COMMUNITY-LEVEL FLOOD RISK DETAILED STUDIES RESOURCES (CATALOG)  
*Compiled by Behrang, Mar. 2024*

**Indicator Materials:** Materials related to risk/mitigation indicators and supporting documents prepared for the focus study communities (Whites Sulphur Springs, Rainelle, Richwood, Marlinton, Clendenin, and Camden-on-Gauley).

For each group, the document type is mentioned before the community names (*Maps, Tables, Charts*, etc.)

The folders are on the FTP drive under: **\\gistc-outfilesrv1-22\FTPDrive\pub\RA\RI\DS**

On the FTP drive, the folder names are the abbreviations mentioned in parenthesis on this list.

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# Flood Hazard Risk Indicators

## Flood Frequency (FLD\_FRQ)

*Maps:*

*Camden:*[FEMA Six Frequencies](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Camden_FEMA_Flood%20Frequency.pdf), [FEMA Preliminary/Effective Zones](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Camden_PrelimFloodZones.pdf), [FSF Four Frequencies](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Camden_FSF_FloodFrequency.pdf)

*Clendenin:*[FEMA Six Frequencies](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Clendenin_FEMA_Flood%20Frequency.pdf), [FEMA Preliminary/Effective Zones](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Clendenin_PrelimFloodZones.pdf), [FSF Four Frequencies](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Clendenin_FSF_FloodFrequency.pdf)

*Marlinton:*

*Rainelle:*[FEMA Six Frequencies](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Rainelle_FEMA_Flood%20Frequency.pdf), [FEMA Preliminary/Effective Zones](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Rainelle_PrelimFloodZones.pdf), [FSF Four Frequencies](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Rainelle_FSF_FloodFrequency.pdf)

*Richwood:*[FEMA Six Frequencies](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Richwood_FEMA_Flood%20Frequency.pdf), [FEMA Preliminary/Effective Zones](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Richwood_PrelimFloodZones.pdf), [FSF Four Frequencies](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/Richwood_FSF_FloodFrequency.pdf)

*WSS:*[FEMA Six Frequencies](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/WSS_FEMA_FloodFrequency.pdf), [FEMA Preliminary/Effective Zones](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/WSS_PrelimFloodZones.pdf), [FSF Four Frequencies](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_FRQ_DS/WSS_FSF_FloodFrequency.pdf)

## Floodplain Area

* + 1. Floodplain Area Ratio (SFHA\_RT)

## Floodplain Length

* + 1. Floodplain Length Ratio (FLDPLN\_L\_RT)
    2. Floodplain Length (FLDPLN\_LNG)

## Declared Flood Disasters (DCL\_DSTR)

*Tables:* [Counties of all six communities](https://data.wvgis.wvu.edu/pub/RA/RI/ST/1_Flood_Hazard_ST/DCL_DSTR/DCL_DSTR.pdf#page=8)

## Flood Depth (FLD\_DPT)

* + 1. Maximum Flood Depth
    2. Detailed Depth Grids:

*Maps:*

*Camden:* [FEMA 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Camden_FEMA100yr_Depth.pdf), [FEMA 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Camden_FEMA500yr_Depth.pdf), [FSF 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Camden_FSF100yr_Depth.pdf)

*Clendenin:* [FEMA 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Clendenin_FEMA100yr_Depth.pdf), [FEMA 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Clendenin_FEMA500yr_Depth.pdf), [FSF 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Clendenin_FSF100yr_Depth.pdf)

*Marlinton:*

*Rainelle:* [FEMA 10-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FEMA10yr.pdf), [FEMA 25-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FEMA25yr.pdf), [FEMA 50-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FEMA50yr.pdf), [FEMA 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FEMA100yr.pdf), [FEMA 100-year Plus (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FEMA100yr-plus.pdf), [FEMA 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FEMA500yr.pdf), [FSF 5-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FSF5yr.pdf), [FSF 20-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FSF20yr.pdf), [FSF 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FSF100yr.pdf), [FSF 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FSF500yr.pdf), [FSF 100-year 2052 (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FSF_100yr_2052Depth.pdf), [FSF 500-year 2052 (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FSF_500yr_2052Depth.pdf)

*Richwood:* [FEMA 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Richwood_FEMA100yr_Depth.pdf), [FEMA 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Richwood_FEMA500yr_Depth.pdf), [FSF 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Richwood_FSF100yr_Depth.pdf)

*WSS:* [FEMA 10-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FEMA10yr.pdf), [FEMA 25-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FEMA25yr.pdf), [FEMA 50-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FEMA50yr.pdf), [FEMA 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FEMA100yr.pdf), [FEMA 100-year Plus (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FEMA100yr-plus.pdf), [FEMA 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FEMA500yr.pdf), [FSF 5-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FSF5yr.pdf), [FSF 5-year (zoomed out)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FSF5yr_ZoomedOut.pdf), [FSF 20-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FSF20yr.pdf), [FSF 20-year (zoomed out)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FSF20yr_ZoomedOut.pdf), [FSF 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FSF100yr.pdf), [FSF 100-year (zoomed out)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FSF100_ZoomedOut.pdf), [FSF 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FSF500yr.pdf), [FSF 100-year 2052 (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FSF_100yr_2052Depth.pdf), [FSF 500-year 2052 (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FSF_500yr_2052Depth.pdf)

* + 1. Comparison between FSF and FEMA

*Maps:*

*Camden:* [FEMA vs. FSF 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Camden_FEMA_FSF_100yr_Depths.pdf), [FEMA vs. FSF 500-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Camden_FEMA_FSF_500yr_Depths.pdf)

*Clendenin:* [FEMA vs. FSF 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Clendenin_FEMA_FSF_100yr_Depths.pdf), [FEMA vs. FSF 500-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Clendenin_FEMA_FSF_500yr_Depths.pdf)

*Marlinton:*

*Rainelle:* [FEMA vs. FSF 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FEMA_FSF_100yr.pdf), [FEMA vs. FSF 500-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_FEMA_FSF_500yr.pdf)

*Richwood:* [FEMA vs. FSF 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Richwood_FEMA_FSF_100yr_Depths.pdf), [FEMA vs. FSF 500-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Richwood_FEMA_FSF_500yr_Depths.pdf)

*WSS:* [FEMA vs. FSF 100-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FEMA_FSF_100yr.pdf), [FEMA vs. FSF 500-Year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_FEMA_FSF_500yr.pdf)

* + 1. High Water Marks:

*Maps:* [*Camden*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Camden_HWM.pdf)*,* [*Clendenin*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Clendenin_HWM.pdf)*, Marlinton,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Rainelle_HWM.pdf)*,* [*Richwood*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/Richwood_HWM.pdf)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/1_Flood_Hazard_DS/FLD_DPT_DS/WSS_HWM.pdf)

## Other Flood Characteristics

* + 1. Velocity
    2. Duration
    3. Rise and Fall

# Structure Risk Indicators

## Building Counts / Ratios

* + 1. Building Count in SFHA (BLDG\_SFHA)

*Tables:* [*All six communities*](https://data.wvgis.wvu.edu/pub/RA/RI/ST/2_Structure_ST/BLDG_SFHA/BLDG_SFHA.pdf#page=17)

* + 1. Building Count in Floodway (BLDG\_FLDW)
    2. SFHA Buildings to Total Buildings Ratio (BLDG\_SFHA\_RT)
    3. Floodway Buildings to Exposed Buildings Ratio (BLDG\_FLDW\_RT)
    4. Building Density in Floodplain (BLDG\_DENS)
    5. High-Risk Floodplain Buildings Total (BLDG\_FLD)
    6. Buildings in FEMA Depth > 10 ft (FEMA\_DPT10)
    7. Buildings in FSF 2052 Depth > 10 ft (FSF\_DPT10)
    8. Mapped-In Buildings (MPD\_IN):

*Maps: Camden, Clendenin, Marlinton,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/MPD_IN_DS/Rainelle_FMC_20230517.pdf)*, Richwood,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/MPD_IN_DS/WSS_FMC_20230517.pdf)

* + 1. Mapped-Out Buildings (MPD\_OUT):

*Maps: Camden, Clendenin, Marlinton,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/MPD_IN_DS/Rainelle_FMC_20230517.pdf)*, Richwood,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/MPD_IN_DS/WSS_FMC_20230517.pdf)

## Building Types & Values

* + 1. Total Building Value in Floodplain (FLD\_VAL)
    2. Floodplain Building Value Ratio (FLD\_VAL\_RT)
    3. Median Floodplain Building Value (MED\_FLD\_VAL)
    4. Exposed Residential Count Ratio (RES\_RT):

*Maps: Camden, Clendenin, Marlinton,* [*Rainelle (Community)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RES_RT_DS/Rainelle_OccupancyClass.pdf)*,* [*Rainelle (BLRA)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RES_RT_DS/Rainelle_OccupancyClass_withBLRA.pdf)*,* [*Rainelle (AoI)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RES_RT_DS/Rainelle_OccupancyClass_withBLRA_AOI.pdf)*, Richwood,* [*WSS (AoI)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RES_RT_DS/WSS_OccupancyClass.pdf)*,* [*WSS (BLRA)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RES_RT_DS/WSS_OccupancyClass_withBLRA.pdf)

* + 1. Exposed Non-Residential Count Ratio (NONRES\_RT):

*Maps: Camden, Clendenin, Marlinton,* [*Rainelle (Community)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RES_RT_DS/Rainelle_OccupancyClass.pdf)*,* [*Rainelle (BLRA)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RES_RT_DS/Rainelle_OccupancyClass_withBLRA.pdf)*,* [*Rainelle (AoI)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RES_RT_DS/Rainelle_OccupancyClass_withBLRA_AOI.pdf)*, Richwood,* [*WSS (AoI)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RES_RT_DS/WSS_OccupancyClass.pdf)*,* [*WSS (BLRA)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RES_RT_DS/WSS_OccupancyClass_withBLRA.pdf)

* + 1. Residential Value in Floodplain (RES\_VAL)
    2. Exposed Residential Value Ratio (RES\_VAL\_RT)
    3. High-Value Residential Count (RES\_HIGH\_VAL)
    4. Non-Residential Value in Floodplain (NONRES\_VAL)
    5. Exposed Non-Residential Value Ratio (NONRES\_VAL\_RT)

## Vulnerable Structures

* + 1. Manufactured Homes in Floodplain (MOB\_FLD)
    2. Floodplain Manufactured Homes Ratio (MOB\_RT)
    3. Floodplain Buildings with Basements Ratio (BSM\_FLD):

*Maps:* [*Camden*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/BSM_FLD_DS/Camden_Basements.pdf)*,* [*Clendenin*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/BSM_FLD_DS/Clendenin_Basements.pdf)*, Marlinton,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/BSM_FLD_DS/Rainelle_Basements.pdf)*,* [*Richwood*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/BSM_FLD_DS/Richwood_Basements.pdf)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/BSM_FLD_DS/WSS_Basements.pdf)

* + 1. One-Story Residential Buildings Ratio (1STR\_FLD\_RT)
    2. Renter-Occupied Housing in Floodplain Ratio (RENT\_FLD\_RT):

*Maps:* [*Camden*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RENT_FLD_RT_DS/Camden_TaxClass_Floodplain.pdf)*,* [*Clendenin*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RENT_FLD_RT_DS/Clendenin_TaxClass_Floodplain.pdf)*, Marlinton,* [*Rainelle (Community)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RENT_FLD_RT_DS/Rainelle_TaxClass.pdf)*,* [*Rainelle (Floodplain)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RENT_FLD_RT_DS/Rainelle_TaxClass_Floodplain.pdf)*,* [*Richwood*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RENT_FLD_RT_DS/Richwood_TaxClass_Floodplain.pdf)*,* [*WSS (Community AoI)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RENT_FLD_RT_DS/WSS_TaxClass.pdf)*,* [*WSS (Floodplain AoI)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RENT_FLD_RT_DS/WSS_TaxClass_Floodplain.pdf)

* + 1. Low-Value Floodplain Buildings Ratio (RED\_TAG\_RT):

*Maps:* [*Camden*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RED_TAG_RT_DS/Camden_Low_Value.pdf)*,* [*Clendenin*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RED_TAG_RT_DS/Clendenin_Low_Value.pdf)*, Marlinton,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RED_TAG_RT_DS/Rainelle_Low_Value.pdf)*,* [*Richwood*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RED_TAG_RT_DS/Richwood_Low_Value.pdf)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/RED_TAG_RT_DS/WWS_Low_Value.pdf)

## FIRM Status

* + 1. Pre-FIRM in Floodplain Ratio (PRE-FIRM\_RT)
    2. Post-FIRM in Floodplain Ratio (POST-FIRM\_RT)

## Building Year / New Construction

* + 1. Median Building Year in Floodplain (MED\_YR\_FLD)
    2. Minus-Rated Post-FIRM Buildings (MIN\_RTD)
    3. Minus-Rated Post-FIRM Ratio (MIN\_RTD\_RT)

## Significant Structures

* + 1. Most Vulnerable Essential Facilities (EF\_VUL)
    2. Floodplain Essential Facilities (EF\_FLD)
    3. Most Vulnerable Non-Historical Community Assets (NONH\_CA\_VUL)
    4. Floodplain Non-Hist. Community Assets (NONH\_CA\_FLD)
    5. Most Vulnerable Historical Community Assets in Floodplain (HIST\_CA\_VUL)
    6. Floodplain Historical Community Assets (HIST\_CA\_FLD)

## Physical Damage Estimates

* + 1. Building Flood Loss Ratio (LOSS\_RT)
    2. Substantial Damage Buildings (SD\_FLD)
    3. Substantial Damage Ratio (SD\_RT)
    4. Median Building Flood Damage (MED\_USD\_LOSS)
    5. Median Building Percent Damage (MED\_PCT\_LOSS)
    6. High Damage Buildings (HIGH\_LOSS)
    7. Debris Removal (DBR\_FLD)

## Recorded Building Damage Losses

* + 1. Previous Flood Claims (PREV\_CLM)
    2. Previous Paid Losses (PREV\_LOSS)
    3. Repetitive Loss Structures (REP\_LOSS)
    4. Inundated Roads Ratio (ROAD\_FLD\_RT)

## Transportation Infrastructure

* + 1. Inundated Roads Ratio (ROAD\_FLD\_RT):

*Maps w. Tables: Camden, Clendenin, Marlinton,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/ROAD_FLD_RT/Rainelle_Inundated_Transportation-FEMA_100yr.pdf)*, Richwood,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/ROAD_FLD_RT/WSS_Inundated_Transportation-FEMA_100yr.pdf)

## Other Documents

* + 1. FEMA 100-Yr SDE Percent Damage (LOSS\_PCT):

*Maps:* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/LOSS_PCT/Rainelle_Bldg_DamageLossEstimates_100yr.pdf)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/LOSS_PCT/WSS_Bldg_DamageLossEstimates_100yr.pdf)

* + 1. Hazus Building Damage Loss SDE (Elevated versus Non-Elevated) (HZ\_LOSS\_FFH):

*Maps: Rainelle:* [FEMA 100-Yr 1ft](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/HZ_LOSS_FFH/Rainelle_HAZUS_FEMA100_1ftFFH.pdf), [FEMA 100-Yr Elevated](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/HZ_LOSS_FFH/Rainelle_HAZUS_FEMA100_ElevFFH.pdf), [FEMA 100-Yr Plus Elevated (Climate)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/HZ_LOSS_FFH/Rainelle_HAZUS_FEMA100plus_ElevFFH.pdf), [FSF 500-Yr 1ft](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/HZ_LOSS_FFH/Rainelle_HAZUS_FSF500_1ftFFH.pdf)

*WSS:* [FSF 500-Yr 1ft](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/HZ_LOSS_FFH/WSS_HAZUS_FSF500_1ftFFH.pdf)

* + 1. 2016 Flood Substantial Damage Estimates (percentage damaged) (SD\_2016):

*Maps:* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/2_Structure_DS/SD_2016/WSS_SDE_2016flood.pdf)

# People/Social Risk Indicators

## Social Vulnerability

* + 1. WV Social Vulnerability Index (WV\_SVI):

*Tables:* [*Camden*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/3_People_Social_DS/WV_SVI_DS/Camden_Social_Vulnerability.pdf)*,* [*Clendenin*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/3_People_Social_DS/WV_SVI_DS/Clendenin_Social_Vulnerability.pdf)*,* [*Marlinton*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/3_People_Social_DS/WV_SVI_DS/Marlinton_Social_Vulnerability.pdf)*,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/3_People_Social_DS/WV_SVI_DS/WSS_Rainelle_Social_Vulnerability.pdf)*,* [*Richwood*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/3_People_Social_DS/WV_SVI_DS/Richwood_Social_Vulnerability.pdf)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/3_People_Social_DS/WV_SVI_DS/WSS_Rainelle_Social_Vulnerability.pdf)

## Population Exposure

* + 1. Floodplain Population Ratio (FLD\_POP\_RT)

## Population Displacement & Shelter Needs

* + 1. Displaced Population Ratio (DISP\_POP\_RT)
    2. Population Displaced (DISP\_POP)
    3. Short-Term Shelter Population (SHLT\_POP)
    4. Short-Term Shelter Ratio (SHLT\_POP\_RT)
    5. Shelter Companion Pets (SHLT\_PET)

## Fatalities by the 2016 Flood (FAT\_2016)

*Map:* [Fatalities Locations and Detailed Study Communities](https://data.wvgis.wvu.edu/pub/RA/RI/DS/3_People_Social_DS/FAT_2016_DS/2016FloodFatalities_DS_02152024.pdf)

# Other Hazards

## Dams/Levees

* + 1. Dam Failure Risk (DAM\_RSK)
    2. Levee Failure Risk (LEV\_RSK)

## Landslide

* + 1. High-Susceptibility Landslide Ratio (LNDSLD\_RSK)

# Mitigation Measures

## Floodplain Management

* + 1. CRS Class (CRS\_CLS)
    2. Freeboard (FB\_2FT)
    3. Flood Disclosure Laws (FLD\_DSCL)

## Flood Insurance

* + 1. Flood Insurance Ratio (FLD\_INSC\_RT)

## Mitigated Structures

* + 1. Structures to DFE (DFE\_BLDG):

*Maps: Camden, Clendenin, Marlinton,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/DFE_BLDG_DS/Rainelle_DFEMitRecon.pdf)*, Richwood,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/DFE_BLDG_DS/WSS_DFEMitRecon.pdf)

* + 1. Wet Floodproofing Structures (WET\_FLD\_PRF)
    2. Dry Floodproofing Structures (DRY\_FLD\_PRF)

## Green Infrastructure

* + 1. Buyout Parcels (BOUT\_PRPT)
    2. Open Space in Floodplain Ratio (OSP\_RT)
    3. Open Space Acreage (OSP\_AREA)

## Other Documents

* + 1. Areas of Mitigation Interest (AoMI):

*Maps: Camden, Clendenin, Marlinton,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/AoMI/RainelleAoMI_small.pdf)*, Richwood,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/AoMI/WSSAoMI_small.pdf)

* + 1. Mitigated Properties (MTG\_PROP):

*Maps:* [*Clendenin*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/MTG_PROP/Clendenin_Mitigated_Properties.pdf)*, Marlinton,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/MTG_PROP/Rainelle_Mitigated_Properties.pdf)*,* [*Richwood*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/MTG_PROP/Richwood_Mitigated_Properties.pdf)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/MTG_PROP/WSS_Mitigated_Properties.pdf)

* + 1. Mitigated New Construction (NEW\_CONST):

*Maps:* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/NEW_CONST/Rainelle_NewConstruction.pdf)*,* [*Rainelle (Residential)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/NEW_CONST/Rainelle_ResNewConstruction_wCount.pdf)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/NEW_CONST/WSS_NewConstruction.pdf)*,* [*WSS (Residential)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/NEW_CONST/WSS_ResNewConstruction_wCounts.pdf)

* + 1. Unmitigated Rehabilitated / Repaired Structures (REHAB\_REP):

*Maps:* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/REHAB_REP/Rainelle_Rehabilitated-Repaired_Structures.pdf)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/REHAB_REP/WSS_Rehabilitated-Repaired_Structures.pdf)

* + 1. Mitigation Reconstruction by Sponsor (RECON\_SPNS):

*Maps:* [*Rainelle ASP*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/RECON_SPNS/Rainelle_MR_ASP_Rainelle.pdf),[*ASP Greenbrier County*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/RECON_SPNS/Greenbrier_MR_ASP.pdf)

* + 1. New Residential Construction Post Flood – Relocated Communities (2017-2021 Tax Assessment, FSF 500-Yr) (NEW\_RELOC):

*Maps:* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/NEW_RELOC/Rainelle_Residential_NewConstruction_PostFlood.pdf)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/NEW_RELOC/WSS_Residential_NewConstruction_PostFlood.pdf)

* + 1. 2016 Building Value Recovery (2016\_VAL\_RCVY):

*Charts & Tables:* [Combined for Camden, Clendenin, Rainelle, Richwood, & WSS](https://data.wvgis.wvu.edu/pub/RA/RI/DS/5_Mitigation_DS/2016_VAL_RCVY/Building_Value_Recovery.pdf)

# Visualizations

## Multimedia

* + 1. Community-Level 3D Viewsheds (VSH):

*Camden:* [FEMA 10-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_FEMA-10pc.JPG), [FEMA 25-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_FEMA-4pc.JPG), [FEMA 50-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_FEMA-2pc.JPG), [FEMA 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_FEMA-1pc.JPG), [FEMA 100-year Plus (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_FEMA_ClimateChange.JPG), [FEMA 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_FEMA-02pc.JPG), [FSF 5-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_FSF-20pc.JPG), [FSF 20-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_FSF-5pc.JPG), [FSF 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_FSF-1pc.JPG), [FSF 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_FSF-02pc.JPG)

*Clendenin:* [FEMA 10-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_FEMA-10pc.JPG), [FEMA 25-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_FEMA-4pc.JPG), [FEMA 50-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_FEMA-2pc.JPG), [FEMA 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_FEMA-1pc.JPG), [FEMA 100-year Plus (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_FEMA-ClimateChange.JPG), [FEMA 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_FEMA-02pc.JPG), [FSF 5-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_FSF-20pc.JPG), [FSF 20-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_FSF-5pc.JPG), [FSF 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_FSF-1pc.JPG), [FSF 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_FSF-02pc.JPG)

*Marlinton:*

*Rainelle:* [FEMA 10-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_FEMA-10pc.jpg), [FEMA 25-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_FEMA-4pc.jpg), [FEMA 50-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_FEMA-2pc.jpg), [FEMA 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_FEMA-1pc.jpg), [FEMA 100-year Plus (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_FEMA_ClimateChange.jpg), [FEMA 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_FEMA-02pc.jpg), [FSF 5-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_FSF-20pc.jpg), [FSF 20-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_FSF-5pc.jpg), [FSF 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_FSF-1pc.jpg), [FSF 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_FSF-02pc.jpg)

*Richwood:* [FEMA 10-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_FEMA-10pc.JPG), [FEMA 25-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_FEMA-4pc.JPG), [FEMA 50-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_FEMA-2pc.JPG), [FEMA 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_FEMA-1pc.JPG), [FEMA 100-year Plus (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_FEMA-ClimateChange.JPG), [FEMA 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_FEMA-02pc.JPG), [FSF 5-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_FSF-20pc.JPG), [FSF 20-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_FSF-5pc.JPG), [FSF 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_FSF-1pc.JPG), [FSF 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_FSF-02pc.JPG)

*WSS:* [FEMA 10-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_FEMA-10pc.jpg), [FEMA 25-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_FEMA-4pc.jpg), [FEMA 50-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_FEMA-2pc.jpg), [FEMA 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_FEMA-1pc.jpg), [FEMA 100-year Plus (Climate Change)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_FEMA_ClimateChange.jpg), [FEMA 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_FEMA-02pc.jpg), [FSF 5-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_FSS_20pc.JPG), [FSF 20-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_FSS_5pc.JPG), [FSF 100-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_FSS_1pc.JPG), [FSF 500-year](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_FSS_02pc.JPG)

* + 1. Community-Level 3D Movies (MOV)

[*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/MOV_DS/Rainelle_03012024.mp4)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/MOV_DS/WhiteSulphur_v6_07072023_Audio_v1.mp4)

* + 1. Neighborhood-Level Mitigation, 3D Oblique Views (OBV)

*Rainelle:* [7th St.](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/OBV_DS/Rainelle_7th_St_Legend.jpg), [Greenbrier Ave.](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/OBV_DS/Rainelle_Greenbrier_Ave_Legend.jpg)

*WSS:* [Central Ave. (on 2016 image)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/OBV_DS/WSS_Central_Ave_Legend_2016Image.jpg), [Central Ave. (on 2019 image)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/OBV_DS/WSS_Central_Ave_Legend_2019Image.jpg), [Freeland Ave.](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/OBV_DS/WSS_Freeland_Ave_Legend.jpg)

* + 1. Structure-Level 3D Views (Flood profiles on building images) (STRC3D)

[*Camden 1*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/STRC3D_DS/Structure_Level_3D.pdf#page=5)*,* [*Camden 2*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/STRC3D_DS/Structure_Level_3D.pdf#page=6)*,* [*Clendenin*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/STRC3D_DS/Structure_Level_3D.pdf#page=1)*,* [*Marlinton*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/STRC3D_DS/Structure_Level_3D.pdf#page=7)*,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/STRC3D_DS/Structure_Level_3D.pdf#page=4)*,* [*Richwood*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/STRC3D_DS/Structure_Level_3D.pdf#page=2)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/STRC3D_DS/Structure_Level_3D.pdf#page=3)

* + 1. Structure-Level Flood Profiles (FP)

From Annie

## PowerPoint (PPT)

* + 1. Flood Characteristics

[*Rainelle (Nov. 2022)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PPT_DS/Rainelle_3D_Viewshed_FEMA_Flood_Characteristics_for_poster.pdf)*,* [*WSS (Nov. 2022)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PPT_DS/WSS_3D_Viewshed_FEMA_Flood_Characteristics_for_poster.pdf)

* + 1. Building/Human Exposure

[*Rainelle and WSS (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PPT_DS/Building_Parcel_Human_Exposure_WSS_Rainelle.pdf)

* + 1. Physical and Human Flood Loss

[*Rainelle and WSS (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PPT_DS/Damage_Loss_Estimates_WSS_Rainelle.pdf)

* + 1. Flood Mitigation

[*Rainelle and WSS (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PPT_DS/Mitigation_WSS_Rainelle.pdf)

* + 1. Community-Level 3D Viewsheds (FEMA)

[*Camden*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Camden_VSH/Camden_3D_Viewshed_20240110.pdf)*,* [*Clendenin*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Clendenin_VSH/Clendenin_3D_Viewshed_20240110.pdf)*, Marlinton,* [*Rainelle*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Rainelle_VSH/Rainelle_3D_Viewshed_20221113.pdf)*,* [*Richwood*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/Richwood_VSH/Richwood_3D_Viewshed_20240110.pdf)*,* [*WSS*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/VSH_DS/WSS_VSH/WSS_3D_Viewshed_20221113.pdf)

* + 1. Neighborhood-Level Mitigation, 3D Oblique View Slides

[*WSS Central Ave.*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/OBV_DS/WSS_Central_Ave_Google_Earth.pdf)

* + 1. [Structure-Level 3D Views (Flood profiles on building images) Slides](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/STRC3D_DS/Structure_Level_3D.pdf)

## Posters (PSTR)

* + 1. Flood Characteristics Posters

[*Rainelle (Nov. 2022)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/Rainelle_Flood_Characteristics_Poster.pdf)*,* [*WSS (Nov. 2022)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/WSS_Flood_Characteristics_Poster.pdf)

* + 1. Flood Risk Indicators Posters

[*Rainelle (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/Rainelle_Risk_Indicators_Poster.pdf)*,* [*WSS (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/WSS_Risk_Indicators_Poster.pdf)

* + 1. Flood Mitigation Posters

[*Rainelle (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/Rainelle_Mitigation_Poster.pdf)*,* [*WSS (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/WSS_Mitigation_Poster.pdf)

* + 1. At-Risk / Mitigated Properties Posters

[*Rainelle (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/Rainelle_BLRA_Poster.pdf)*,* [*Rainelle with Imagery (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/Rainelle_BLRA_Imagery_Poster.pdf)*,* [*WSS (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/WSS_BLRA_Poster.pdf)*,* [*WSS with Imagery (May 2023)*](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/WSS_BLRA_Imagery_Poster.pdf)

* + 1. [Community Flood Risk Assessment, WVFRF (Flood Day, Feb. 2024)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/Detailed_Studies_RA_Poster_20240209.pdf)
    2. [Flood Risk Visualization, Building Level, WVFRF (Flood Day, Feb. 2024)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/Geovisualization_Posters_20240213.pdf" \l "page=1)
    3. [Flood Risk Visualization, Community Level, WVFRF (Flood Day, Feb. 2024)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Visualization_DS/PSTR_DS/Geovisualization_Posters_20240213.pdf#page=2)

## Story Maps (STR\_M)

## Flood Dashboards (DB)

# Reports / Publications

## Project Reports

* + 1. [CIVIC NSF, Stage I: Report of Research Findings](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Reports_Publications_DS/NSF_CIVIC_Stage_1_Report_202305.pdf), *Rainelle & WSS (May 2023)*
    2. [CIVIC NSF, Stage I: Appendix to Report of Research](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Reports_Publications_DS/NSF_CIVIC_Research_Report_Appendix_202305.pdf), *Rainelle & WSS (May 2023)*

## Scholarly Articles

# Presentations

* + 1. [Greenbrier Study Findings (CIVIC NSF, Stage I)](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Presentations_DS/Rainelle_WSS_Focus_Group_Meetings_May2023/Greenbrier_Study_Findings_WVUGIS_CTPFY22.pdf); Presented in *Rainelle* and *WSS* Meetings (May 2023)
    2. [Building Profile Visualization; Presented on Flood Day, Feb. 2024](https://data.wvgis.wvu.edu/pub/RA/RI/DS/Presentations_DS/WV_Flood_Resiliency_Day_20240214/Profile%20Visualization_%2020240123.pdf)

# FEMA Flood Studies and Reports

## 2022 Flood Insurance Study (Preliminary) [Volume 1](https://data.wvgis.wvu.edu/pub/NSF/FloodProfiles/54025CV001B.pdf) | [Volume 2](https://data.wvgis.wvu.edu/pub/NSF/FloodProfiles/54025CV002B.pdf)

* + 1. [Historical Stream Gage HWM](https://data.wvgis.wvu.edu/pub/NSF/FloodProfiles/54025CV001B.pdf#page=40) (page 36)
    2. [Channelization of Sewell Creek](https://data.wvgis.wvu.edu/pub/NSF/FloodProfiles/54025CV001B.pdf#page=41) (page 37). Refer to engineering notes from Matt Breen.
    3. Rainelle [FIRM Index and Panels](https://data.wvgis.wvu.edu/pub/NSF/FIS/FIRM2012/)
    4. Flood Profiles
       1. [Howard Creek - WSS Garden Street Profiles](https://data.wvgis.wvu.edu/pub/NSF/FloodProfiles/54025CV002B.pdf#page=43) (page 43)
       2. [Sewell Creek Flood Profiles](https://data.wvgis.wvu.edu/pub/NSF/FloodProfiles/54025CV002B.pdf#page=52) (page 52)
    5. Floodway Information
       1. [Floodway Description](https://data.wvgis.wvu.edu/pub/NSF/FloodProfiles/54025CV001B.pdf#page=36) (page 32)
       2. [Howard Creek Floodway Velocity data](https://data.wvgis.wvu.edu/pub/NSF/FloodProfiles/54025CV001B.pdf#page=78) (page 74)
       3. [Sewell Creek Floodway Velocity data](https://data.wvgis.wvu.edu/pub/NSF/FloodProfiles/54025CV001B.pdf#page=81) (page 77)

## 2016 Flood Report

* + 1. FEMA [Lessons Learned from June 2016 Flood](https://www.fema.gov/sites/default/files/documents/Region_III_WV_FloodReport.pdf)
    2. USGS [Characteristics of peak streamflows and extent of inundation in areas of West Virginia and southwestern Virginia affected by flooding, June 2016](https://pubs.er.usgs.gov/publication/ofr20171140) | [Publication Download Site](https://pubs.er.usgs.gov/publication/ofr20171140)
       1. HWM map of [White Sulphur Springs](https://pubs.usgs.gov/of/2017/1140/ofr20171140.pdf#page=38) (page 30)
       2. HWM map of [Sewell Creek](https://pubs.usgs.gov/of/2017/1140/ofr20171140.pdf#page=39) (page 31)

## 2012 Flood Study

* + 1. Rainelle
       1. [Sewell Creek Flood Map](https://map1.msc.fema.gov/firm?id=54025C0357E)
       2. [FIS Report](https://map1.msc.fema.gov/data/54/S/PDF/54025CV000A.pdf?LOC=a85974aa6e069ec39812076cf89fc2eb)

## 1987 Flood Study – [Rainelle’s 1987 Sewell Creek Flood Map](https://map1.msc.fema.gov/firm?id=5402280001A)

## 1977 Flood Study – [HUD Rainelle’s 1977 Sewell Creek Flood Map](https://map1.msc.fema.gov/firm?id=540228)