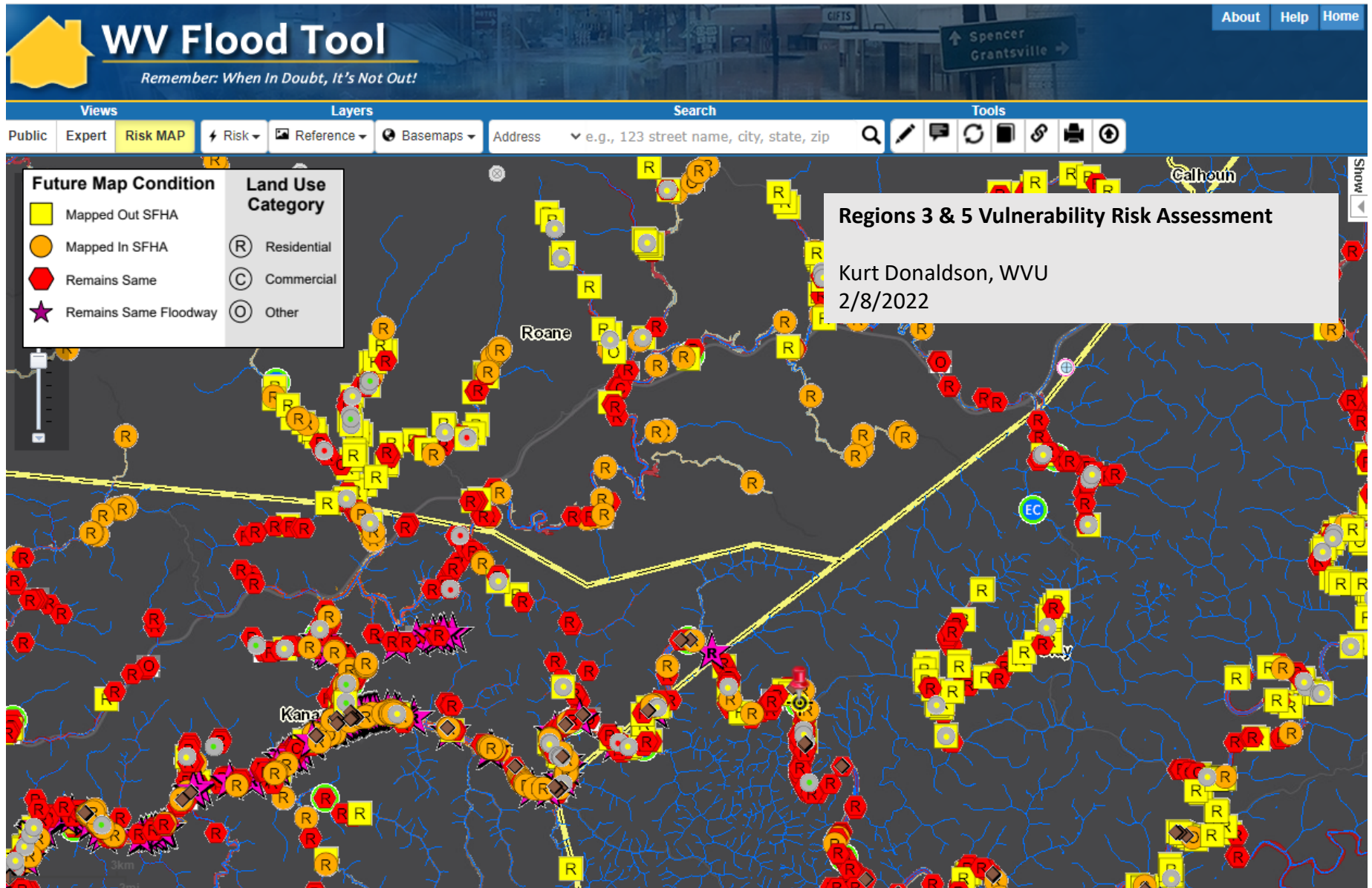


Regions 3 & 5 Flood Risk Assessment



Access Risk Assessment Info

Use the [Risk Information Index](#) to access Data and Products

Risk Assessment Information Index

1/28/2022

[Data Field Descriptions](#)

Risk Assessment or Mitigation Layer	REPORT	Key Variable	Community Level (CL)		Building Level (BL) or Feature Level (FL)					
			Table	Graphic	Table	Community Extract	State Extract	Graphic	GIS	
FLOOD ZONE MAPS & STUDIES										
Flood Zone Breakdown by Length and Area		Zone Length and Area	CL	Yes						GIS
Active Flood Studies and Mapping			CL	Yes	Yes					
Model-Backed AZones		Info Sheet	CL	Yes						
FLOODPLAIN BUILDING INVENTORY AND FUTURE MAP CONDITIONS (What at-risk structures are in floodplain?)										
Primary Buildings in High-Risk Effective and Advisory Floodplains - Future Map Conditions		Flood Zone Type	CL	Yes	Yes	BLRA				GIS
Verified LOMA Properties Removal Status. Future SFHA Status.		SFHA Status	CL	Yes		BL				GIS
Buildings by Stream Name (Flood Source). Community and stream summaries.		Stream Name	CL	Yes		BLRA	FL	Top List	Yes	GIS
SIGNIFICANT STRUCTURES OF IMPORTANCE										
Essential Facilities (0.2% floodplain)	RPT	Facility Type	CL		Yes	BL EC				GIS
Community Assets	RPT	Facility Type	CL	Yes	Yes	BL CA				GIS
Historical Community Assets - National Register Areas	RPT	Register Area	CL			NRA				GIS
FLOODPLAIN BUILDING CHARACTERISTICS										
Building Exposure Dollar Value	RPT	Building Appraisal, Occupancy	CL	Yes	Yes	BLRA	High Value (Top 10%)	Top 100	Yes	GIS
Building Single Family (RES1)		Single Family RES1	CL	Yes	Yes	BLRA		Top 100	Yes	GIS
Building Manufactured Homes (RES2)		Mobile Home RES2	CL	Yes	Yes	BLRA		Top 100		GIS
Building Year and FIRM Status (Pre-FIRM/Post-FIRM)		Initial FIRM Date, Building Year	CL	Yes		BLRA				GIS
Building Median Value		Median Value	CL	Yes	Yes	BLRA				GIS
Building Median Year		Building Year	CL	Yes		BLRA				GIS
Foundation Type and Basement		Foundation Type				BLRA				GIS
FLOOD DAMAGE LOSS ESTIMATES (1% FLOOD EVENT) (What is degree of Flood Risk?)										

Building Level Risk Assessment (BLRA) Products

- **GIS Files**
- **Tables (Excel)**
 - Community Level (CL)
 - Building (or Feature) Level (BL) with links to online maps
 - Table Extracts
 - Top Lists
- **Maps**
 - Interactive Web Maps
 - Graphics and Maps
- **Reports (Word Docs)**
- **3D Flood Visualizations**

Most of the risk assessment data can be viewed on the **RiskMAP View** of the [WV Flood Tool](#)

WV Building-Level Flood Risk Assessment

Building-Level Flood Risk Assessments support:

- Hazard Mitigation Plans
- Floodplain Management
- Community Assisted Visits
- Community Rating System

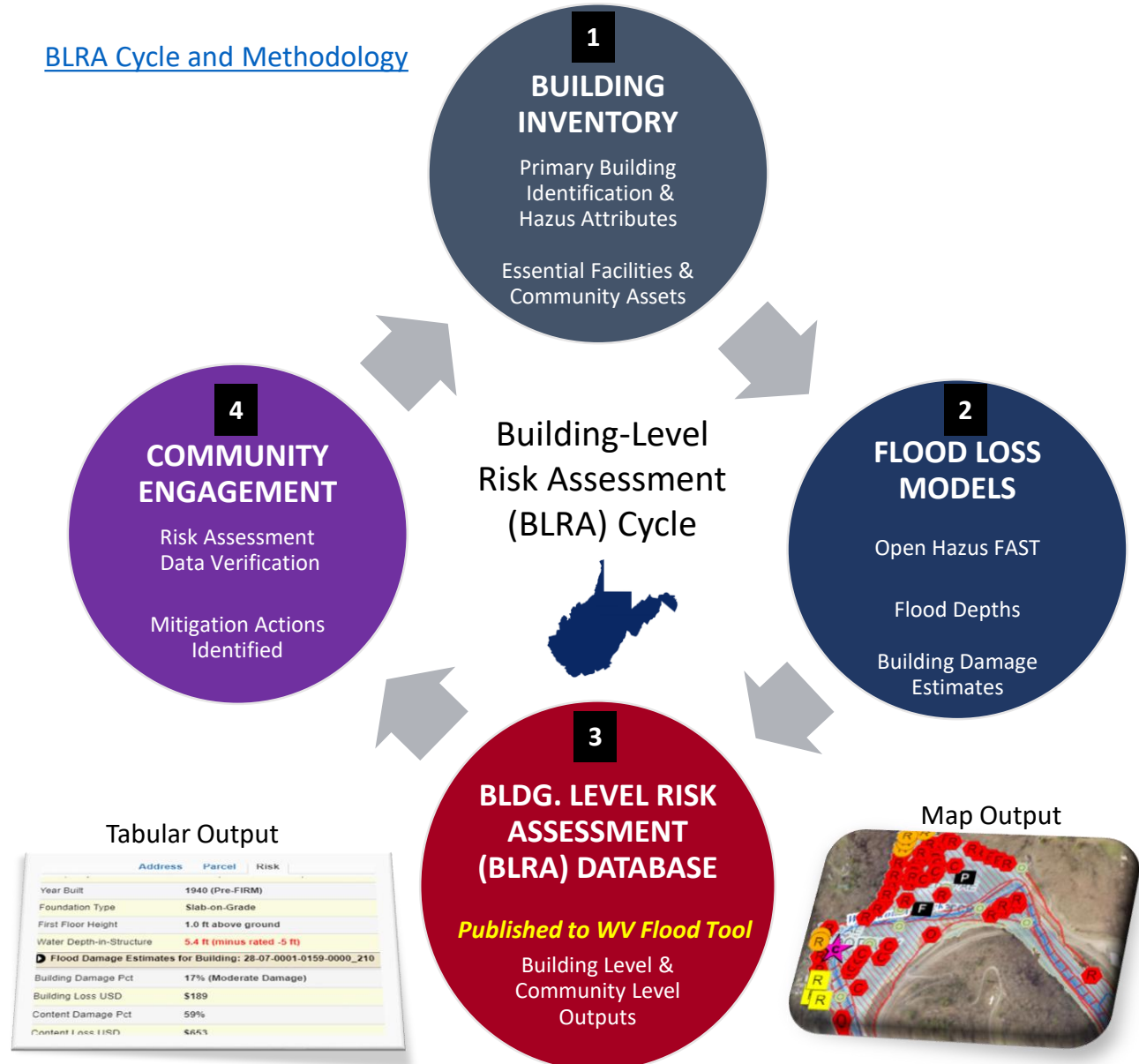
Benefits

- More detailed and accurate assessments
- Automated scripts generate outputs quickly
- Cost savings through efficiencies
- Helps multiple stakeholders
- Comprehensive Building Risk Spatial Database

Methodology

- Consistent methodology statewide
- Semi-automated workflows
- Continuous cycle to improve and update assessments

BLRA Cycle and Methodology



WV 268 Flood-Prone Communities

11 Regional Planning & Development Councils (55 Counties)

Region 4 has 26 Flood-Prone Communities in the National Flood Insurance Program

Region	# Counties	# Communities	Split Communities across County Boundary	Communities not participating in NFIP or no SFHA	# NFIP Communities ¹
Region 1 ²	6	32		Athens, Union	30
Region 2	6	31	Huntington		31
Region 3	4	29	Nitro		29
Region 4	5	31	Alderson, Montgomery, Smithers	Fayetteville ³ , Hillsboro, Lewisburg, Quinwood ³ , Thurmond	26
Region 5	8	30	Paden City	North Hills	29
Region 6	6	45		Brandonville, Tunnelton, White Hall	42
Region 7	7	31		Flatwoods	30
Region 8	5	17		Carpendale, Elk Garden	15
Region 9	3	12		Hedgesville	11
Region 10	3	18	Wheeling	Bethlehem, Clearview	16
Region 11	2	10	Weirton	Windsor Heights	9
<i>total</i>	55	286	8	18	268

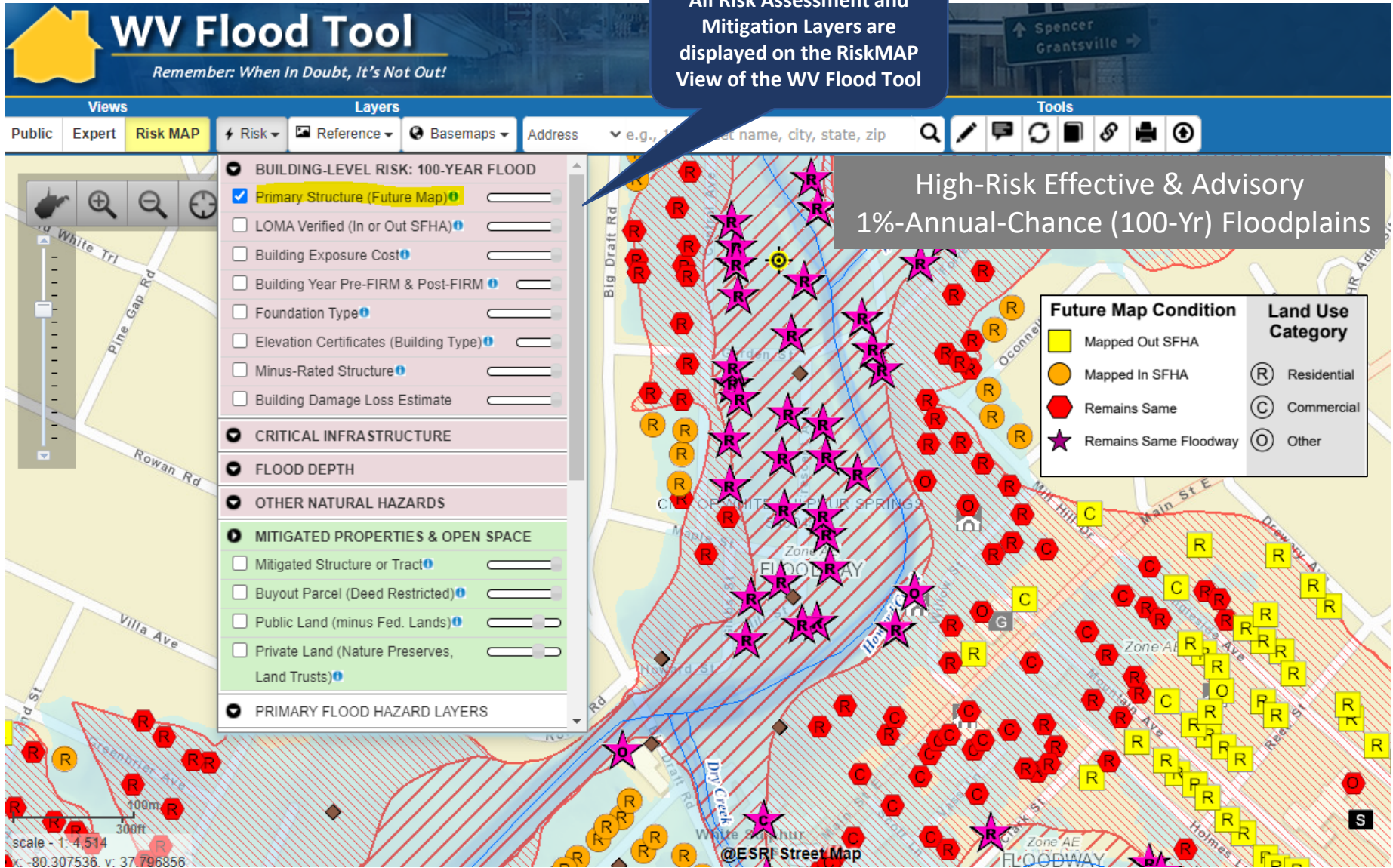
¹ Source: FEMA's Community Status Source Book

² Region 1 dissolved community of Rhodell (Raleigh County) included in NFIP count. Town of Matoaka (Mercer County) is not included.

³ Communities include SFHA or non-regulatory floodplain

Split Communities **Alderson, Montgomery** and **Smithers** are members of **Region 4**
 Split Community **Paden City** is a member of **Region 5**

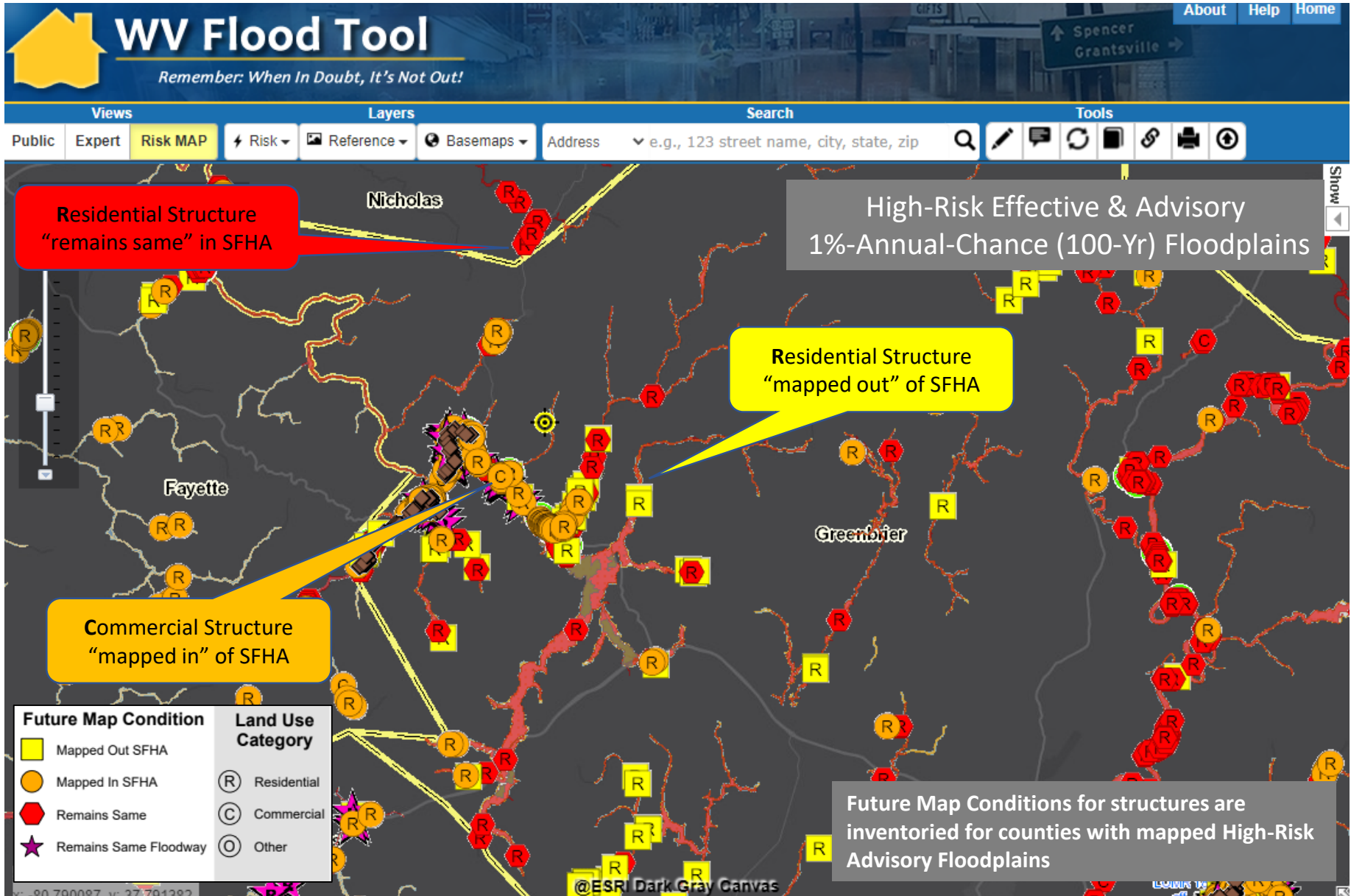
Floodplain Building-Level Risk



All Risk Assessment and Mitigation Layers are displayed on the RiskMAP View of the WV Flood Tool

High-Risk Effective & Advisory
1%-Annual-Chance (100-Yr) Floodplains

Building Future Map Conditions



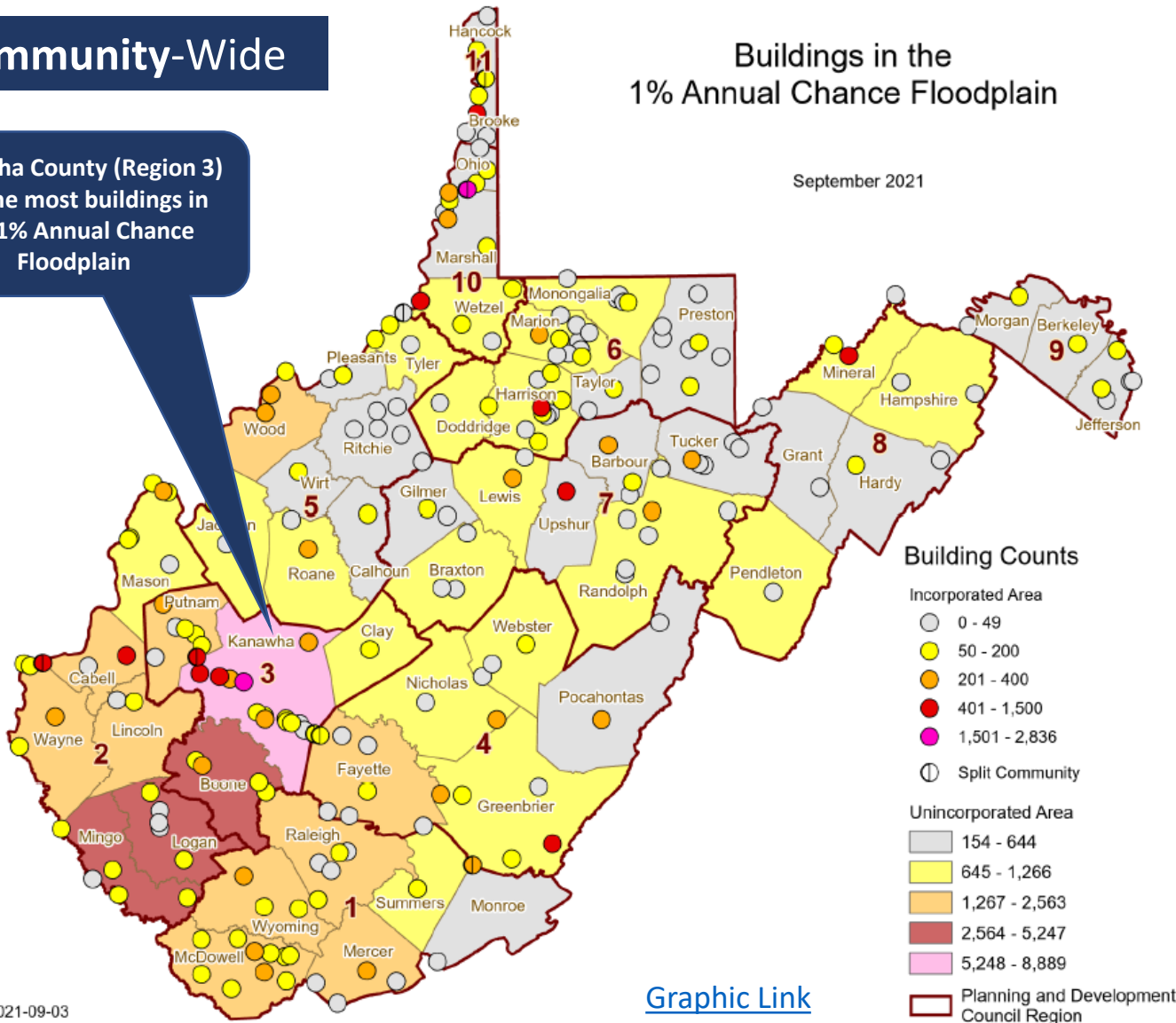
Buildings in 1% Floodplain

Community-Wide

Kanawha County (Region 3) has the most buildings in the 1% Annual Chance Floodplain

Buildings in the 1% Annual Chance Floodplain

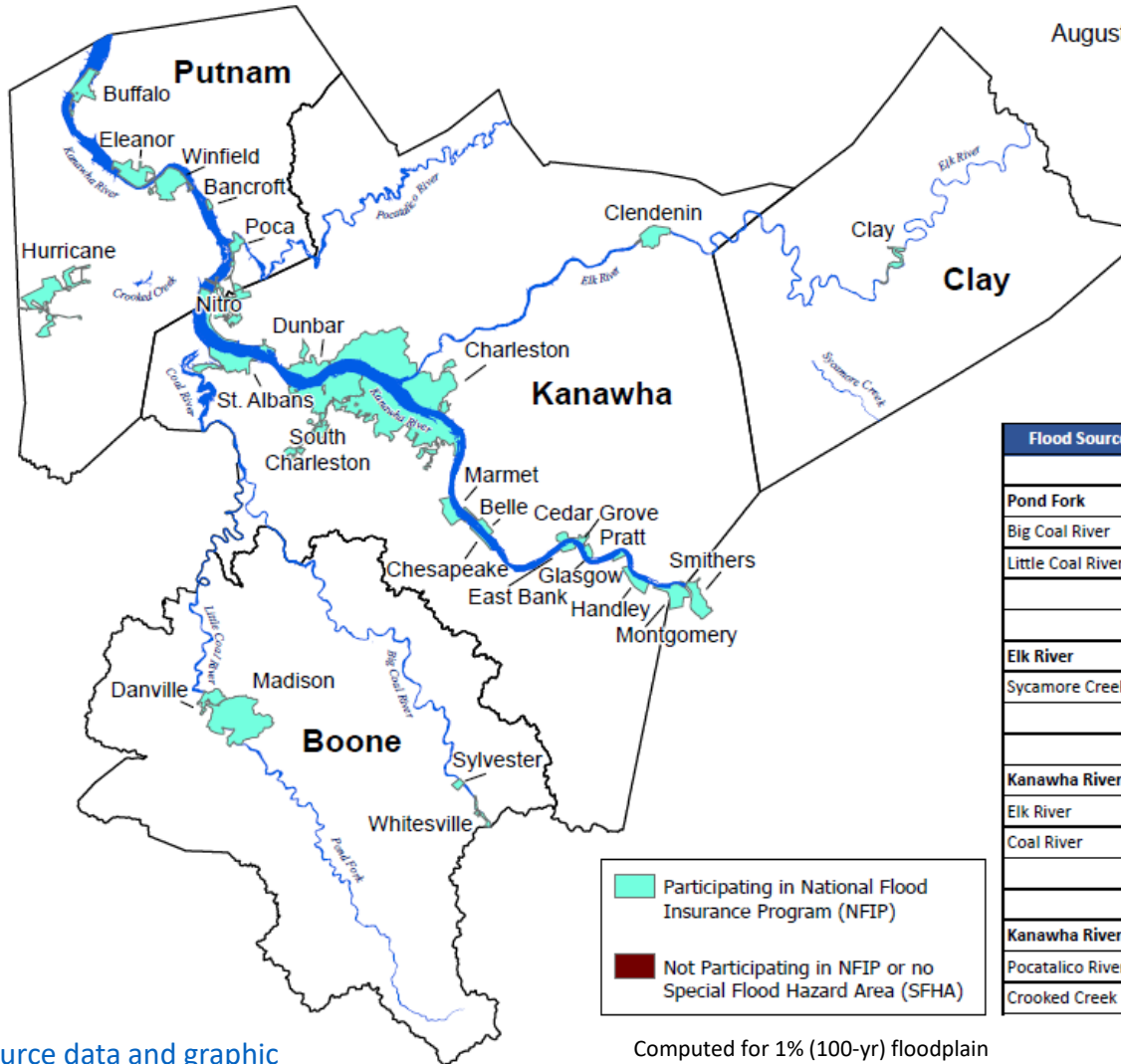
September 2021



Building Risk by Flood Source

Region 3 Communities

August 2021



■ Participating in National Flood Insurance Program (NFIP)
■ Not Participating in NFIP or no Special Flood Hazard Area (SFHA)

Flood Source	Building Count	Dollar Exposure (\$)
BOONE COUNTY		
Pond Fork	951	\$58,780K
Big Coal River	868	\$54,011K
Little Coal River	427	\$49,402K
CLAY COUNTY		
Elk River	493	\$35,817K
Sycamore Creek	91	\$3,158K
KANAWHA COUNTY		
Kanawha River	5,277	\$1,186,012K
Elk River	1,320	\$143,532K
Coal River	844	\$69,400K
PUTNAM COUNTY		
Kanawha River	1,261	\$430,838K
Pocatalico River	309	\$21,728K
Crooked Creek	189	\$26,224K

[Source data and graphic](#)

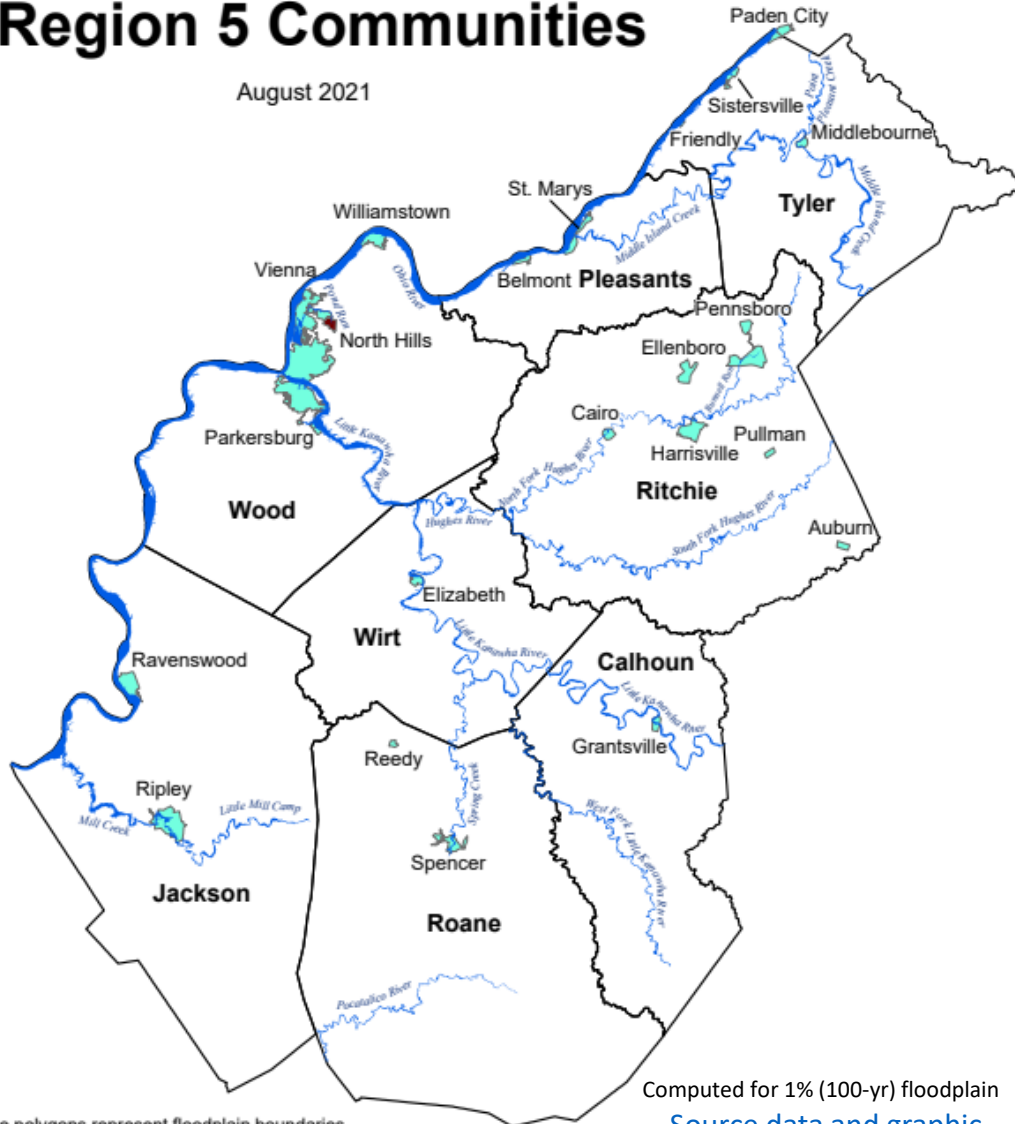
Computed for 1% (100-yr) floodplain

WVGISTC 13 August 2021

Building Risk by Flood Source

Region 5 Communities

August 2021



■ Participating in National Flood Insurance Program (NFIP)
■ Not Participating in NFIP or no Special Flood Hazard Area (SFHA)

Flood Source	Building Count	Dollar Exposure (\$)
CALHOUN COUNTY		
Little Kanawha River	298	\$16,189K
West Fork Little Kanawha River	123	\$5,365K
JACKSON COUNTY		
Ohio River	306	\$27,954K
Mill Creek	84	\$7,069K
Little Mill Creek	43	\$8,404K
PLEASANTS COUNTY		
Ohio River*	269	\$25,011K
Middle Island Creek	74	\$2,954K
RITCHIE COUNTY		
South Fork Hughes River	96	\$2,937K
North Fork Hughes River	58	\$2,597K
Bunnell Run	39	\$3,233K
ROANE COUNTY		
Spring Creek	255	\$30,627K
Pocatalico River	67	\$10,463K
TYLER COUNTY		
Ohio River	266	\$16,861K
Middle Island Creek	182	\$8,694K
Point Pleasant Creek	44	\$8,195K
WOOD COUNTY		
Little Kanawha River	354	\$68,279K
Pond Run Upper Reach	339	\$85,323K
Ohio River	323	\$30,130K
WIRT COUNTY		
Little Kanawha River	253	\$16,613K
Hughes River	110	\$3,424K

**Blue polygons represent floodplain boundaries

Computed for 1% (100-yr) floodplain
[Source data and graphic](#)

*Includes \$8.7M industrial structure at confluence of Ohio River and Bull Creek

WVGISTC 17 August 2021

Building Risk Reports

Incorporate information from Risk Assessment Reports into local hazard mitigation planning



Residential
Home



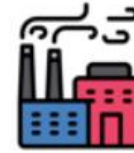
Residential
Manufactured Home



Residential
Apartment



Non-Residential
Commercial



Non-Residential
Industrial



Non-Residential
Other

Regions 3 & 5 [Building Types & Exposure](#)



Police Station



Fire Station



E-911 Dispatch



School



Hospital



Nursing Home

Regions 3 & 5 [Essential Facilities Report](#)



Religious
Organization



Educational
Building



Emergency Medical
Services



Government
Building



Utility



National Register
Historical Structure

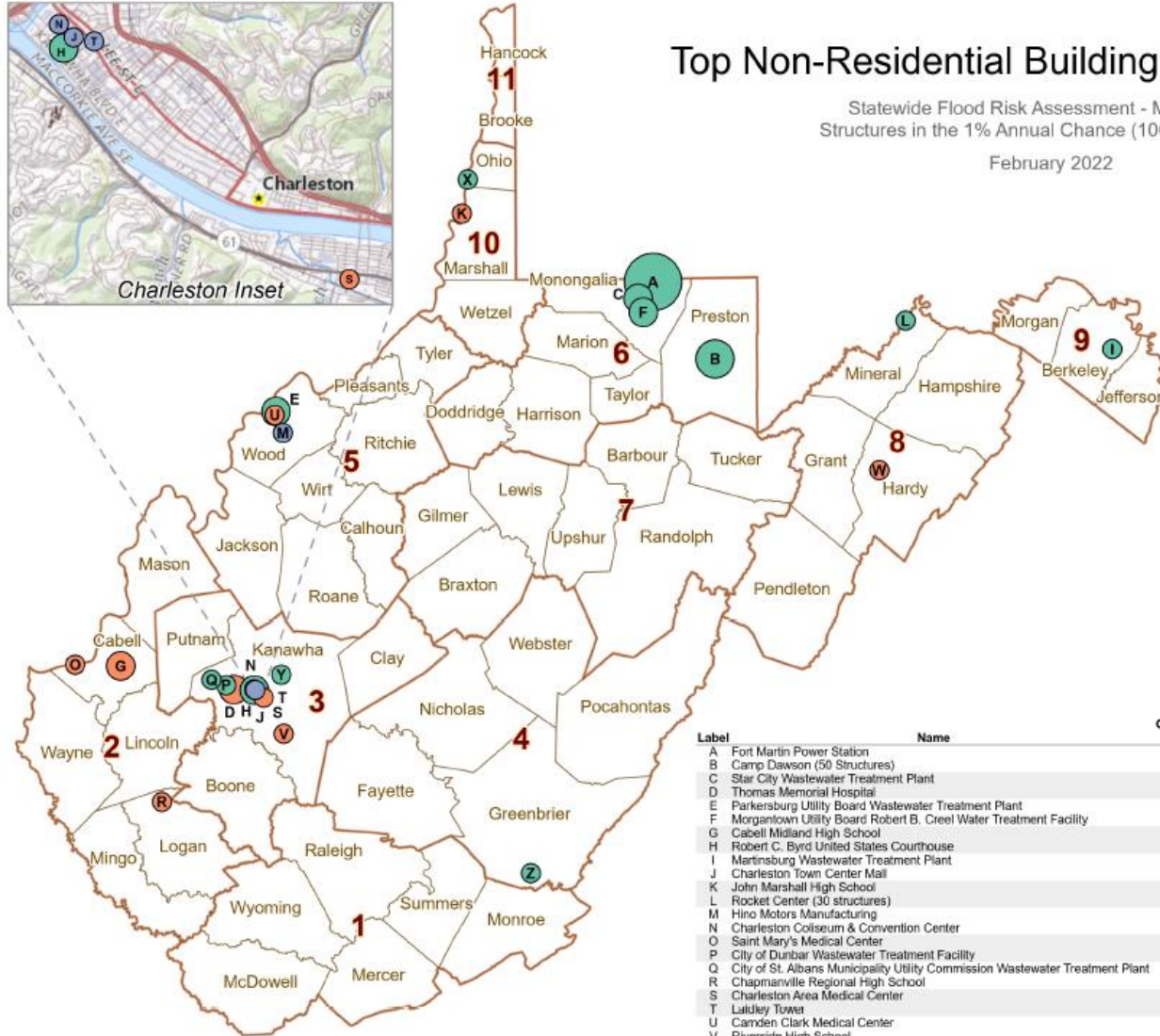
Regions 3 & 5 [Community Assets Report](#)

Non-Residential Building Exposure

Top Non-Residential Building Dollar Exposure

Statewide Flood Risk Assessment - Multimillion \$
Structures in the 1% Annual Chance (100-yr) Floodplain

February 2022



Building \$ Exposure

Building Type

- Essential Facility
High schools, Hospitals
- Community Asset
Universities, Government
- Other
Commercial, Industry

Exposure Magnitude

- ≥ \$24M
- ≥ \$53M
- ≥ \$103M
- \$800M

Label	Name	Occupancy Class	County	Value	Source
A	Fort Martin Power Station	COM4	MONONGALIA	\$800M	Other
B	Camp Dawson (50 Structures)	GOV1	PRESTON	\$276M	Tax
C	Star City Wastewater Treatment Plant	GOV1	MONONGALIA	\$102M	Other
D	Thomas Memorial Hospital	COM6	KANAWHA	\$97M	Tax
E	Parkersburg Utility Board Wastewater Treatment Plant	GOV1	WOOD	\$69M	Other
F	Morgantown Utility Board Robert B. Creel Water Treatment Facility	GOV1	MONONGALIA	\$64M	Other
G	Cabell Midland High School	EDU1	CABELL	\$61M	BRIM
H	Robert C. Byrd United States Courthouse	GOV1	KANAWHA	\$58M	Tax
I	Martinsburg Wastewater Treatment Plant	COM4	BERKELEY	\$52M	Tax
J	Charleston Town Center Mall	COM1	KANAWHA	\$44M	Tax
K	John Marshall High School	EDU1	MARSHALL	\$41M	BRIM
L	Rocket Center (30 structures)	IND2	MINERAL	\$40M	Tax
M	Hino Motors Manufacturing	IND2	WOOD	\$38M	Tax
N	Charleston Coliseum & Convention Center	COM8	KANAWHA	\$30M	Tax Modified
O	Saint Mary's Medical Center	COM6	CABELL	\$30M	Tax
P	City of Dunbar Wastewater Treatment Facility	GOV1	KANAWHA	\$29M	Other
Q	City of St. Albans Municipality Utility Commission Wastewater Treatment Plant	GOV1	KANAWHA	\$28M	Other
R	Chapmanville Regional High School	EDU1	LOGAN	\$28M	BRIM
S	Charleston Area Medical Center	COM7	KANAWHA	\$27M	Tax
T	Laidley Tower	COM4	KANAWHA	\$26M	Tax Modified
U	Camden Clark Medical Center	COM6	WOOD	\$25M	Tax
V	Riverside High School	EDU1	KANAWHA	\$25M	Tax
W	Moorefield High School	EDU1	HARDY	\$24M	Tax
X	Wheeling Water Pollution Control Plant	GOV1	OHIO	\$24M	Other
Y	Elk Valley Public Service District Wastewater Treatment Plant	GOV1	KANAWHA	\$24M	Other
Z	Ronovertte Wastewater Treatment Plant	GOV1	GREENBRIER	\$24M	Other

Building Level Risk Assessment (BLRA)

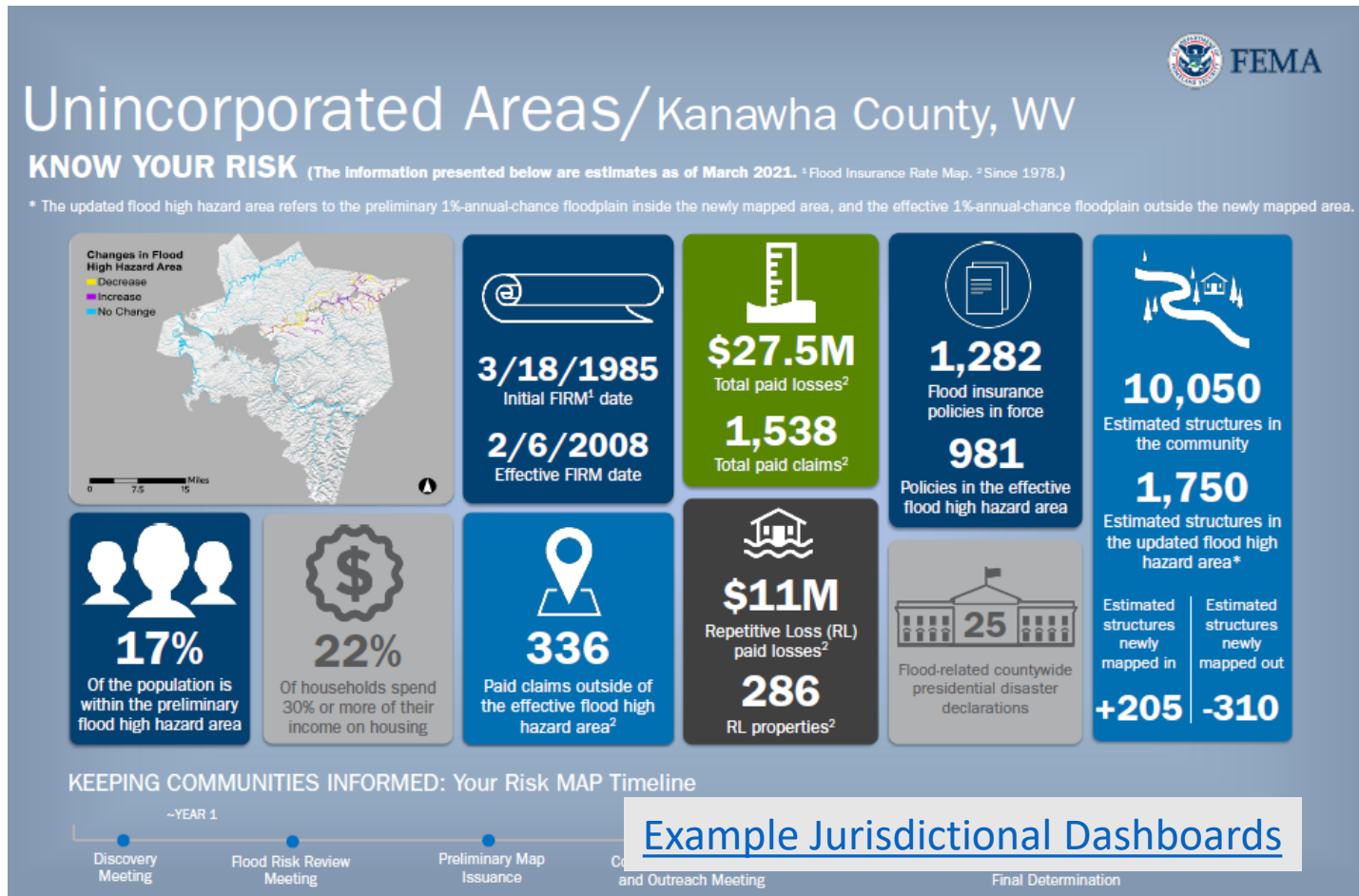
Use **Building-Level (BL) Tables** to identify **Most Vulnerable Structures**

- [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



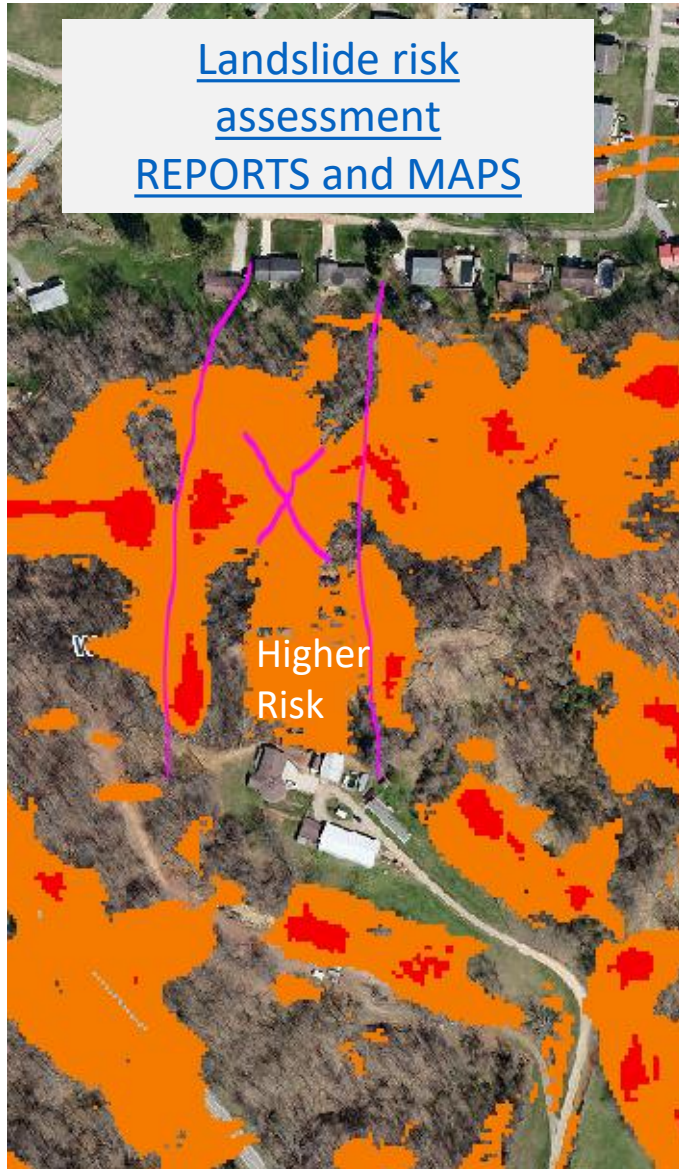
Community Level Risk Profiles

Use **Community-Level (CL) Tables**
to supplement FEMA's Jurisdictional Flood Risk Dashboards



Refer to the [Risk Matrices](#) EXPOSURE and DAMAGE LOSS to develop community risk profiles

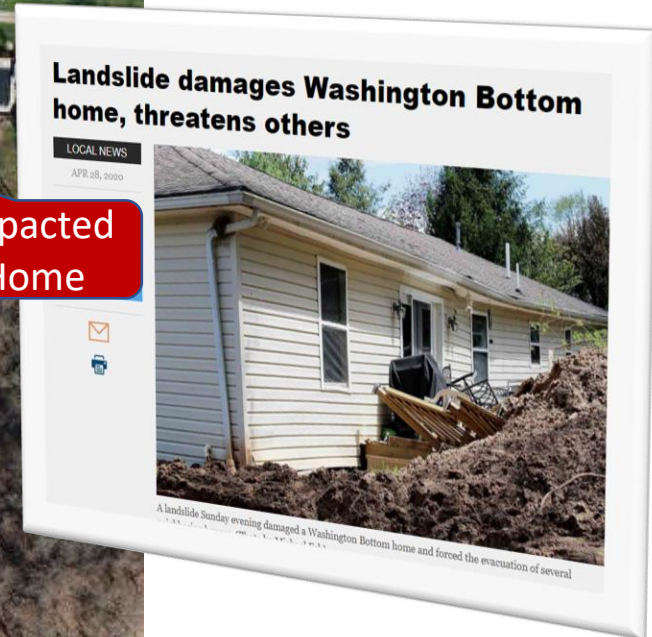
Landslide Susceptibility Maps



Landslide Susceptibility



Spring 2020 Aerial Imagery



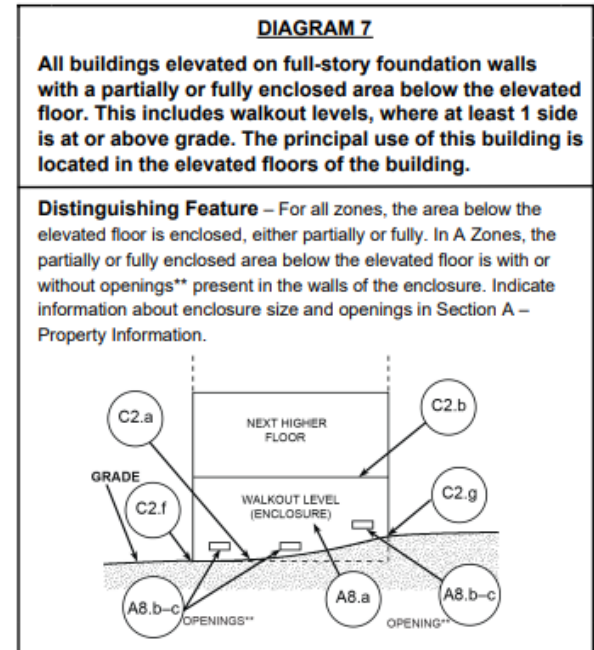
April 2020
Landslide

Wood County

*Impacted home
moved from
foundation*

Example Mitigated Structure

Elevated Building on Solid Foundation Walls (Full-Story)



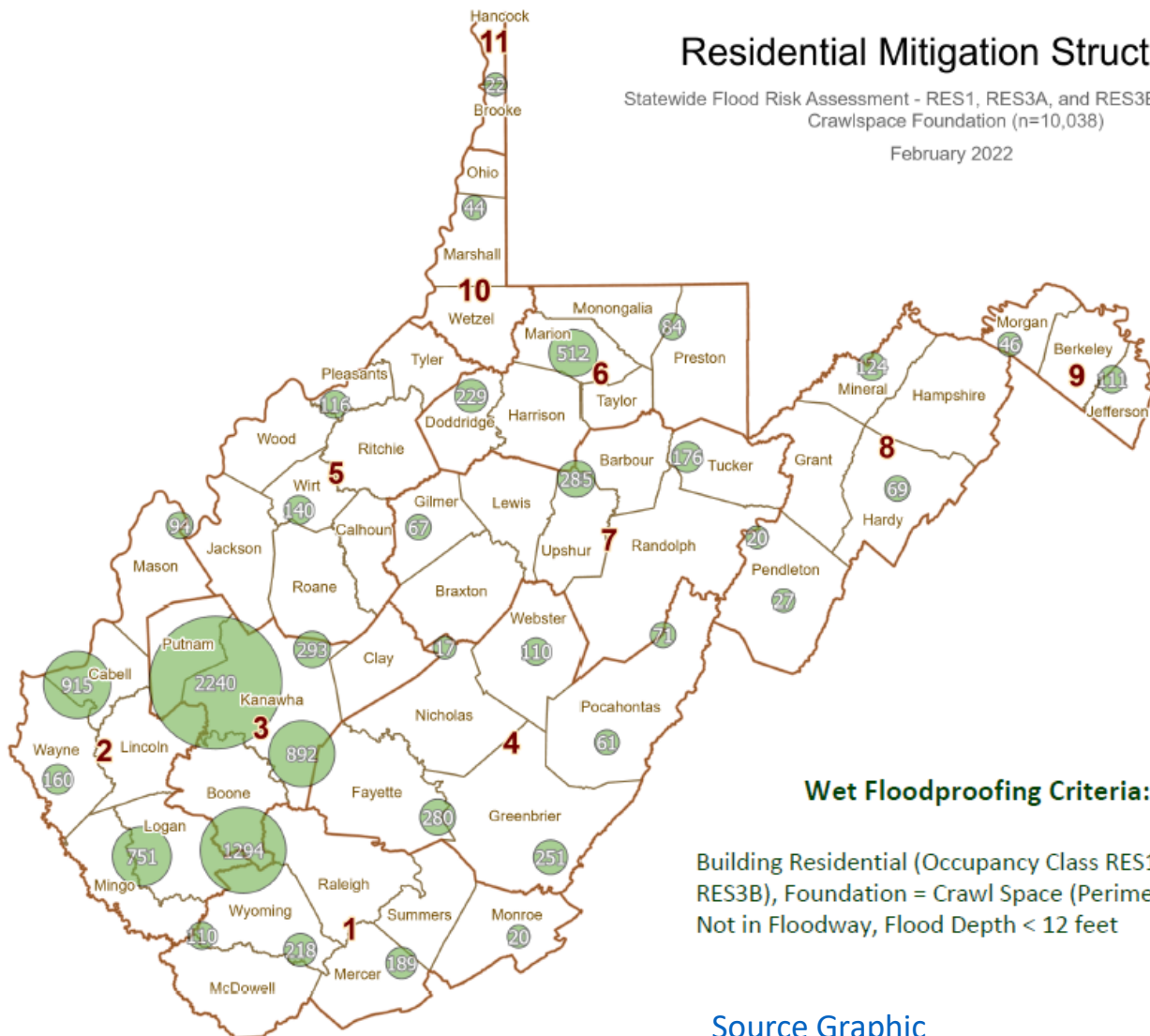
Building [08-06-0006-0058-0001](#)
on the Elk River in Clay County

Potential Structures for Mitigation

Residential Mitigation Structures

Statewide Flood Risk Assessment - RES1, RES3A, and RES3B Structures with Crawl-space Foundation (n=10,038)

February 2022



[Source Graphic](#)

Areas of Mitigation (AoMI) Interest

Areas of Mitigation (AoMI) are identified by Repetitive Loss structures, Substantial Damage Model Estimates, Mitigated Properties, Flood Depths, High-Water Marks, and Similar Topography. Graphics of reference data for AoMI determinations:

- [Areas of Mitigation Interest \(AoMI\)](#)
- [Repetitive Loss Structures](#)
- [Buyout Properties](#)
- [High Flood Depths or Water Depths-in-Structure](#)
- [High-Water Marks](#)
- [Building Damage \\$ Non-Residential](#) | [Building Damage \\$ Residential](#)
- [Substantial Damage Estimates](#)