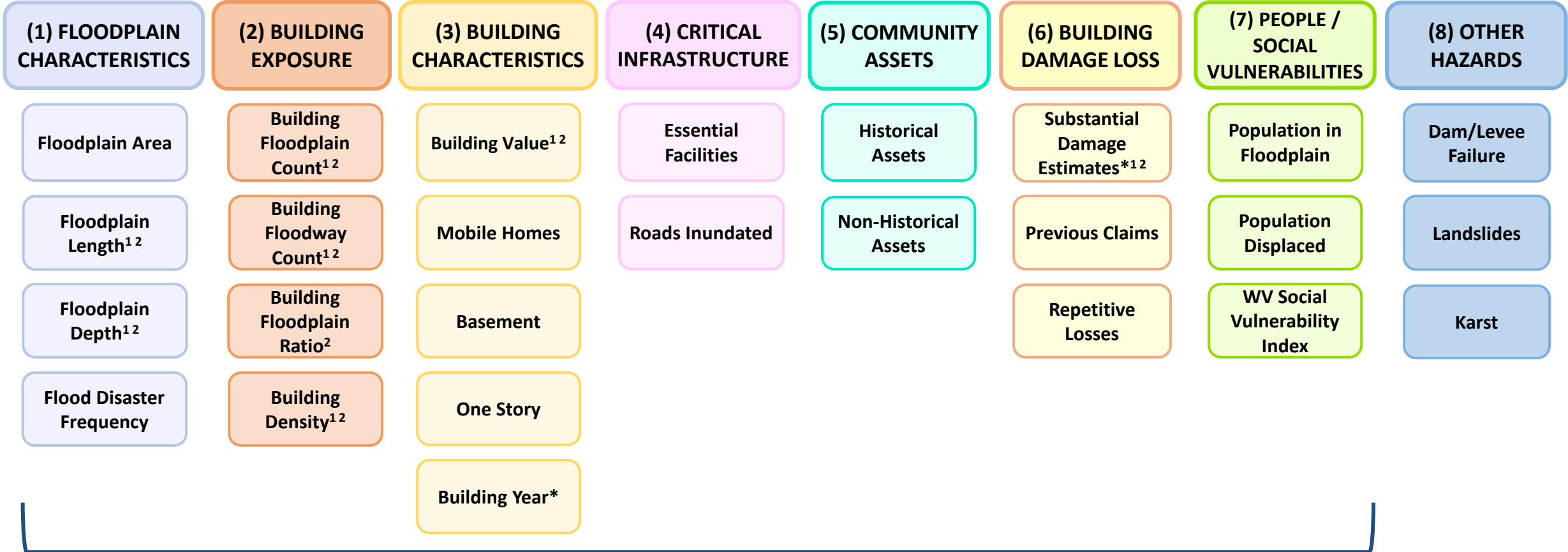




Overall Flood Risk



Cumulative Flood Risk Index

* Multiple Indicators

¹ River/Stream Indicator

² Watershed Indicator



Flood Risk Assessment

Jefferson County

Link to Flood Risk Comparison Report on WVRE:

<https://wvfrf.org/wvre/report/?scaleid=3&entityid=19&type=hierarchy>

Cumulative Flood Risk Index:

Table 1a: County Total

STATE INDEX RANK	COUNTY	CUMULATIVE FLOOD RISK INDEX	
		INDEX SCORE	INDEX RATING
48	Jefferson	12.9%	Very Low

Table 1b: Incorporated Places

#	STATE INDEX RANK	INCORPORATED PLACE	COUNTY	CUMULATIVE FLOOD RISK INDEX	
				INDEX SCORE	INDEX RATING
1	100	Harpers Ferry - Incorporated	Jefferson	56.5%	Moderate
2	126	Shepherdstown - Incorporated	Jefferson	45.1%	Moderate
3	173	Ranson - Incorporated	Jefferson	24.5%	Relatively Low
4	183	Charles Town - Incorporated	Jefferson	20.1%	Relatively Low
5	189	Bolivar - Incorporated	Jefferson	17.5%	Very Low

Table 1c: Unincorporated Area

#	STATE INDEX RANK	UNINCORPORATED AREA	CUMULATIVE FLOOD RISK INDEX	
			INDEX SCORE	INDEX RATING
1	40	Jefferson County* - Unincorporated	27.7%	Relatively Low

Risk Index Legend

VERY HIGH: 90% - 100%

Moderate: 40% - 59.9%

Very High: 80% - 100%

Relatively Low: 20% - 39.9%

Relatively High: 60% - 79.9%

Very Low: 0% - 19.9%



Flood Risk Assessment

Jefferson County

(1) Floodplain Characteristics:

Table 2a: County Total

STATE CATEGORY RANK	COUNTY	FLOODPLAIN CHARACTERISTICS				CATEGORY SCORE
		FLOODPLAIN AREA	FLOODPLAIN LENGTH	FLOOD DECLARED DISASTERS	FLOOD DEPTH MEDIAN	
39	Jefferson	9,010 Acres	162.5 Miles	12	2.4 Ft	29.6%

Table 2b: Incorporated Places

#	STATE CATEGORY RANK	INCORPORATED PLACE	FLOODPLAIN CHARACTERISTICS				CATEGORY SCORE
			FLOODPLAIN AREA RATIO	FLOODPLAIN LENGTH RATIO	FLOOD DECLARED DISASTERS	FLOOD DEPTH MEDIAN	
1	55	Harpers Ferry - Incorporated	18.5%	0.00762 Miles/Acre	12	26.4 Ft	75.8%
2	174	Shepherdstown - Incorporated	8.5%	0.00291 Miles/Acre	12	2.0 Ft	24.1%
3	180	Bolivar - Incorporated	0.4%	0.00151 Miles/Acre	12	17.6 Ft	21.4%
4	205	Charles Town - Incorporated	5.3%	0.00159 Miles/Acre	12	0.8 Ft	10.0%
5	219	Ranson - Incorporated	3.5%	0.00060 Miles/Acre	12	0.4 Ft	4.3%

State Median: 1.8 Ft

Table 2c: Unincorporated Area

#	STATE CATEGORY RANK	UNINCORPORATED AREA	FLOODPLAIN CHARACTERISTICS				CATEGORY SCORE
			FLOODPLAIN AREA	FLOODPLAIN LENGTH	FLOOD DECLARED DISASTERS	FLOOD DEPTH MEDIAN	
1	26	Jefferson County* - Unincorporated	8,535 Acres	152.0 Miles	12	4.7 Ft	50.0%

State Median: 2.0 Ft

Statewide Rank among the Top 5

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

1

2

4

Notes:

Floodplain Area: Modified Floodplain Area (mSFHA) = Total Special Flood Hazard Area (aSFHA) – [Open water lakes > 10 acres] – [Large rivers bank-to-bank > 500 ft] – [Federal lands > 10 acres]

Floodplain Length: Total length of the Effective and Advisory Special Flood Hazard floodplains in miles

Floodplain Length Breakdown:

Jefferson County → Detailed: 34.1%, Approximate: 52.3%, Advisory: 13.6%

Harpers Ferry → Detailed: 0%, Approximate: 68.5%, Advisory: 31.5%

Shepherdstown → Detailed: 50.7%, Approximate: 8.0%, Advisory: 41.3%

Bolivar → Detailed: 0%, Approximate: 100%, Advisory: 0%

Charles Town → Detailed: 54.9%, Approximate: 43.7%, Advisory: 1.3%

Ranson → Detailed: 93.6%, Approximate: 5.8%, Advisory: 0.6%

Jefferson Unincorporated Area → Detailed: 34.2%, Approximate: 54.6%, Advisory: 11.2%

Floodplain Area Ratio: Ratio of the Modified Special Flood Hazard Area (mSFHA) to total incorporated place area

Floodplain Length Ratio: Ratio of Special Flood Hazard length (Effective and Advisory) to total incorporated place area

Flood Declared Disasters: Number of federally-declared flood disasters in the county since 1953

Flood Depth Median: Median value of flood depths of all primary structures inventoried in the High-Risk* flood zones from FEMA's models

* High-Risk 100-year floodplain may include both Effective or Advisory Floodplains



Flood Risk Assessment

Jefferson County

(2) Building Exposure:

Table 3a: County Total

STATE CATEGORY RANK	COUNTY	BUILDING EXPOSURE				CATEGORY SCORE
		BUILDING FLOODPLAIN COUNT	BUILDING FLOODWAY COUNT	BUILDING FLOODPLAIN RATIO	BUILDING DENSITY	
48	Jefferson	499	33	1.7%	0.06 /Acre	12.9%

Table 3b: Incorporated Places

#	STATE CATEGORY RANK	INCORPORATED PLACE	BUILDING EXPOSURE				CATEGORY SCORE
			BUILDING FLOODPLAIN COUNT	BUILDING FLOODWAY COUNT	BUILDING FLOODPLAIN RATIO	BUILDING DENSITY	
1	90	Shepherdstown - Incorporated	76	0	10.3%	3.45 /Acre	60.9%
2	129	Ranson - Incorporated	50	2	1.7%	0.28 /Acre	43.4%
3	147	Harpers Ferry - Incorporated	31	0	11.2%	0.42 /Acre	35.9%
4	152	Charles Town - Incorporated	21	4	0.6%	0.11 /Acre	33.7%
5	154	Bolivar - Incorporated	4	0	0.6%	4.00 /Acre	32.8%

State Median: 0.75 /Acre

Table 3c: Unincorporated Area

#	STATE CATEGORY RANK	UNINCORPORATED AREA	BUILDING EXPOSURE				CATEGORY SCORE
			BUILDING FLOODPLAIN COUNT	BUILDING FLOODWAY COUNT	BUILDING FLOODPLAIN RATIO	BUILDING DENSITY	
1	47	Jefferson County* - Unincorporated	317	27	1.6%	0.04 /Acre	14.8%

Statewide Rank among the Top 5

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

Notes :

Building Floodplain Count: Building count in Special Flood Hazard Area including Effective, New Preliminary, and Draft floodplains (excluding mapped-out structures)

Buildings in Floodplain Breakdown:

Jefferson County → in Effective: 376, in Advisory: 123

Shepherdstown → in Effective: 47, in Advisory: 29

Ranson → in Effective: 49, in Advisory: 1

Harpers Ferry → in Effective: 1, in Advisory: 30

Charles Town → in Effective: 17, in Advisory: 4

Bolivar → in Effective: 0, in Advisory: 4

Jefferson Unincorporated Area → in Effective: 262, in Advisory: 55

Building Floodway Count: Building count in Regulatory Floodway

Building Floodplain Ratio: Percentage of floodplain buildings (in High-Risk* (100-yr) Effective or Advisory Floodplains) to total buildings

Building Density: Density of buildings in High-Risk* flood areas to total floodplain acres

* High-Risk 100-year floodplain may include both Effective or Advisory Floodplains



Flood Risk Assessment

Jefferson County

Statewide Rank among the Top 5

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

Table 4a: County Total

STATE CATEGORY RANK	COUNTY	BUILDING CHARACTERISTICS						CATEGORY SCORE
		BUILDING MEDIAN VALUE	BLDG. MOBILE HOMES RATIO	BLDG. SUBGRADE BASEMENTS RATIO	BUILDING 1-STORY RATIO	BLDG. YEAR PRE-FIRM RATIO	BLDG. YEAR MINUS RATED POST-FIRM RATIO	
24	Jefferson	\$97,450 ¹	13.6%	49.5% ⁴	64.0%	71.1%	9.4%	57.4%
		State Median: \$42,200		State Median: 21.6%				

Table 4b: Incorporated Places

#	STATE CATEGORY RANK	INCORPORATED PLACE	BUILDING CHARACTERISTICS						CATEGORY SCORE
			BUILDING MEDIAN VALUE	BLDG. MOBILE HOMES RATIO	BLDG. SUBGRADE BASEMENTS RATIO	BUILDING 1-STORY RATIO	BLDG. YEAR PRE-FIRM RATIO	BLDG. YEAR MINUS RATED POST-FIRM RATIO	
1	116	Shepherdstown - Incorporated	\$213,800 ¹	0.0%	45.5%	16.7%	92.4%	1.3%	49.5%
2	125	Ranson - Incorporated	\$63,350	13.3%	37.5%	90.0%	67.5%	0.0%	45.6%
3	136	Harpers Ferry - Incorporated	\$188,000 ²	0.0%	90.3% ¹	3.2%	100.0% ¹	0.0%	40.7%
4	172	Charles Town - Incorporated	\$67,500	0.0%	63.0%	37.0%	77.8%	0.0%	25.0%
5	187	Bolivar - Incorporated	\$0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
			State Median: \$41,500		State Median: 25.5%		State Median: 86.6%		

Table 4c: Unincorporated Area

#	STATE CATEGORY RANK	UNINCORPORATED AREA	BUILDING CHARACTERISTICS						CATEGORY SCORE
			BUILDING MEDIAN VALUE	BLDG. MOBILE HOMES RATIO	BLDG. SUBGRADE BASEMENTS RATIO	BUILDING 1-STORY RATIO	BLDG. YEAR PRE-FIRM RATIO	BLDG. YEAR MINUS RATED POST-FIRM RATIO	
1	20	Jefferson County* - Unincorporated	\$93,150 ¹	15.5%	48.9% ²	71.5%	66.7%	14.5%	62.9%
			State Median: \$37,350		State Median: 19.5%				

Notes

- Building Median Value:** Median of appraised values of all primary structures in the High-Risk* 100-year floodplain from the most recent tax assessment data or other building value data sources for tax-exempt structures
- Bldg. Mobile Homes Ratio:** Percentage of manufactured buildings (occupancy class code RES2) among all single-family structures (RES1 & RES2) in the High-Risk* 100-year floodplain
- Bldg. Subgrade Basements Ratio:** Percentage of structures with subgrade basements among all primary structures in the High-Risk* 100-year floodplain (may also include walkout basement enclosures)
- Building 1-Story Ratio:** Percentage of one-story structures among all primary buildings in the High-Risk* 100-year floodplain
- Bldg. Year Pre-FIRM Ratio:** Percentage of buildings constructed or substantially improved on or before December 31, 1974, or before the effective date of the initial Flood Insurance Rate Map of the community, whichever is late (also including Post-FIRM construction regulated to Pre-FIRM and Unknown FIRM status) among all primary structures in the High-Risk* 100-year floodplain
- Bldg. Year Minus Rated Post-FIRM Ratio:** Percentage of structures constructed after the FIRM date of which their first floor is more than one foot below the Base Flood Elevation (BFE) among all primary structures in the High-Risk* 100-year floodplain



Flood Risk Assessment

Jefferson County

(4) Critical Infrastructure:

Table 5a: County Total

STATE CATEGORY RANK	COUNTY	CRITICAL INFRASTRUCTURE		CATEGORY SCORE
		ESSENTIAL FACILITIES ?	ROADS INUNDATED RATIO ?	
51	Jefferson ?	0	4.4%	7.4%

Table 5b: Incorporated Places

#	STATE CATEGORY RANK	INCORPORATED PLACE	CRITICAL INFRASTRUCTURE		CATEGORY SCORE
			ESSENTIAL FACILITIES ?	ROADS INUNDATED RATIO ?	
1	115	Harpers Ferry - Incorporated ?	0	31.6%	50.0%
2	160	Shepherdstown - Incorporated ?	0	7.5%	29.8%
3	168	Bolivar - Incorporated ?	0	5.9%	26.7%
4	197	Ranson - Incorporated ?	0	0.9%	14.0%
5	206	Charles Town - Incorporated ?	0	0.1%	10.0%

Table 5c: Unincorporated Area

#	STATE CATEGORY RANK	UNINCORPORATED AREA	CRITICAL INFRASTRUCTURE		CATEGORY SCORE
			ESSENTIAL FACILITIES ?	ROADS INUNDATED RATIO ?	
1	47	Jefferson County* - Unincorporated ?	0	4.6%	14.8%

Notes

Essential Facilities: Number of essential facilities (including schools, hospitals, nursing homes, police stations, fire department buildings, & E-911 emergency operations centers) which provide critical services to the community in the high (100-year), moderate (500-year), and reduced risk flood zones

Roads Inundated Ratio: Percentage of roads inundated by flood waters of 1 foot or more by a high-risk 1% annual chance (100-year) flood event



Flood Risk Assessment

Jefferson County

(5) Community Assets:

Statewide Rank among the Top 5

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

Table 6a: County Total

STATE CATEGORY RANK	COUNTY	COMMUNITY ASSETS		CATEGORY SCORE
		COMMUNITY ASSETS HISTORICAL	COMMUNITY ASSETS NON-HISTORICAL	
22	Jefferson	120	12	59.2%
		State Median: 7		

Table 6b: Incorporated Places

#	STATE CATEGORY RANK	INCORPORATED PLACE	COMMUNITY ASSETS		CATEGORY SCORE
			COMMUNITY ASSETS HISTORICAL	COMMUNITY ASSETS NON-HISTORICAL	
1	24	Shepherdstown - Incorporated	48	4	89.4%
2	45	Harpers Ferry - Incorporated	29	1	80.7%
3	47	Charles Town - Incorporated	14	1	79.8%
4	49	Bolivar - Incorporated	3	1	78.9%
5	120	Ranson - Incorporated	0	1	25.8%

Table 6c: Unincorporated Area

#	STATE CATEGORY RANK	UNINCORPORATED AREA	COMMUNITY ASSETS		CATEGORY SCORE
			COMMUNITY ASSETS HISTORICAL	COMMUNITY ASSETS NON-HISTORICAL	
1	22	Jefferson County* - Unincorporated	26	4	61.1%
		State Median: 1			

Notes

Community Assets Historical: Number of historical community assets listed on the National Register of Historic Places or buildings within the Historic Districts constructed before 1930 in the High-Risk* 100-year floodplain

Community Assets Non-Historical: Number of non-historical community assets including utilities, post-secondary educational facilities, EMS, government buildings providing public services, and religious buildings in the High-Risk* 100-year floodplain

* High-Risk 100-year floodplain may include both Effective or Advisory Floodplains



Flood Risk Assessment

Jefferson County

(6) Building Damage Loss:

Statewide Rank among the Top 5

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

Table 7a: County Total

STATE CATEGORY RANK	COUNTY	BUILDING DAMAGE LOSS				CATEGORY SCORE
		BLDG. SUBSTANTIAL DAMAGE COUNT	BLDG. SUBSTANTIAL DAMAGE RATIO	BLDG. PREVIOUS DAMAGE CLAIMS	BLDG. REPETITIVE LOSS STRUCTURES	
26	Jefferson	120	24.0%	163	66	53.7%

Table 7b: Incorporated Places

#	STATE CATEGORY RANK	INCORPORATED PLACE	BUILDING DAMAGE LOSS				CATEGORY SCORE
			BLDG. SUBSTANTIAL DAMAGE COUNT	BLDG. SUBSTANTIAL DAMAGE RATIO	BLDG. PREVIOUS DAMAGE CLAIMS	BLDG. REPETITIVE LOSS STRUCTURES	
1	54	Harpers Ferry - Incorporated	24	77.4%	11	2	76.7%
2	112	Bolivar - Incorporated	1	0.0%	0	0	51.3%
3	125	Shepherdstown - Incorporated	1	1.3%	2	0	45.6%
4	134	Ranson - Incorporated	0	0.0%	20	6	41.6%
5	181	Charles Town - Incorporated	0	0.0%	3	0	20.1%

State Median: 0.9%

Table 7c: Unincorporated Area

#	STATE CATEGORY RANK	UNINCORPORATED AREA	BUILDING DAMAGE LOSS				CATEGORY SCORE
			BLDG. SUBSTANTIAL DAMAGE COUNT	BLDG. SUBSTANTIAL DAMAGE RATIO	BLDG. PREVIOUS DAMAGE CLAIMS	BLDG. REPETITIVE LOSS STRUCTURES	
1	16	Jefferson County* - Unincorporated	94	29.7%	127	58	72.2%

Notes

- Bldg. Substantial Damage Count:** Estimated number of primary structures substantially damaged from a 1% annual chance (100-year) flood for which the estimated flood loss is 50% or greater of the building appraised value
- Bldg. Substantial Damage Ratio:** Percentage of substantially damaged structures to total floodplain structures
- Bldg. Previous Damage Claims:** Number of previous flood-related insurance claims
- Bldg. Repetitive Loss Structures:** Number of NFIP-insured structures that have had at least 2 paid flood losses of more than \$1,000 each in any 10-year period since 1978



Flood Risk Assessment

Jefferson County

(7) People / Social Vulnerabilities:

Table 8a: County Total

STATE CATEGORY RANK ↕	COUNTY ↕	PEOPLE / SOCIAL VULNERABILITIES			CATEGORY SCORE ↕
		POPULATION IN FLOODPLAIN RATIO ⓘ ↕	POPULATION DISPLACED RATIO ⓘ ↕	WV SOCIAL VULNERABILITY INDEX ⓘ ↕	
54	Jefferson ⓘ	2.1%	1.4%	0.0%	1.8%

Table 8b: Incorporated Places

#	STATE CATEGORY RANK ↕	INCORPORATED PLACE ↕	PEOPLE / SOCIAL VULNERABILITIES			CATEGORY SCORE ↕
			POPULATION IN FLOODPLAIN RATIO ⓘ ↕	POPULATION DISPLACED RATIO ⓘ ↕	WV SOCIAL VULNERABILITY INDEX ⓘ ↕	
1	168	Shepherdstown - Incorporated ⓘ	11.2%	3.4%	1.8%	26.7%
2	175	Harpers Ferry - Incorporated ⓘ	4.8%	4.8%	3.1%	23.6%
3	187	Ranson - Incorporated ⓘ	2.7%	1.7%	7.0%	18.4%
4	202	Charles Town - Incorporated ⓘ	0.9%	0.5%	0.9%	11.8%
5	207	Bolivar - Incorporated ⓘ	0.5%	0.2%	0.4%	9.6%

Table 8c: Unincorporated Area

#	STATE CATEGORY RANK ↕	UNINCORPORATED AREA ↕	PEOPLE / SOCIAL VULNERABILITIES			CATEGORY SCORE ↕
			POPULATION IN FLOODPLAIN RATIO ⓘ ↕	POPULATION DISPLACED RATIO ⓘ ↕	WV SOCIAL VULNERABILITY INDEX ⓘ ↕	
1	54	Jefferson County* - Unincorporated ⓘ	2.0%	1.4%	1.8%	1.8%

Notes

:

Population in Floodplain Ratio: Percentage of population residing in the High-Risk* Special Flood Hazard Area to total population

Population Displaced Ratio: Estimated percentage of population displaced by a major storm of a 1% annual chance (100-year) probability to total population

WV Social Vulnerability Index: Social vulnerability index developed for West Virginia based on the eight following socioeconomic and demographic indicators:

Poverty Rate, Unemployment Rate, No High School Diploma Ratio, Vulnerable Ages Ratio, Disability Ratio, Population Change Ratio, Median Housing Value, and Mobile Homes Ratio in Total Area

* High-Risk 100-year floodplain may include both Effective or Advisory Floodplains