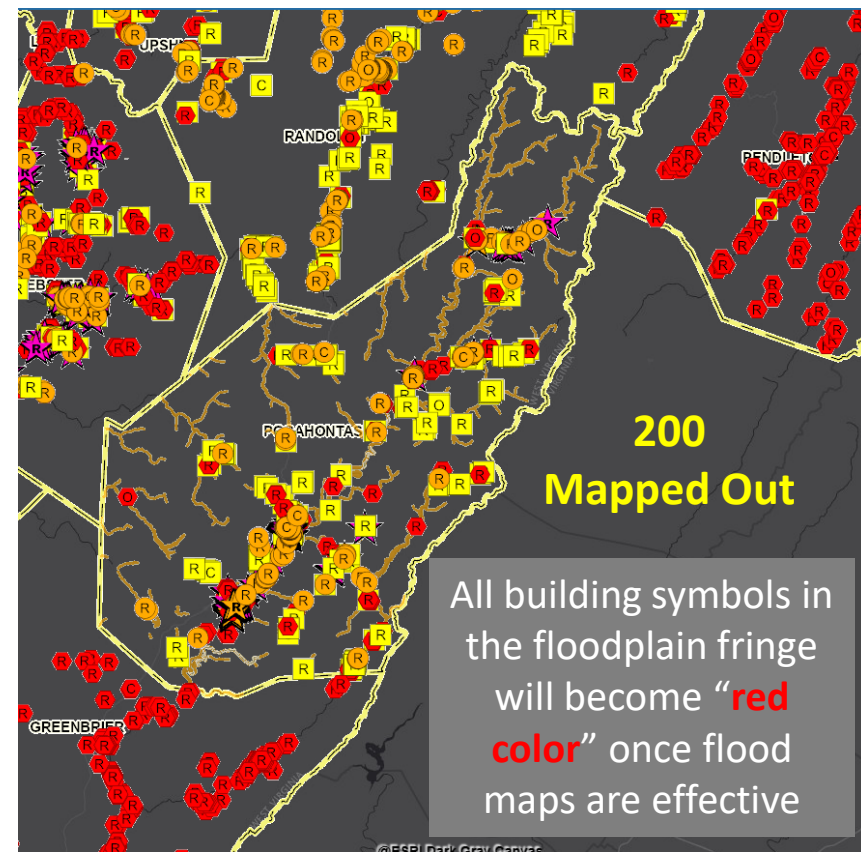
Jefferson County

276
Mapped Out



Pocahontas County

200
Mapped Out



All building symbols in the floodplain fringe will become "red color" once flood maps are effective

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

All Essential Facilities Mapped Out




All essential facilities in Hampshire County mapped out:

Capon Bridge Volunteer Fire Department mapped out

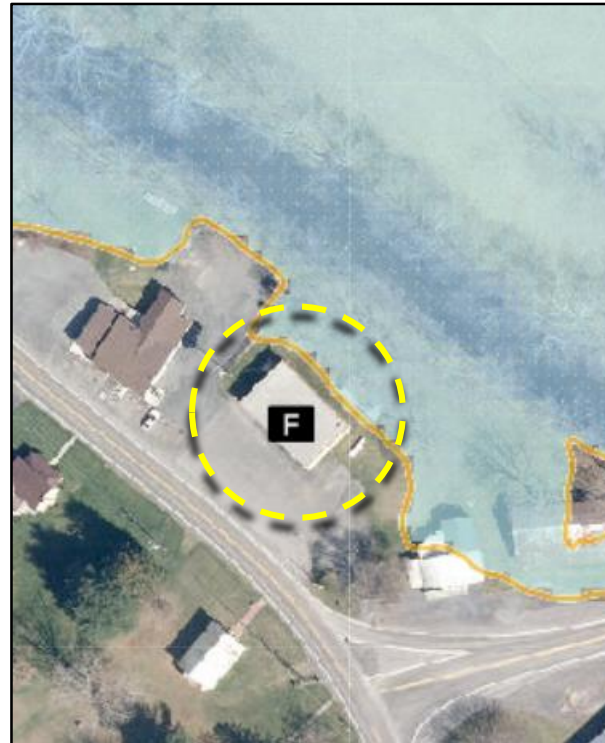


Building ID: [14-03-0002-0012-0000_2766](#)

Preliminary Floodplain

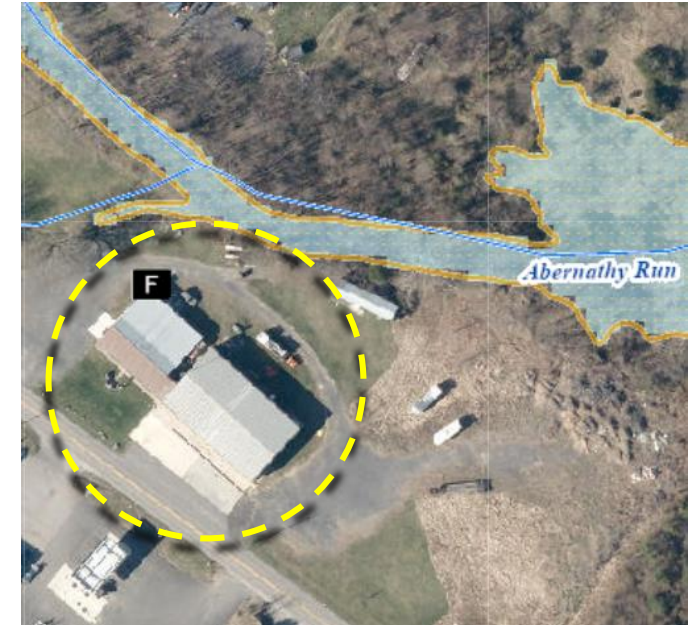
-  FLOODWAY
-  Zone AE
-  Zone A

North River Valley Volunteer Fire Company in Hampshire County* mapped out



Building ID: [14-09-0001-0034-0000_15137](#)

Springfield Valley Fire Co. in Hampshire County* mapped out



Building ID: [14-10-0018-0094-0002_221](#)



Newer Vertical Data (NAVD 88)

VERTICAL DATUMS IN WEST VIRGINIA

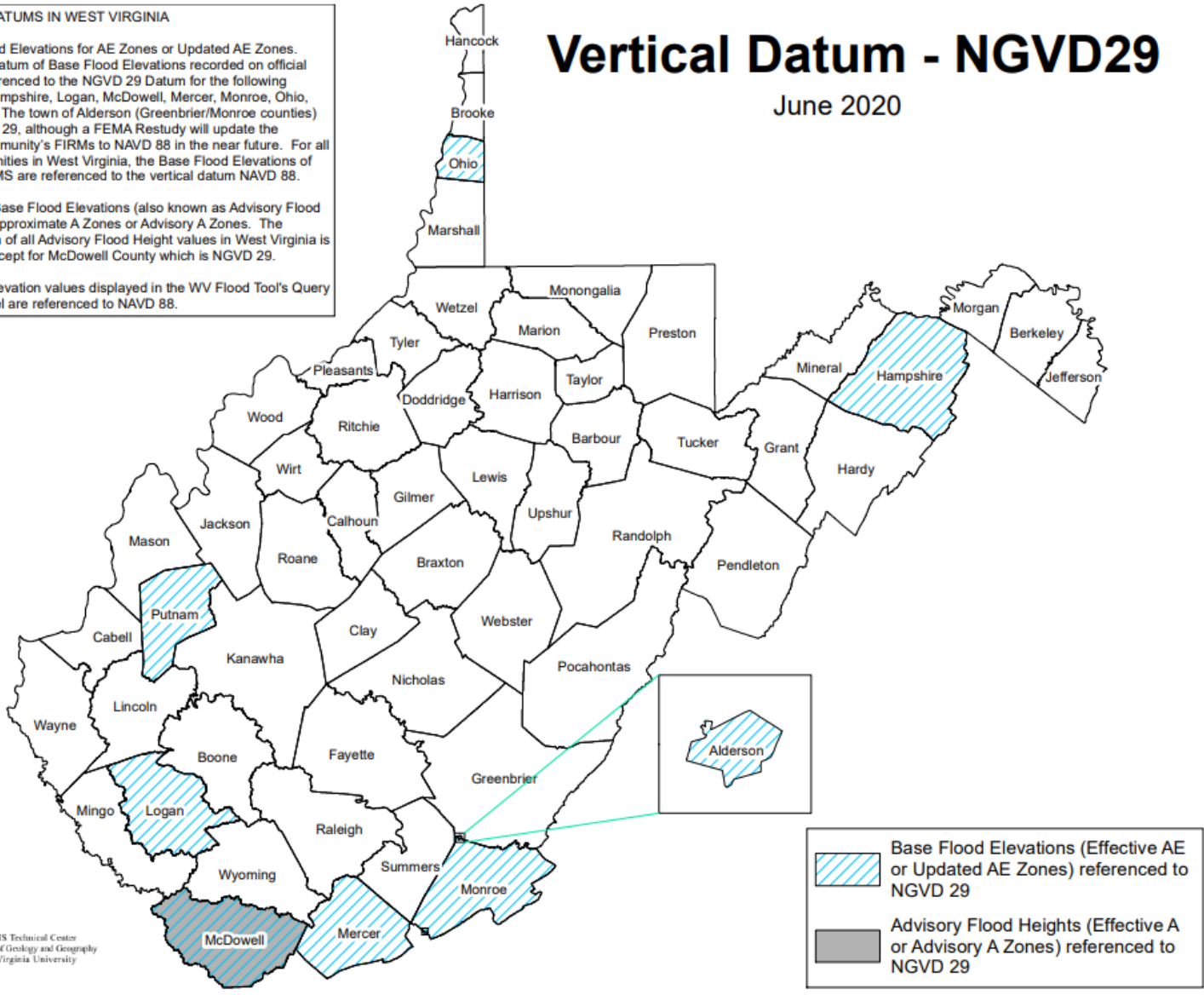
(1) Base Flood Elevations for AE Zones or Updated AE Zones. The vertical datum of Base Flood Elevations recorded on official FIRMs is referenced to the NGVD 29 Datum for the following counties: Hampshire, Logan, McDowell, Mercer, Monroe, Ohio, and Putnam. The town of Alderson (Greenbrier/Monroe counties) is also NGVD 29, although a FEMA Restudy will update the Alderson community's FIRMs to NAVD 88 in the near future. For all other communities in West Virginia, the Base Flood Elevations of effective FIRMS are referenced to the vertical datum NAVD 88.

(2) Advisory Base Flood Elevations (also known as Advisory Flood Heights) for Approximate A Zones or Advisory A Zones. The vertical datum of all Advisory Flood Height values in West Virginia is NAVD 88, except for McDowell County which is NGVD 29.

(3) Ground elevation values displayed in the WV Flood Tool's Query Results Panel are referenced to NAVD 88.

Vertical Datum - NGVD29

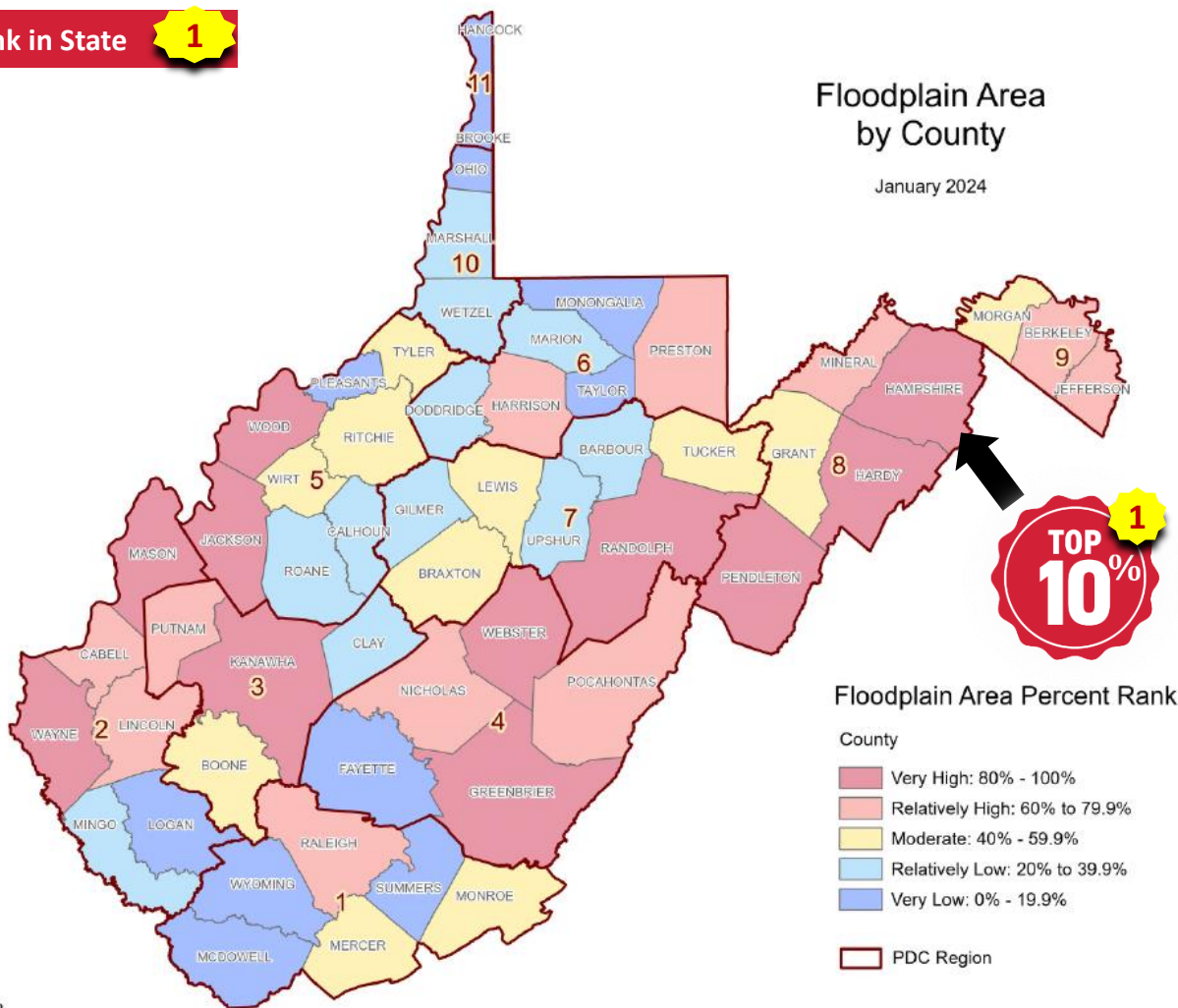
June 2020



Old NGVD 29
Vertical Datum
modernized to
NAVD 88

Risk Indicator: Large Floodplain Area & Length

First Rank in State **1**



WVGISTC 2024-1-22

Data Source: Regulatory Effective 1% annual chance (100-yr) floodplain, or Special Flood Hazard Area (SFHA)

Community	Community Area (acres)	SFHA Area	Ratio of SFHA to Community Area
Hampshire County*	411,510	26,373	6.4%
Capon Bridge	470	179	38.1%
Romney	677	55	8.1

For unincorporated areas and at the county level, it may be more challenging for communities larger in geographic size to enforce their floodplain management ordinance. Often larger jurisdictions have more acres and miles of floodplain extent than compared to smaller communities.

Consequently, larger jurisdictions must be vigilant in monitoring and permitting new development for an expansive geographic area that includes a large amount floodplain area/miles.

Risk Indicator: High Number of Community Assets



Central Hampshire Public Service District
Wastewater Treatment Plant
Highest Non-Hist. CA Value (\$3.0M)
(Building ID: [14-05-0018-0092-0000_251](#))

COMMUNITY	NON-HISTORICAL COMMUNITY ASSETS				Total Non-Historical Community Assets	HISTORICAL COMMUNITY ASSETS		Total Historical Community Assets
	Religious	Government	EMS	Utility		National Register	In Historic Districts Older than 1930	
Hampshire County*	8	5	0	3	16	2	5	7
Capon Bridge	1	1	1	0	3	0	0	0
Romney	0	1	0	0	1	0	0	0

* Unincorporated area

Hampshire County*



Among the community assets in Hampshire Communities, four of them are more vulnerable (in Floodway or Depths \geq 4 ft)



Potomac Edison Augusta Service Center
2nd Highest Non-Hist. CA Value (\$1.4M)
(Building ID: [14-05-0017-0024-0000_18444](#))



Green Spring Assembly of God
Highest Hist. CA Depth (9.1 ft) & Value (\$76K)
(Building ID: [14-10-022B-0062-0000-131](#))



United States Post Office
Highest Hist. CA Depth (9.1 ft) & Value (\$32K)
(Building ID: [14-10-022B-0037-0000-167](#))

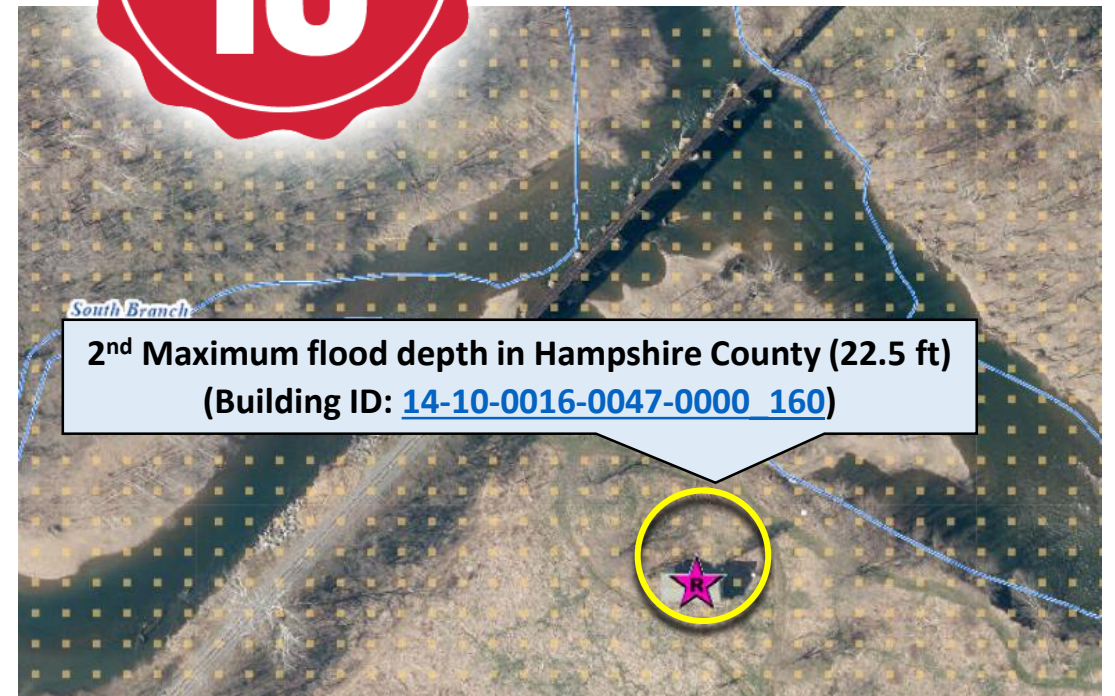
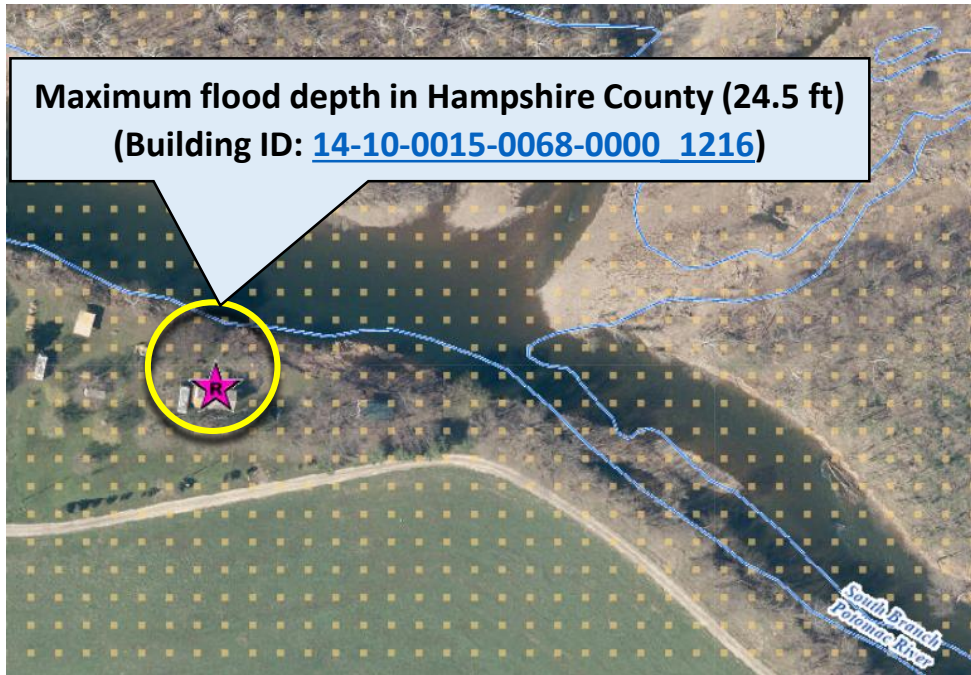
Risk Indicator: High Flood Depths

Community * Unincorporated area	Maximum Flood Depth (Feet)	Median Flood Depth (Feet)
Hampshire County*	24.5	5.1
Capon Bridge	10.2	3.4
Romney	0.1	0.1
	Rank among Unincorporated places: 5	Rank among Unincorporated places: 3

Hampshire County*

Preliminary Floodplain

-  FLOODWAY
-  Zone AE
-  Zone A



Question: Are these primary structures or carports on the South Branch?

Risk Indicator: Higher Number of Recreational Vehicles

Recreational Vehicles

In a Special Flood Hazard Area, a Recreational Vehicle (RV) must:

- Remain on site for fewer than 180 consecutive days, or
- Be fully licensed and ready for highway use; or
- Meet the permitting, elevation, and anchoring requirements for manufactured homes of the community's Flood Damage Prevention Ordinance.

A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick-disconnect type utilities and security devices, and has no permanently attached additions.

RVs that do not meet these conditions must be installed and elevated like a manufactured home, including a permanent foundation and tie-down (See pages 55 and 56).



Important

Information

Camping near the water? Ask the campground or RV Park operator about flood warnings and plans for safe evacuations.

Risk Indicator: High Building Damage Losses

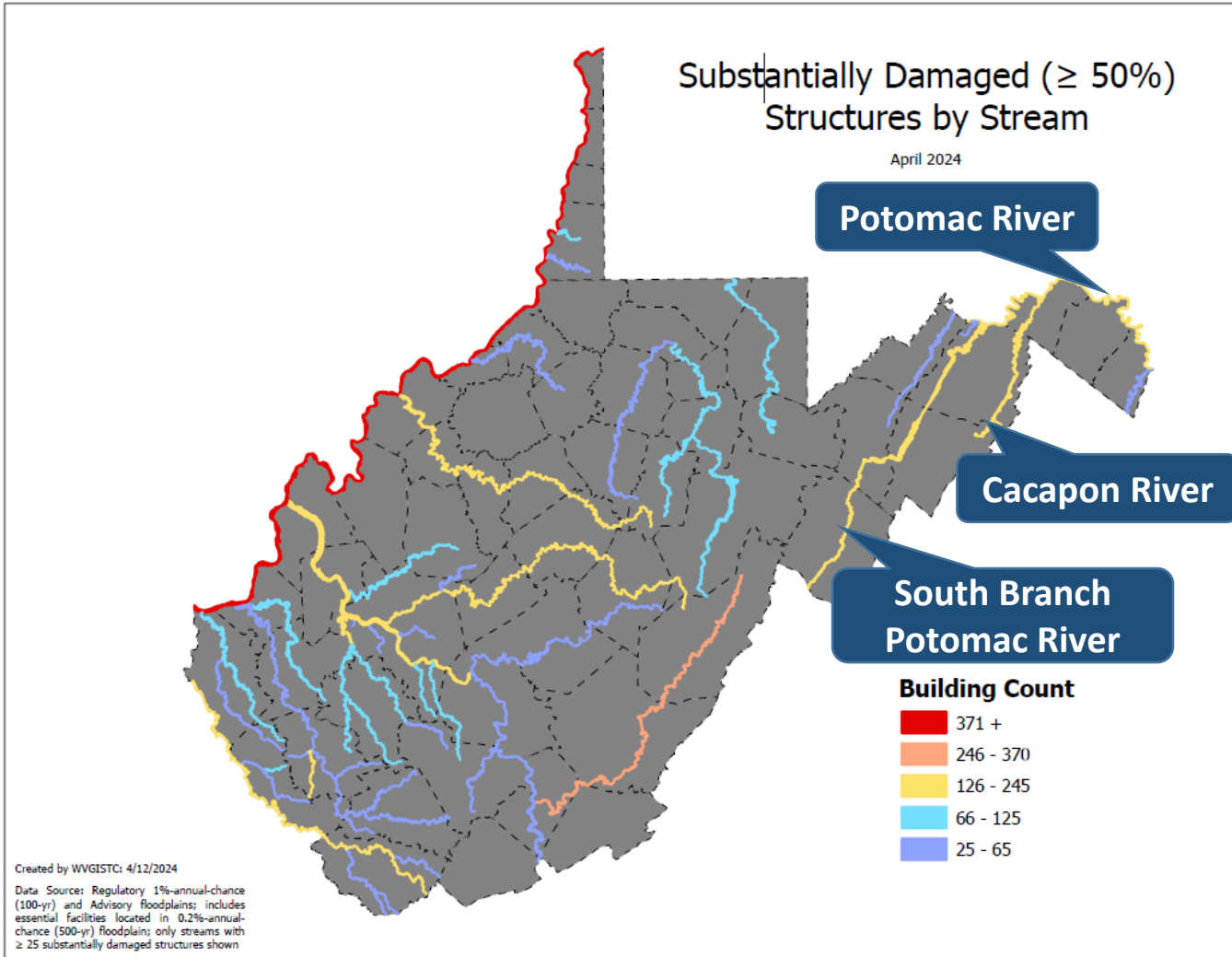
Among Top 10%

Among Top 20%

Rankings done separately for counties, unincorporated areas, and 229 incorporated places

Estimated / Previous Damage	Hampshire County	Hampshire Unincorporated Area	Capon Bridge	Romney	State
Population Residing in Floodplain Ratio	8.9%	9.5%	15.9%	0.1%	11.1%
Displaced Population Ratio	7.2%	7.7%	15.1%	0.1%	6.6%
Population in Need of Short-Term Shelter	290	278	11	1	22,930
WV SVI	48.1%	37.0%	22.0%	68.7%	N/A
Estimated / Previous Damage					
Building Flood Loss Ratio	13.3%	14.0%	5.3%	0.0%	8.6%
Substantial Damage Count	253	251	2	0	6,493
Substantial Damage Count Ratio	35.9%	25.1%	2.4%	0.0%	6.6%
Minus Rated (>1ft) Post-FIRM Count Ratio	15.6%	10.8%	2.4%	0.0%	4.8%
Median Building Damage Value (>= \$1K)	\$13,933	\$14,135	\$9,596	\$67	\$7,657
Total Number of Claims since 1978	335	319	12	4	27,880
Total Paid Claims since 1978	\$5,322K	\$5,017K	\$220K	\$85K	\$368,292K
Number of Repetitive Losses	116	109	7	0	9,716

Risk Indicator: High Damage Loss Estimates



Stream Name	Substantially Damaged Building Count
Ohio River	920
Greenbrier River	368
Kanawha River	243
Potomac River	206
South Branch Potomac River	171
Island Creek	168
Coal River	163
Cacapon River	158
Elk River	158
Tug Fork	136
Little Kanawha River	126
Pond Fork	119
Pocatalico River	110
Cheat River	104
Buckhannon River	100

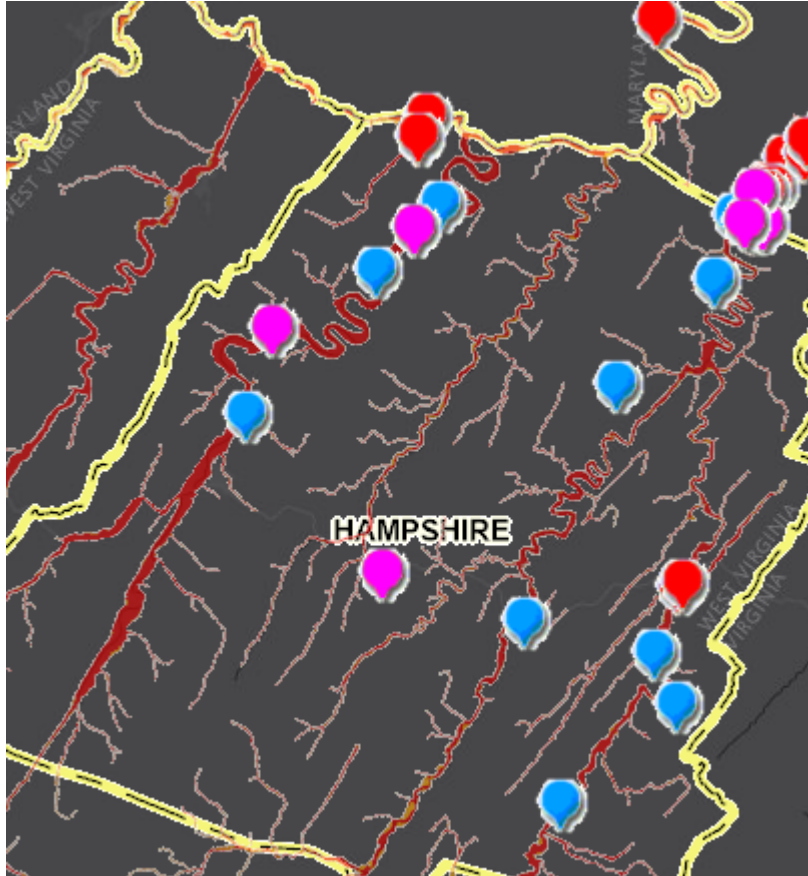
Flood Risk Indicator: **Substantial Damage**

Statewide Stream Scale



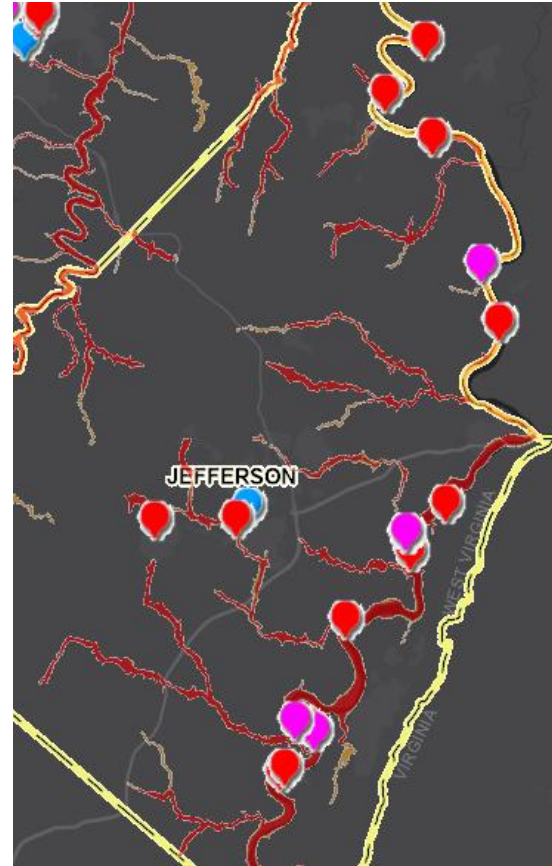
Repetitive Loss Structures (Mapped)

Hampshire County



 **Severe Repetitive Loss**
(Site Address Matched)


Jefferson County



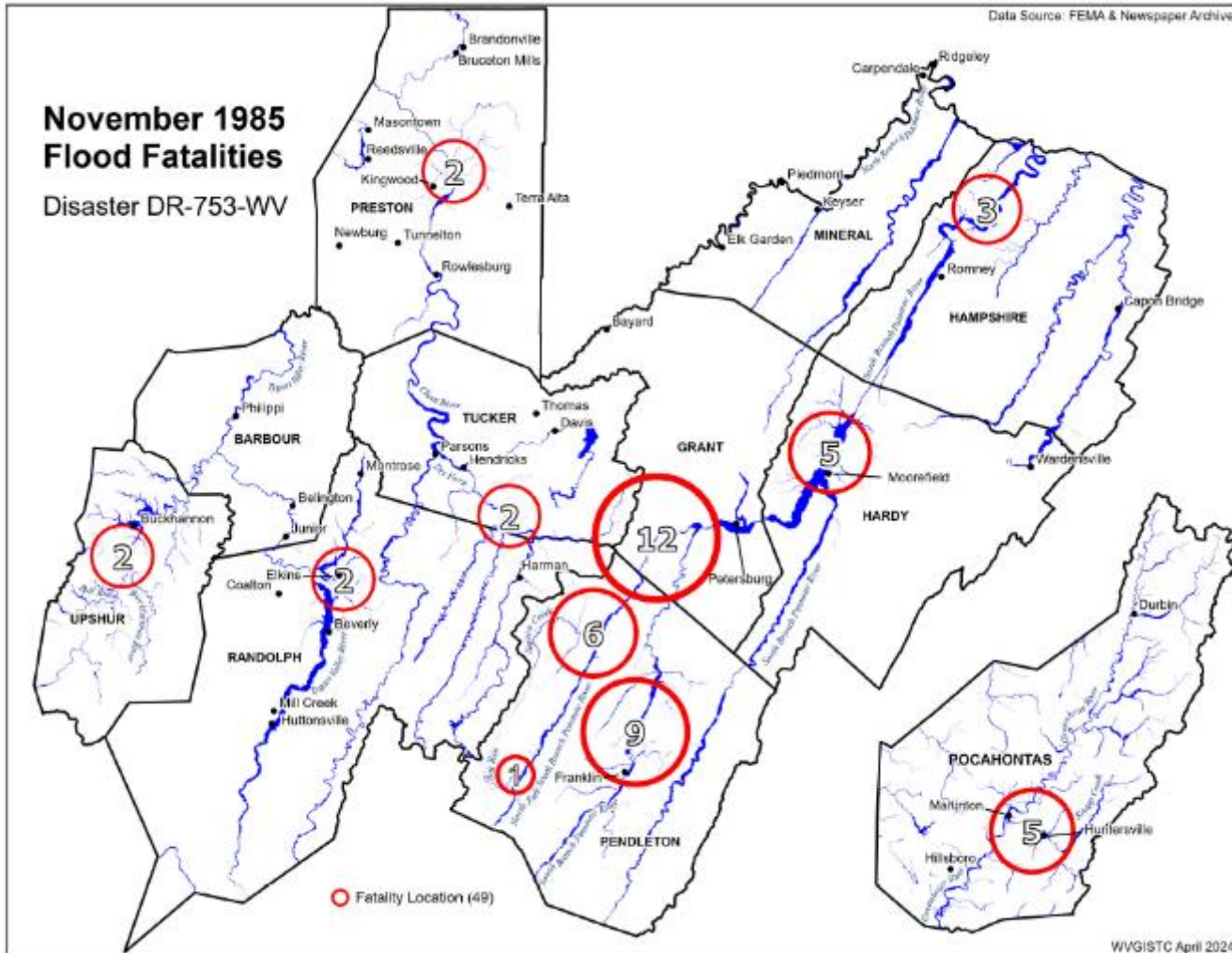
 **Repetitive Loss**
(Site Address Matched)

Marlinton (Pocahontas County)



 **Repetitive Loss**
(Street Address Matched)

Site Hazard Study (South Branch, Springfield)



Missing hunters found drowned near campsite

SPRINGFIELD, W.Va. — The bodies of two local hunters, missing since last Tuesday were found Thursday morning close to their washed-out campsite.

The bodies of C. Leonard Hammond, 49, Clover Hill, Frederick, and Bill McKimney, 42, Waterford, Va., were found about 9:30 a.m. Thursday, West Virginia State Police said.

Hammond, McKimney and Oden, Brunswick, were swept away by flood waters as they attempted to reach their campsite in Hampshire County, W.Va., along the south branch of the Potomac River, reports indicate.

A trooper said the bodies were found about 35 feet apart approximately 1.5 miles south of the campsite. A third body was found about noon Saturday. It also was found south of the campsite, officials said.

The men — members of a local hunting party — were attempting to break camp when a “wall of water” surrounded them as they walked across a field. The men clung to trees and limbs, but gradually all were swept down river. At least two were rescued by helicopter, reports indicate.

Funeral services for Hammond are slated for 10 a.m. Saturday, Nov. 16, at Frederick Funeral Home of Robert E. Dailey & Son, 1201 North Market St.

Funeral services for McKimney will be held at 3 p.m. Saturday, Nov. 16, at Hall Funeral Home, Purcellville, Va.

—Susan C. Nico

West Virginians Start From Scratch And Await State, Federal Aid

ERIC NILER
Record Staff Writer

PETERSBURG, W.Va. — This week has left more than 1,500 county residents and dozens still missing. Officials begin to take effect.

Rock School, near the town of Mouth of Seneca. Similar food and evacuation centers were set up at several Moorefield, W.Va., churches and Petersburg High School.

“We’re not going to clean up overnight,” said Harold Hisner, Grant County relief coordinator. Hisner said an estimated 1,500 Petersburg area residents were displaced by the floods but many more people are still isolated.

“Some people are scattered, living with relatives and friends, but there are many that we’re not aware of and won’t be able to locate for days,” said Hisner.

Twisted wreckage and uprooted trees made Petersburg’s main street look like a mud-encrusted moonscape. More than 100 uniformed National Guard troops from around the state patrolled the downtown Friday and helped rebuilding efforts. County officials said every single downtown-area business was damaged by the flood — an estimated \$30 million loss.

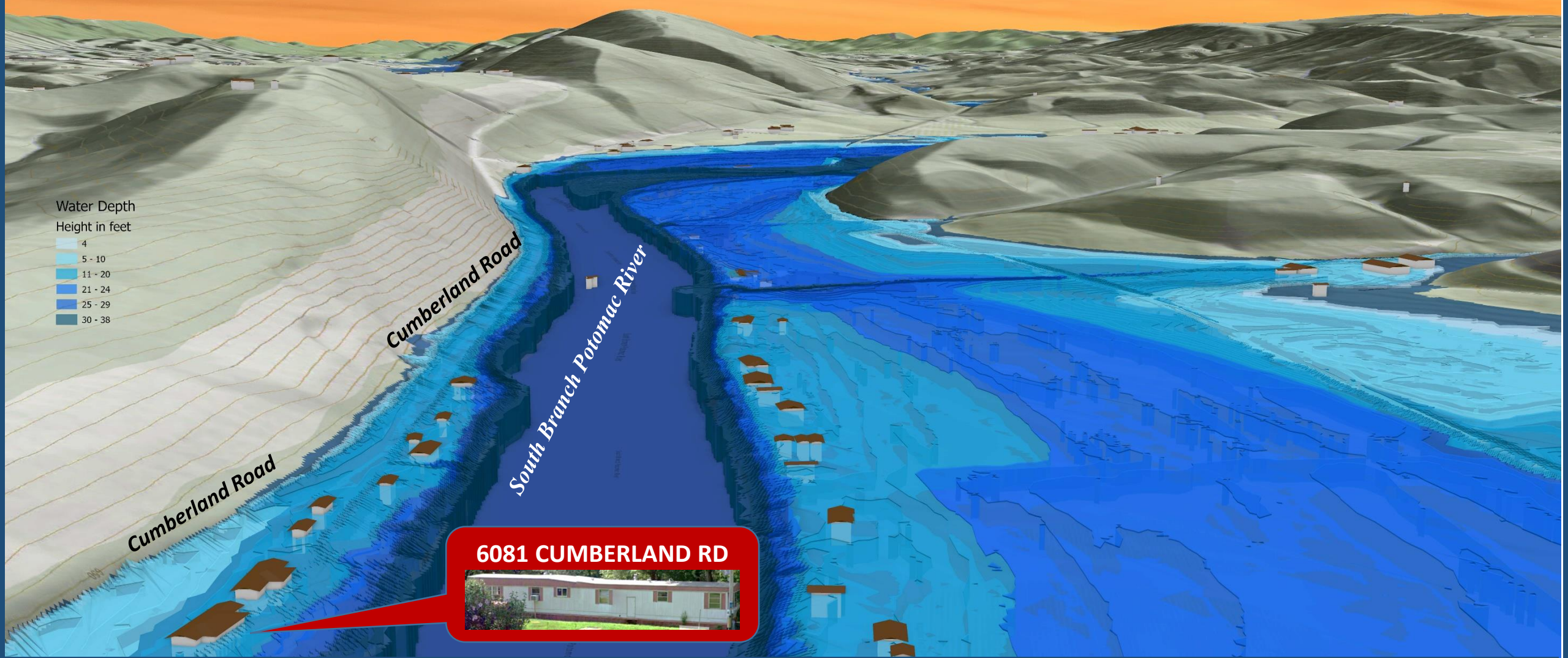
Trailer homes were especially vulnerable to the flood’s destruction and those on low-lying ground near the river were smashed to bits and strewn across otherwise empty fields. In the south end of town, one trailer home was impaled by a tree.

See PETERSBURG, Page 25

3 Hunters Drowned on South Branch

November 1985 Flood (47 fatalities – 3 in Hampshire)

Site Hazard Study (Springfield, WV)



FEMA 1% Annual Chance (100-year)

26% probability of flooding at least once over 30 years

Community Scale Flood Visualization

Site Study: High Flood Depths



Mitigation measures of elevation and wet floodproofing are not economically effective for very deep flood depths greater than 12 ft.

Building Scale (Flood Profile) Visualization

Site Study: High Flood Depth Impact

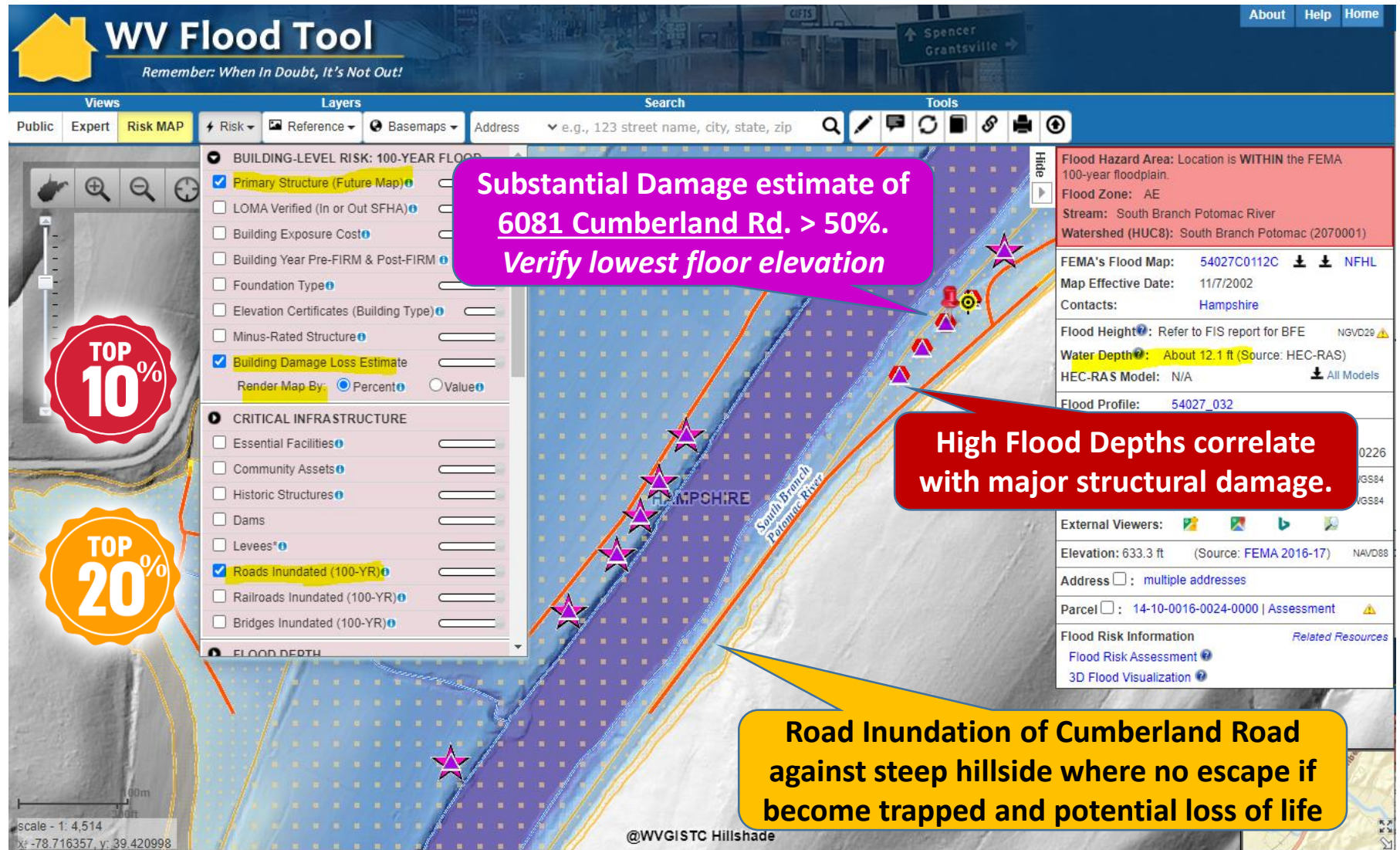
Primary Structures
(n = 757; verify status)

Building Damage
(Top 10%)

Road Inundation
(Top 20%)

Building Damage Estimate (100-YR Flood)

- ▲ 50-100% (Substantial Damage)
- ▲ 10-50% (Moderate Damage)
- ▲ 1-10% (Slight Damage)
- ▲ <1% or No Depth Value



WV Flood Tool's Risk MAP View (property level)

Preload Structures into SDE Software

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

STEP 1: Community preloads **Floodplain Properties** into FEMA's **Substantial Damage Estimator** software



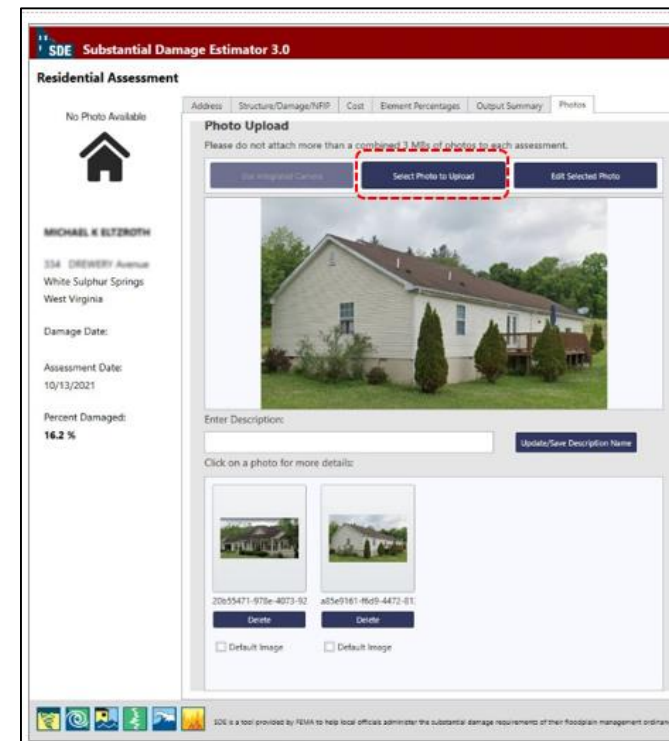
Please Select a Property

Structure Owner Name	Property Address	County/Parish	Parcel Number	Lot Number	Subdivision	Year of Construction
MICHAEL GARFIELD SE...	1836 KROMER Road	Greenbrier	13-04-055E-0010-0000	13-04-055E-0010-0000	Greenbrier County	1960
MICHAEL J HONAKER	381 INGLESDALE Avenue	Greenbrier	13-17-0012-0084-0000	13-17-0012-0084-0000	White Sulphur Springs	1930
MICHAEL J SMITH	156 MAPLE AVE	Greenbrier	13-01-0006-0358-0000	13-01-0006-0358-0000	Alderson	2020
MICHAEL K ELTZROTH	334 DREWERY Avenue	Greenbrier	13-17-0009-0383-0000	13-17-0009-0383-0000	White Sulphur Springs	1918
MICHAEL L ARBOGAST	396 HATFIELD HOLLID...	Greenbrier	13-02-0029-0022-0001	13-02-0029-0022-0001	Greenbrier County	1991
MICHAEL LEE ET ALS B...	6896 TUCKAHOE RD	Greenbrier	13-16-0036-0002-0000	13-16-0036-0002-0000	Greenbrier County	1972
MICHAEL LEE ET ALS B...	0 TUCKAHOE Road	Greenbrier	13-16-0036-0002-0000	13-16-0036-0002-0000	Greenbrier County	1972
MICHAEL PAUL TRAINER	156 95TH Avenue	Greenbrier	13-02-0358-0067-0000	13-02-0358-0067-0000	Greenbrier County	1990
MICHAEL ROBERT ET AL...	349 GREENBRIER Aven...	Greenbrier	13-17-0011-0037-0000	13-17-0011-0037-0000	White Sulphur Springs	1957
MICHAEL SCOTT HILL	691 RED ROCK Trail	Greenbrier	13-06-0019-0061-0000	13-06-0019-0061-0000	Greenbrier County	1999
MICHAEL TOLLEY	324 RIVER EDGE Lane	Greenbrier	13-06-024D-0003-0000	13-06-024D-0003-0000	Greenbrier County	1987
MICHAEL W BRACKENH...	310 MILL CREEK Road	Greenbrier	13-11-055C-0070-0000	13-11-055C-0070-0000	Greenbrier County	1900
MICHAEL W CARRANST...	252 HOLMES Lane	Greenbrier	13-17-0012-0021-0001	13-17-0012-0021-0001	White Sulphur Springs	1999
MICHAEL W CARRANST...	282 HOLMES Lane	Greenbrier	13-17-0012-0047-0000	13-17-0012-0047-0000	White Sulphur Springs	1999
MICHAEL W SIMS	429 6TH Street	Greenbrier	13-13-0005-0490-0000	13-13-0005-0490-0000	Rainelle	1975
MICHAEL W SHOCKEY	274 MOUNTAIN Avenue	Greenbrier	13-17-0009-0383-0000	13-17-0009-0383-0000	White Sulphur Springs	1921
MICHAEL WARD	267 LITTLE CREEK Road	Greenbrier	13-02-004D-0028-0000	13-02-004D-0028-0000	Greenbrier County	1970
MICHELE A DIRCH	153 WOODLAND Ave...	Greenbrier	13-17-0011-0011-0000	13-17-0011-0011-0000	White Sulphur Springs	1964
MICHELE L ORENENEN	191 MEADOW RIVER...	Greenbrier	13-11-055F-0039-0000	13-11-055F-0039-0000	Greenbrier County	1973

Preload using default values.

Hampshire County has 1,111 Structures (both effective and preliminary floodplains) that can be uploaded

STEP 2: Community performs practice **Substantial Damage Assessments** for Residential and Non-Residential Properties



[SDE Upload Files and Instructions](#)

Verify Building Risk Assessments

Verify
Primary
Structures
for High
Depths

Use **Building-Level (BL) Tables** to identify **Most Vulnerable Structures**

- [Statewide BLRA \(GIS\)](#)
- [BLRA County Tables](#) organized by region
- [BLRA Data Extract Tables](#): High Building Value, High Damage Loss, **High Minus Ratings**
- [BLRA Statewide Top Lists](#): Building Value, Flood Depth, Damage Loss \$, Damage Loss %, Minus Rated, Mitigated Structures
- [Risk Indicator Matrices](#): Exposure and Damage Loss Matrices of Risk Indicators

Verify
Mitigation
Status of
Post-FIRM
Structures

Verify
Lowest
Floor
Elevations

Verify
Foundation
& Basement
Types



Publish
Elevation
Certificates
to WV Flood
Tool

Plan for Inundated Road Impacts

Why Water Depth Matters



~1 Foot

Response focused on those who need additional assistance



~3 Feet

Near the limit to use High Profile Vehicles to perform high water rescues



~6 Feet

Boats and helicopters now required to perform high water rescues



~9 Feet

1st Floors completely inundated

“How many helicopters, boats, and high profile vehicles and where to send them”

– Texas State Operations Center

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