

FLOOD RISK ASSESSMENT DELIVERABLES

Table F-1. FLOOD RISK ASSESSMENT Products and Deliverables

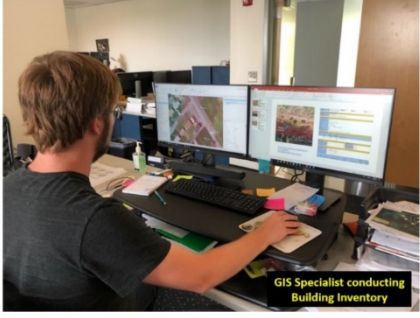
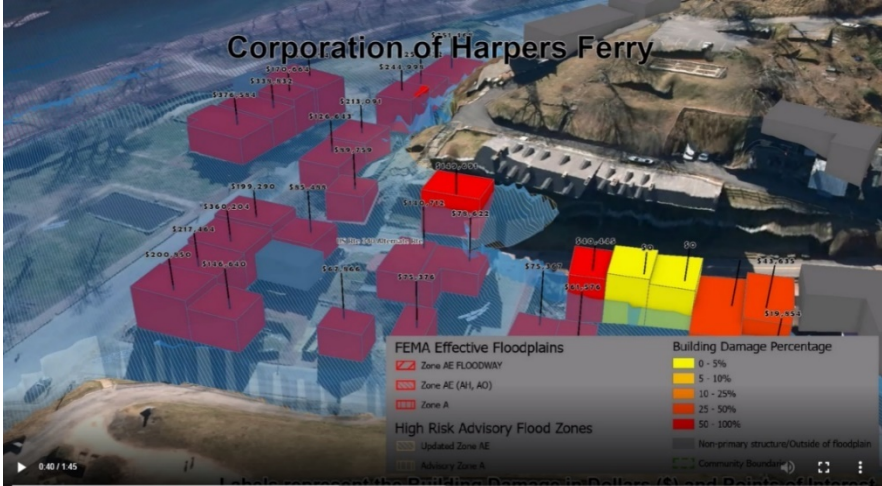
| Task | Task Description | Goal |
|--------------------------------------|---|---------|
| Site-Specific Flood Risk Assessments | <p>TASK 1: [Site-specific flood risk assessments] Complete Hazus Level 2 flood risk assessments for 55 counties and 213 incorporated communities to supplement Local and State Hazard Mitigation Plans]. The flood risk assessments for the 268 flood-prone areas are calculated for a riverine 1%-annual-chance flood event with Hazus flood loss models using as inputs the flood inundation area and composite of the best available depth grids.</p> <p>STATEWIDE FLOOD RISK ASSESSMENT. Referred to as the Total Exposure in Floodplains (TEIF) project. Created site-specific flood risk assessments for 286 communities (231 municipalities and 55 unincorporated areas) for the 1%-annual-chance (100-yr) flood event. Detailed risk profiles were generated at the building level and aggregated to the community, regional, and state levels. Risk profiles by stream name and watershed were produced as well.</p> <p>FLOOD LOSS MODELS. The building-level flood risk assessments utilized FEMA’s Flood Assessment Structure Tool (FAST), a GIS-based, open-source utility designed by FEMA’s Hazus Program for estimating potential building losses for a 1%-annual-chance flood event.</p> <div style="background-color: #e6f2ff; padding: 10px;"> <p style="text-align: center; margin: 0;">FLOOD LOSS ESTIMATION METHODOLOGY</p> <ul style="list-style-type: none"> Standardized Flood Loss Methodology: FEMA’s open-source Hazus utility, Flood Assessment Structure Tool (FAST), provides a standardized methodology for estimating potential building losses for a 1%-annual-chance flood event. Debris removal and maximum restoration times are also determined. Population Displacement Models: Supplemented FEMA’s FAST utility with population and short-term sheltering models according to Hazus methodology. Automated Model Outputs: Automated python scripts generate the flood loss model outputs quickly. Quantifies Degree of Flood Risk: Flood loss models quantify the degree of flood risk, including estimates of substantially damaged structures. Quantifying the degree of flood risk is important for risk communications and flood reduction efforts. </div> | Goal F1 |

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| | <div style="text-align: center;"> <h2 style="background-color: #003366; color: white; padding: 5px;">WV Building-Level Flood Risk Assessment</h2> </div> <ul style="list-style-type: none"> ● BUILDING LEVEL RISK CYCLE. Refer to this directory for detailed documentation about how the building level risk assessment cycle (BLRA) creates the building-level risk assessments. See Task 1 of the Data Development tasks for <i>community-wide</i> building inventory which is required for the landslide hazard risk assessment. The building attributes can be updated annually when new statewide tax assessment database is published. ● PRESENTATION. Flood Risk Assessment Presentation (2022) PDF PPTX ● SUPPORT OF OTHER FEDERAL AGENCIES. The flood risk assessment data has successfully supported other risk reduction projects as well in West Virginia. <ul style="list-style-type: none"> ○ “Voluntary Floodplain Buyout along Elkhorn Creek/Tug Fork River, McDowell County” report. Work for the Watershed Plan and Environmental Assessment performed by the West Virginia University Land Use and Sustainable Development Law Clinic and the Natural Resources Conservation Service. ○ Provided USACE with project information to develop a collaborative Silver Jackets proposal in support of the statewide flood risk assessment. ○ A team of West Virginia University researchers received a CIVIC 2022 Stage 1 Planning Grant to study resiliency of flood-devastated communities in Greenbrier County with support from the National Science Foundation. See preliminary results of Greenbrier Study. | |

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| <p>Statewide Geodatabase of Site-Specific Flood Risk Structures</p> | <p>TASK 2: [Statewide Geodatabase of Site-Specific Flood Risk Structures] Create a statewide geodatabase of site-specific flood risk structures (called “User-Defined Facilities”, or UDFs, in Hazus) located in the Effective/Advisory Floodplains attributed with building exposure and flood loss values.</p> <p>More than 98,000 structures in high-risk effective and advisory flood zones were inventoried and attributed with building exposure and flood loss values. Essential facilities, community assets, and other structures of significance are distinguished in the statewide building-level flood risk inventory.</p> <p>The spatial location and building characteristic (building value, occupancy class, first-floor height, etc.) were compiled and verified by GIS Specialists using the best-available GIS and tax assessment reference data. Default building characteristics are updated annually from the WV Property Tax Database, while user-defined modified values may be supplied for missing or incorrect assessment attributes. A unique building identifier consisting of the parcel identifier and address number was assigned to every flood-risk structure for the management and reporting of building-level flood risk assessments. Customized online tax assessment reports allowed GIS Specialists to identify one-to-many relationships for single parcels with multiple buildings.</p> <p><i>Enhanced Building Inventory and Accuracy Improvement Procedures:</i> GIS Specialists used desktop GIS software to (1) pinpoint building locations to the most restrictive flood zone, (2) match building points to correct assessment records, (3) identify insurable primary structures, (4) classify significant structures as essential facilities and community assets, (5) complete missing building attributes, and (6) modify default assessment building values with user-supplied values (Cost, Area, Occupancy Class, etc.)</p> <p style="text-align: center;"><u>BUILDING-LEVEL RISK ASSESSMENT (BLRA) HIGHLIGHTS:</u></p> <div style="background-color: #e0e0e0; padding: 5px;"> <p>STATEWIDE FLOOD RISK ASSESSMENT BUILDING INVENTORY METHODOLOGY</p> <ul style="list-style-type: none"> • Statewide Inventory: All primary structures in West Virginia flood-prone communities have been inventoried for both effective and advisory 1%-annual-chance floodplains. • Detailed and Accurate: Detailed building inventory procedures using the best-available GIS and tax assessment reference layers result in an accurate and comprehensive building risk database. • Primary Structures and Manufactured (Mobile) Homes: Primary insurable structures are verified by reference layers so as not to include car ports, outbuildings, and other ancillary structures in the building inventory. All manufactured homes are counted and special procedures have been established to populate building attributes for this occupancy class. • Building Unique Identifier: A unique identifier consisting of the Parcel ID and Address Number allows flood risk structures to be linked to other building-level databases (e.g., building pictures, mitigated structures, elevation certificates, structures newly mapped into SFHA, etc.). </div> | <p>Goal F2</p> |

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| | <ul style="list-style-type: none"> • Significant Structures: Essential facilities, community assets, and other structures of significance are distinguished in the building-level flood risk inventory. • Maintenance Cycle: Building attributes are updated annually when the new statewide tax assessment database is published. • Semi-Automated Procedures: Building inventory procedures are semi-automated to increase efficiencies and cost savings. <p style="text-align: center;">STATEWIDE FLOOD RISK BUILDING LEVEL RISK ASSESSMENT (BLRA) DATABASE</p> <ul style="list-style-type: none"> • Statewide Flood Risk Geodatabase: A comprehensive geodatabase of at-risk buildings in the 1%-annual-chance floodplain with over 80 risk assessment attributes. The database can be sorted and filtered on key variables (Building Dollar Exposure, Occupancy Class, Flood Depth, Depth-in-Structure, Building Dollar Damage, Building Damage Percent, etc.) • Future Map Conditions: Where advisory floodplains exist, future building-level map conditions are generated to identify structures that most likely will be mapped in or out of the Special Flood Hazard Area upon the completion of flood restudies in which new flood maps become effective. • Various Flood Risk Assessment Products: Various products are generated from the statewide building level risk assessment: online interactive maps, static graphics, tabular spreadsheet reports (building and community level), subject reports, community risk profiles and matrices, etc. The building inventory also allows flood risk structures to be preloaded into FEMA’s Substantial Damage Estimator Tool or for communicating future map conditions / SFHA changes to affected property owners. • Most Vulnerable Building Lists: Top building exposure and building damage lists are generated at community, regional, or statewide scales. The data extracts are beneficial in identifying which high-value and high-damage potential structures have been mitigated. • Community Flood Risk Profiles: Aggregate reports of the building level risk database can be used to generate flood risk profiles at the community and county levels. Program scripts generate the tabular reports quickly and efficiently. • Consistent Methodology: A consistent and uniform risk assessment methodology allows for flood risk information to be evaluated at various geographic scales to determine which jurisdictions, regions, rivers/streams, or watersheds are at more risk than others. • Publicly Accessible Risk MAP View: Building level risk assessment layers are published online to the RiskMAP view of the WV Flood Tool. | |

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| | <p style="text-align: center;">HIGH-RISK FLOOD ZONE BUILDING COUNTS</p> <p>Special Flood Hazard Area</p> <ul style="list-style-type: none"> • 84,351 buildings • 35% in Approximate Zone A • 65% in Detailed Zone AE (9% in Regulatory Floodway) <p>Buildings in Non-Regulatory Zones</p> <ul style="list-style-type: none"> • 13,966 Structures (14%) mapped in High Risk Zone Advisory A / AE • 98,347 Total High Risk Buildings <p style="text-align: center;">FUTURE PROJECTS USING BUILDING-LEVEL RISK ASSESSMENT (BLRA) DATABASE</p> <ul style="list-style-type: none"> • Update the WV Building Level Risk Assessment (BLRA) from new data sources (e.g., flood studies, building characteristics from updated tax assessment database, community engagement/participation). • Document the mitigation status of 98,467 flood-prone structures to include community check-ups, focusing on post-FIRM structures with a minus 3 or greater rating. To track building verifications, update the BLRA database schema with tracking variables, or link building confirmation data in a separate table by the building identifier. • Enhance transportation flood inundation models for roads, railroads, and bridges to WV Flood Tool. • Map riverine flood impacts of vulnerably disadvantaged communities with higher stream flow change forecast models. • Model potential mitigation adaptive measures of buildings (e.g., foundations and flood depths suitable for flood vents) and communicate to communities. • Engage communities to validate areas of mitigation (AoMI) on Flood Tool. • For pre-disaster planning, substantial damage ICC and CRS credits, preload at-risk buildings from Statewide Flood Risk Assessment into FEMA’s Substantial Damage Estimator (SDE) Tool. • Support community-engagement activities, specifically building-level local outreach communications (using FEMA’s R3 Local Official Toolkit templates) for communities with new flood maps. Effectively communicate SFHA map changes to affected property owners. This activity requires community participation from the floodplain manager for successful execution. • Develop and verify community flood risk profiles from TEIF/TEAL project. • Explore integrating the WV Building Level Risk Assessment (BLRA) with FEMA’s national inventory (FEMA’s USA Structures Program) so standardized, consistent, and accessible building level information can be exchanged. | |

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| | <ul style="list-style-type: none"> Coordinate with the State and other partners in the development of key risk assessment data sets: mitigated structures from past flood events, state owned/leased buildings from WV Real Estate Division, water/sewer treatment plans from WVEMD or WVIJDC, WV Board of Risk and Insurance Management (BRIM) data, etc. <div data-bbox="672 380 1177 751" style="text-align: center;"> <p>Building Inventory</p>  </div> | |
| <p>3D Flood Risk Visualizations</p> | <p>TASK 3: [3D flood risk visualizations] 3D visualizations for every individual flood-risk structure and neighborhood scale flood visualizations for select communities.</p> <ul style="list-style-type: none"> SINGLE BUILDING 3D VIEW. 3D static visualizations were created of every flood-risk structure in the 100-year floodplain where a depth grid existed. COMMUNITY STRUCTURES 3D VIEW. 3D flood movies for visualizing damage loss estimates were created for five communities in Jefferson County. <ul style="list-style-type: none"> Sample Harpers Ferry Flood Risk 3D Visualization Movie <div data-bbox="462 1087 1339 1570" style="text-align: center;">  </div> | <p>Goal F3</p> |
| <p>Statewide Composite Flood Risk Products</p> | <p>TASK 4: [Assemble statewide composite flood risk products] Composite flood risk products include a statewide advisory floodplain from Advisory A and Advisory AE flood zones, statewide flood depth and water surface elevation grids.</p> <p>Updated the statewide composite flood risk depth grids for flood loss estimate models.</p> <p>Depth Grids: A more accurate statewide composite flood depth grid of 1-meter cell resolution was created from the best available sources for use in the Hazus flood loss damage and transportation inundation models. Performed a gap</p> | <p>Goal F4</p> |

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| | <p>analysis of model-backed depth grids in Approximate A Zones of West Virginia and communicated results to State NFIP Office and FEMA Region III. The 2010 Hazus depth grid was used where model-backed depth grids did not exist.</p> <p>Water Surface Elevation (WSEL) Grids: Water surface elevation grids were created from the FEMA CTP Projects and referenced for flood risk assessments.</p> <p>Flood Depth/WSEL Sources:</p> <ul style="list-style-type: none"> ○ FEMA Studies ○ Advisory A Flood Heights ○ Updated AE Redelineation <p>FEMA QL2 LiDAR: The delivery of FEMA-purchased QL2 LiDAR improved the accuracy of the water depth grids. It also improved the accuracy of landslide mapping for predictive models and now allows for online LOMA submissions using LiDAR. See FEMA-purchased LiDAR projects graphic.</p> | |
| <p>Update State Hazard Mitigation Plan</p> | <p>TASK 5: [Update State Hazard Mitigation Plan] Integrate county flood assessment data and reports into state hazard mitigation plan. A standardized data analysis process will ensure that future local and state plan updates are consistent and utilize comparable methodologies.</p> <ul style="list-style-type: none"> • Using a standardized methodology, created various flood risk assessment products in support of local and state hazard mitigation plans. • Refer to the Index Guide spreadsheet named “RA_Info_Index.xlsx” to access the various risk assessment products (products, reports, tables, graphics) published in support of FEMA’s Hazard Mitigation Plans and NFIP/CRS activities. | <p>Goal F5</p> |
| <p>Publish Flood Risk Data and Products</p> | <p>TASK 6: [Publish flood risk data and products] Publish flood risk data and products on state (www.MapWV.gov/flood) and FEMA’s federal geo-platforms according to required specifications. Flood risk deliverables for every county include Flood Risk Assessment reports, maps, and GIS data.</p> <ul style="list-style-type: none"> • Published data and products are accessed using the Risk Information Index. | <p>Goal F6</p> |

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| | <div style="background-color: #003366; color: white; padding: 10px; text-align: center;"> <h1 style="margin: 0;">Access Risk Assessment Info</h1> </div> <p style="text-align: center; margin-top: 10px;">Use the Risk Information Index to access Data and Products</p> <p><small>Risk Assessment Information Index 1/29/2022 Data Field Descriptions</small></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Risk Assessment or Mitigation Layer</th> <th rowspan="2">Report</th> <th rowspan="2">Key Variable</th> <th colspan="2">Community Level (CL)</th> <th colspan="4">Building Level (BL) or Feature Level (FL)</th> </tr> <tr> <th>Table</th> <th>Graphs</th> <th>Table</th> <th>Community Extract</th> <th>State Extract</th> <th>Graphs</th> <th>GIS</th> </tr> </thead> <tbody> <tr> <td colspan="9">FLOOD ZONE MAPS & STUDIES</td> </tr> <tr> <td>Flood Zone Breakdown by Length and Area</td> <td></td> <td>Zone Length and Area</td> <td>CL</td> <td>Y&G</td> <td></td> <td></td> <td></td> <td></td> <td>GIS</td> </tr> <tr> <td>Active Flood Studies and Mapping</td> <td></td> <td></td> <td>CL</td> <td>Y&G</td> <td>Y&G</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Model-Backed A Zones</td> <td></td> <td>10ft Street</td> <td>CL</td> <td>Y&G</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="9">FLOODPLAIN BUILDING INVENTORY AND FUTURE MAP CONDITIONS (What at-risk structures are in the floodplain?)</td> </tr> <tr> <td>Primary Buildings in High-Risk Effective and Advisory Floodplains – Future Map Conditions</td> <td></td> <td>Flood Zone Type</td> <td>CL</td> <td>Y&G</td> <td>Y&G</td> <td>BL,CL</td> <td></td> <td></td> <td>GIS</td> </tr> <tr> <td>Verified LOMA Properties Removal Status</td> <td></td> <td>SFHA Status</td> <td>CL</td> <td>Y&G</td> <td>BL</td> <td></td> <td></td> <td></td> <td>GIS</td> </tr> <tr> <td>Future SFHA Status</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Building by Stream Name (Flood Source), Community and Stream Jurisdictions</td> <td></td> <td>Stream Name</td> <td>CL</td> <td>Y&G</td> <td>BL,CL</td> <td>BL</td> <td>Top List</td> <td>Y&G</td> <td>GIS</td> </tr> <tr> <td colspan="9">SIGNIFICANT STRUCTURES OF IMPORTANCE</td> </tr> <tr> <td>Essential Facilities (0.2% Floodplain)</td> <td>GIS</td> <td>Facility Type</td> <td>CL</td> <td>Y&G</td> <td>BL,CL</td> <td></td> <td></td> <td></td> <td>GIS</td> </tr> <tr> <td>Community Assets</td> <td>GIS</td> <td>Facility Type</td> <td>CL</td> <td>Y&G</td> <td>BL,CL</td> <td></td> <td></td> <td></td> <td>GIS</td> </tr> <tr> <td>Historical Community Assets – National Register Sites</td> <td>GIS</td> <td>Register Area</td> <td>CL</td> <td>Y&G</td> <td>BL</td> <td></td> <td></td> <td></td> <td>GIS</td> </tr> <tr> <td colspan="9">FLOODPLAIN BUILDING CHARACTERISTICS</td> </tr> <tr> <td>Building Exposure Dollar Value</td> <td>GIS</td> <td>Building Appraisal, Occupancy</td> <td>CL</td> <td>Y&G</td> <td>Y&G</td> <td>Y&G Value (Top 100)</td> <td>Top 100</td> <td>Y&G</td> <td>GIS</td> </tr> <tr> <td>Building Single Family (RES1)</td> <td></td> <td>Single Family RES1</td> <td>CL</td> <td>Y&G</td> <td>Y&G</td> <td></td> <td>Top 100</td> <td>Y&G</td> <td>GIS</td> </tr> <tr> <td>Building Manufactured Homes (RES2)</td> <td></td> <td>Mobile Home RES2</td> <td>CL</td> <td>Y&G</td> <td>Y&G</td> <td></td> <td>Top 100</td> <td></td> <td>GIS</td> </tr> <tr> <td>Building Year and FIRM Status (Pre-FIRM/Post-FIRM)</td> <td></td> <td>Initial FIRM Date, Building Year</td> <td>CL</td> <td>Y&G</td> <td>BL,CL</td> <td></td> <td></td> <td></td> <td>GIS</td> </tr> <tr> <td>Building Median Value</td> <td></td> <td>Median Value</td> <td>CL</td> <td>Y&G</td> <td>Y&G</td> <td></td> <td></td> <td></td> <td>GIS</td> </tr> <tr> <td>Building Median Year</td> <td></td> <td>Building Year</td> <td>CL</td> <td>Y&G</td> <td>BL,CL</td> <td></td> <td></td> <td></td> <td>GIS</td> </tr> <tr> <td>Foundation Type and Basement</td> <td></td> <td>Foundation Type</td> <td></td> <td></td> <td>BL,CL</td> <td></td> <td></td> <td></td> <td>GIS</td> </tr> <tr> <td colspan="9">FLOOD DAMAGE LOSS ESTIMATES (IN FLOOD EVENT) (What is degree of Flood Risk?)</td> </tr> </tbody> </table> <div style="margin-top: 20px; background-color: #ffe4c4; padding: 10px;"> <p>Building Level Risk Assessment (BLRA) Products</p> <ul style="list-style-type: none"> • GIS Files • Tables (Excel) <ul style="list-style-type: none"> ○ Community Level (CL) ○ Building (or Feature) Level (BL) with links to online maps <ul style="list-style-type: none"> ▪ Table Extracts ▪ Top Lists • Maps <ul style="list-style-type: none"> ○ Interactive Web Maps ○ Graphics and Maps • Reports (Word Docs) • 3D Flood Visualizations <p style="font-size: small; margin-top: 10px;">Most of the risk assessment data can be viewed on the RiskMAP View of the WV Flood Tool</p> </div> | Risk Assessment or Mitigation Layer | Report | Key Variable | Community Level (CL) | | Building Level (BL) or Feature Level (FL) | | | | Table | Graphs | Table | Community Extract | State Extract | Graphs | GIS | FLOOD ZONE MAPS & STUDIES | | | | | | | | | Flood Zone Breakdown by Length and Area | | Zone Length and Area | CL | Y&G | | | | | GIS | Active Flood Studies and Mapping | | | CL | Y&G | Y&G | | | | | Model-Backed A Zones | | 10ft Street | CL | Y&G | | | | | | FLOODPLAIN BUILDING INVENTORY AND FUTURE MAP CONDITIONS (What at-risk structures are in the floodplain?) | | | | | | | | | Primary Buildings in High-Risk Effective and Advisory Floodplains – Future Map Conditions | | Flood Zone Type | CL | Y&G | Y&G | BL,CL | | | GIS | Verified LOMA Properties Removal Status | | SFHA Status | CL | Y&G | BL | | | | GIS | Future SFHA Status | | | | | | | | | | Building by Stream Name (Flood Source), Community and Stream Jurisdictions | | Stream Name | CL | Y&G | BL,CL | BL | Top List | Y&G | GIS | SIGNIFICANT STRUCTURES OF IMPORTANCE | | | | | | | | | Essential Facilities (0.2% Floodplain) | GIS | Facility Type | CL | Y&G | BL,CL | | | | GIS | Community Assets | GIS | Facility Type | CL | Y&G | BL,CL | | | | GIS | Historical Community Assets – National Register Sites | GIS | Register Area | CL | Y&G | BL | | | | GIS | FLOODPLAIN BUILDING CHARACTERISTICS | | | | | | | | | Building Exposure Dollar Value | GIS | Building Appraisal, Occupancy | CL | Y&G | Y&G | Y&G Value (Top 100) | Top 100 | Y&G | GIS | Building Single Family (RES1) | | Single Family RES1 | CL | Y&G | Y&G | | Top 100 | Y&G | GIS | Building Manufactured Homes (RES2) | | Mobile Home RES2 | CL | Y&G | Y&G | | Top 100 | | GIS | Building Year and FIRM Status (Pre-FIRM/Post-FIRM) | | Initial FIRM Date, Building Year | CL | Y&G | BL,CL | | | | GIS | Building Median Value | | Median Value | CL | Y&G | Y&G | | | | GIS | Building Median Year | | Building Year | CL | Y&G | BL,CL | | | | GIS | Foundation Type and Basement | | Foundation Type | | | BL,CL | | | | GIS | FLOOD DAMAGE LOSS ESTIMATES (IN FLOOD EVENT) (What is degree of Flood Risk?) | | | | | | | | | |
| Risk Assessment or Mitigation Layer | Report | | | | Key Variable | Community Level (CL) | | Building Level (BL) or Feature Level (FL) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Table | Graphs | Table | | Community Extract | State Extract | Graphs | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FLOOD ZONE MAPS & STUDIES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Zone Breakdown by Length and Area | | Zone Length and Area | CL | Y&G | | | | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Active Flood Studies and Mapping | | | CL | Y&G | Y&G | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Model-Backed A Zones | | 10ft Street | CL | Y&G | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FLOODPLAIN BUILDING INVENTORY AND FUTURE MAP CONDITIONS (What at-risk structures are in the floodplain?) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary Buildings in High-Risk Effective and Advisory Floodplains – Future Map Conditions | | Flood Zone Type | CL | Y&G | Y&G | BL,CL | | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Verified LOMA Properties Removal Status | | SFHA Status | CL | Y&G | BL | | | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Future SFHA Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Building by Stream Name (Flood Source), Community and Stream Jurisdictions | | Stream Name | CL | Y&G | BL,CL | BL | Top List | Y&G | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIGNIFICANT STRUCTURES OF IMPORTANCE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Essential Facilities (0.2% Floodplain) | GIS | Facility Type | CL | Y&G | BL,CL | | | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Community Assets | GIS | Facility Type | CL | Y&G | BL,CL | | | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Historical Community Assets – National Register Sites | GIS | Register Area | CL | Y&G | BL | | | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FLOODPLAIN BUILDING CHARACTERISTICS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Building Exposure Dollar Value | GIS | Building Appraisal, Occupancy | CL | Y&G | Y&G | Y&G Value (Top 100) | Top 100 | Y&G | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Building Single Family (RES1) | | Single Family RES1 | CL | Y&G | Y&G | | Top 100 | Y&G | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Building Manufactured Homes (RES2) | | Mobile Home RES2 | CL | Y&G | Y&G | | Top 100 | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Building Year and FIRM Status (Pre-FIRM/Post-FIRM) | | Initial FIRM Date, Building Year | CL | Y&G | BL,CL | | | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Building Median Value | | Median Value | CL | Y&G | Y&G | | | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Building Median Year | | Building Year | CL | Y&G | BL,CL | | | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Foundation Type and Basement | | Foundation Type | | | BL,CL | | | | GIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FLOOD DAMAGE LOSS ESTIMATES (IN FLOOD EVENT) (What is degree of Flood Risk?) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <div style="background-color: #fff9c4; padding: 10px;"> <p>Interactive Map – RiskMAP View of the WV Flood Tool</p> <ul style="list-style-type: none"> • Primary Structures (Future Map Conditions) • Building Exposure Cost • Building Year Pre-FIRM & Post-FIRM • Foundation Type • Minus-Rated Structures • Building Damage Loss Estimates • Risk Assessment tab lists building and content damage estimates </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <div style="background-color: #e1eef6; padding: 10px;"> <p>Static Graphics</p> <ul style="list-style-type: none"> • FLOOD ZONE MAP INFORMATION <ul style="list-style-type: none"> ○ High Water Marks ○ Active Flood Studies and Mapping ○ Flood Zone Types ○ Model-Backed A Zones A Zone Structure Clusters (5ft depth, 10ft. depth, 15 ft. depth; information forwarded to FEMA for consideration of mapping Approximate A Zones as detailed AE zones. See documentation.) ○ Updated AE ○ Model-Backed Depth Grid (1% Effective and Advisory) • FLOODPLAIN BUILDING INVENTORY AND FUTURE MAP CONDITIONS (What at-risk structures are in the floodplain?) <ul style="list-style-type: none"> ○ Primary Buildings in High-Risk Effective and Advisory Floodplains – Future Map Conditions. Community County ○ Verified LOMA Properties Removal Status. Future SFHA Status. ○ Building Risk and Dollar Exposure by Stream Name (Flood Source) Regional Rivers/Stream Maps Statewide Top Rivers/Streams </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Task | Task Description | Goal |
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| | <ul style="list-style-type: none"> ○ Buildings by Watershed ○ Buildings by PDC Region ● SIGNIFICANT STRUCTURES OF IMPORTANCE <ul style="list-style-type: none"> ○ Essential Facilities (mapped to 0.2% floodplain) ○ Community Assets Community County ● FLOODPLAIN BUILDING CHARACTERISTICS <ul style="list-style-type: none"> 1) Building Exposure Dollar Value Community County 2) WV BRIM data for identifying building replacement values of state owned buildings ○ Building NON-RESIDENTIAL <ul style="list-style-type: none"> 1) Percent Count: Community 2) Percent Value: Community County 3) Top Non-Residential Structures >=\$24M Top Non-Residential 4) Top Utility Structures >= \$15M Top Utility 5) <i>State Owned or Leased Buildings << State Government >></i> ○ Building RESIDENTIAL Single Family (RES1) <ul style="list-style-type: none"> 1) Percent Count: Community County Top Residential >= \$300K 2) Percent Value: Community County ○ Building Manufactured Homes (RES2) <ul style="list-style-type: none"> 1) Count: Community County 2) Percent: Community County ○ Post-FIRM Buildings Percent (Post-FIRM structures 23%; n=22,812) ○ Building Median Value All Occupancy Classes Single Family (RES1) ○ Building Median Year ● FLOOD DAMAGE LOSS ESTIMATES (1% FLOOD EVENT) (<i>What is the degree of Flood Risk?</i>) <ul style="list-style-type: none"> ○ Building Damage Loss <ul style="list-style-type: none"> 1) Median Dollar Building Damage 2) Median Percent Building Damage ○ Top Building Damage Loss Structures <ul style="list-style-type: none"> 1) Top Non-Residential Building Loss Estimates (Structure Loss >= \$14M) 2) Top Single-Family Residential Building Damage Loss Estimates (Structure Loss >= \$205K) 3) Substantial Damage Building Estimates <ul style="list-style-type: none"> 1. 7% of total floodplain structures are estimated to be substantially damaged if a 1%-annual-chance (100-yr) flood event were to occur 2. 6,751 (>= 50% damage) of 98,451 floodplain structures ○ Debris Removal Community County ○ Minus Rated <ul style="list-style-type: none"> 1) Minus Rated with FIRM Status (20% Post-FIRM, 71% Pre-FIRM, 9% Unknown) | |

| Task | Task Description | Goal |
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| | <ul style="list-style-type: none"> 2) Top Minus-Rated Post-FIRM Structures. Structures >= 3 ft. Water Depth-in-Structure. Table on graphic lists top 20 Post-FIRM structures with water depth values >= 17 ft. <ul style="list-style-type: none"> 1. Total Post-FIRM (n=4,223) 2. 3-5 ft. (n=1,111) 3. 10-15 ft. (n=187) 4. >= 15 ft. (n=46) ○ Estimated Population requiring Short-Term Shelter Needs Community County ○ Transportation Inundation <ul style="list-style-type: none"> 1) Roads and Railroads 2) Bridges ● MITIGATION (<i>What structures have been mitigated?</i>) <ul style="list-style-type: none"> ○ Elevation Certificates (Mitigated structures - Building Diagrams 5-8) ○ Mitigated Structures (Primarily mitigated structures >= 5 ft.) ○ Building Pictures of Mitigated Structures (file directory) ○ Repetitive Loss (RL) Properties. Data quality issues: Of 3,132 RL structures evaluated in 2019, only 73% could be geocoded) <ul style="list-style-type: none"> 1) RL Community 2) RL Structures ○ Buyout Properties Community County ○ Areas of Mitigation Interest (AoMI) <i>incomplete mapping statewide</i> <ul style="list-style-type: none"> 1) Identification Criteria: Identified by Repetitive Loss Structures, Substantial Damage Estimates, Mitigated Properties, High Flood Depths, High Water Marks, Similar Topography 2) Example Region 4 AoMIs and Top Post-FIRM Minus Rated Structures ○ Potential Buildings for Mitigation Adaptive Measures. (Residential & Non-Residential) ● OTHER Datasets that Support Risk Assessment. Includes COMMUNITYWIDE data. <ul style="list-style-type: none"> ○ Floodplain Ratio to Community/County <ul style="list-style-type: none"> 1) Ratio of Floodplain Building Count to Communitywide Count 2) Ratio of Floodplain Building Count to Countywide Count ○ Population Change between 2010 and 2020 Census <ul style="list-style-type: none"> 1) Community Population Change 2) County Population Change ○ Declared Disasters / Claims / Insurance Policies / Repetitive Loss (Source: CEP 2019 data) Combined Graphics <ul style="list-style-type: none"> 1) Declared Disasters with Flooding 2) Dollar Amount of Previous Claims 3) Number of Paid Losses 4) Repetitive Loss Structures 5) Flood Insurance Policies (NFIP national average is 30% according to Sep. 2022 report) 6) Percent of SFHA Structures without Flood Insurance ○ Social Vulnerability | |

| Task | Task Description | Goal |
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| | <p>1) CDC Social Vulnerability Index (2018) 2) ARC County Economic Levels (FY2022)</p> <p>Spreadsheet Based – Risk assessment tabular reports generated and organized at the Community Level (CL), Building Level (BL), and Feature Level (FL)</p> <ul style="list-style-type: none"> • Floodplain Building Inventory and Future Map Conditions • Significant Structures of Importance • Floodplain Building Characteristics • Flood Damage Loss Estimates • Mitigation • Other Risk Assessment Datasets • Metadata Table Descriptions • Refer to Risk Product Index and BLRA Report for access to risk assessment tables. <p>WV Building Level Risk Assessment (BLRA) Data and GIS Sources:</p> <ul style="list-style-type: none"> • Statewide BLRA Geodatabase (98,467 building points) • BLRA Regional Files organized by WV Planning & Development Regions • 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 <p>Risk Assessment Subject Reports (Regional or Statewide)</p> <ul style="list-style-type: none"> • Essential Facilities • Community Assets • Building Exposure and Type • Open Space Preservation (Fayette County) <p>Community Risk Assessment Matrices, Dashboards, Rankings</p> <ul style="list-style-type: none"> • Flood Risk Factor Matrices • Flood Risk Dashboards • Community Risk Rankings <p>Other Flood Products</p> <ul style="list-style-type: none"> • 3D Flood Risk Visualizations (Jefferson County) • Historical Flooding – Story Maps <ol style="list-style-type: none"> 1) Flood Risk in West Virginia: What We Learned from the June 2016 Flood 2) WV Flooded Towns, June 2016. The Historic Flooding of Southern West Virginia on June 23, 2016 3) 1985 Flood: The Historic WV Flooding of November 4-5 1985 • Pre-Disaster Planning <ol style="list-style-type: none"> 1) Preload Flood Risk Structures into FEMA’s Substantial Damage Estimator (SDE) Tool. The entire statewide flood risk inventory of 98,347 1% | |

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| | <p>floodplain structures can be preloaded into FEMA’s SDE Tool. Refer to procedural guide on how to upload building inventory data into SDE.</p> <ol style="list-style-type: none"> 2) WV SDE Data Import and Instructions 3) Target Audience: Emergency management officials and floodplain managers <ul style="list-style-type: none"> • Communications for SFHA Changes from Flood Studies <ol style="list-style-type: none"> 1) Provide risk assessment structures based on FEMA’s preliminary flood studies (mapped into SFHA, mapped out of SFHA, new BFE’s) for outreach communications to affected homeowners. In addition, restudied areas require updating floodplain management ordinance and an opportunity to review state model ordinance and incorporate higher standards. Refer to procedural instructions for more information. 2) Mail Merge SFHA Change Template and Instructions 3) Target Audience: Homeowners affected by new flood studies <p>Refer to the Index Guide spreadsheet named “RA_Info_Index.xlsx” to access the various risk assessment products (products, reports, tables, graphics, risk dashboards) published in support of FEMA’s Hazard Mitigation Plans and NFIP/CRS activities.</p> <p>Future Directions: Continue refinement of risk assessment products, tables, reports, maps, metadata, presentation materials, supporting documents, etc.</p> | |
| Other Notes | <ul style="list-style-type: none"> • EXPANDED SCOPE OF WORK: For Flood Risk Assessments, the Scope of Work expanded to include mitigation data layers: Open Space Preservation CRS estimates, Repetitive Loss Structure verification lists, Buyout Properties, Mitigated Structures, etc.) • ELEVATION CERTIFICATES. Expanded on initiative to collect Elevation Certificates and Building Pictures of select minus-rated structures to verify first-floor heights of elevated structures so flood loss damage estimates are not inflated. • COMMUNITY RATING SYSTEM: Reviewed and focused on aligning project with FEMA’s Community Rating System (CRS) program activities. CRS resources: <ul style="list-style-type: none"> ○ CRS Graphic 8.5 x 11 ○ CRS Graphic 11 x 17 ○ Example Community Open Space Credits Report Credits Table | |

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| | <ul style="list-style-type: none"> ○ State-Based CRS Points ○ CRS 2017 Manual Maximum Points ● COMMUNITY ENGAGEMENT: <ul style="list-style-type: none"> ○ Engaged in one-on-one data verification activities with floodplain managers for multiple flood-prone communities. ○ Organized stakeholder meetings with regions and communities regarding risk assessments and vulnerability analysis. ● DAM/LEVEE FAILURE RESOURCES: <ul style="list-style-type: none"> ○ Dam/Levee Resources: High Hazard Dam Risk Assessment Tables, Communities Downstream of High Hazard Dams ○ Graphics <ul style="list-style-type: none"> i) Statewide Dams and Levees ii) Dams with Inundation Zones iii) Levees ● Dam Inundation Zones: The WV Flood Tool’s query result panel for the RiskMAP View could be updated to alert a location that falls within a failed dam inundation zone. New flood inundations zones have been made available by the WV Conservation Agency and USACE for select dams. In addition, risk assessments can be done by performing an intersection between the built-up environment and flood inundation zones. ● WV Dam Inundation Viewer of 168 High Risk Dams from the WV Conservation Agency ● USACE Dam Inundation Viewer: <ul style="list-style-type: none"> ○ USACE Summersville Dam Example: https://nid.usace.army.mil/viewer/index.html ○ USACE Summersville Dam Example: https://nid.sec.usace.army.mil/viewer/index.html?dsLibrary=NID-MD00069,NID-WV06702&x=-80.901&y=38.223&z=15 | |