Glossary

Terms for WV Flood Tool and Flood Risk Assessments

A supplemental glossary to FEMA's Glossary to further define terms related to the WV Flood Tool and State Flood Risk Assessment.

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

Term	Definition
Advisory Flood Height	The water surface elevation (WSEL), in feet, of the 1% annual chance (100-year) flood at a given location, as determined using hydrology and hydraulics (H&H) analysis and the best available elevation data. This information is currently available for 35 of the 55 West Virginia counties on the WV Flood Tool. The Advisory Flood Height (or Advisory BFE) should be used with caution in the proximity of a culvert, bridge, flood control structure or other impoundment since stream crossings were not included in the hydraulic analyses for approximate floodplains. Also, if the site is close to the confluence with a larger stream, compare the advisory flood height at the location of interest to the advisory flood height or Base Flood Elevation on the larger stream to determine whether the site is within the backwater influence of the larger stream. Refer to the AFH Handout for more information.
Areas of Mitigation Interest (AoMI)	The Areas of Mitigation Interest (AoMI) dataset assists communities in determining specific actions to increase their resilience from floods. AoMI identifies currently planned mitigation activities as well as areas of potential future action. It encourages collaboration among communities within the project area by providing with them the basis to assess how various mitigation action scenarios can successfully reduce their collective flood risk. AoMIs are identified by communities as part of the State's Flood Risk Assessment and may be published to the WV Flood Tool.
Basement	Any area of the building, including any sunken room or sunken portion of a room, having its floor below ground level (subgrade) on all sides. A walkout basement is not a subgrade basement. The NFIP definition of basement does not include what is typically referred to as a "walkout" basement, whose floor would be at or above grade on at least one side.
Base Flood Elevation (BFE)	The computed elevation to which floodwater is anticipated to rise during the base (1-percent-annual-chance) flood event. Base Flood Elevations (BFEs) are shown on Flood Insurance Rate Maps (FIRMs) and on the flood profiles. On the FIRM and WV Flood Tool, the BFE is represented as a black wavy line that intersects the floodplain; BFE values displayed are rounded to the nearest foot. The BFE is the regulatory requirement for the elevation or flood proofing of structures. BFEs values from flood height grids (Restudy or Non-Restudy sources) are displayed in the Flood Query Results Panel. The BFE along with Water-in-Depth of a structure are important for identifying minus rated structures.
Building Identifier	The 20-character parcel identifier (19-02-019A-0022-0000) combined with a building address number (257 Main Street) forms the unique building identifier (19-02-019A-0022-0000_257) of various flood hazard data products (flood risk assessments, building pictures, LOMAs, Elevation Certificates, etc.) shown on the WV Flood Tool. As another example, a building located in parcel identifier of 01-08-0011-0069-0000 at the address of 604 Main St, Philippi, WV, would have a unique Building Identifier of 01-08-0011-0069-0000_604. The Building Identifier is the primary unique identifier for building-level flood risk assessments.
Community Rating System (CRS)	The National Flood Insurance Program's (NFIP) Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS: (1) Reduce flood damage to insurable property; (2) Strengthen and support the insurance aspects of the NFIP; and (3) Encourage a comprehensive approach to floodplain management. The community's CRS class is displayed in the Flood Query Results Panel of the WV Flood Tool. State-based CRS credits are provided by the WV Flood Tool to support CRS activities for its communities. For flooding and flood-related hazards (e.g., dams, landslides), CRS communities should execute a more comprehensive Floodplain Management Plan (CRS Activity 510) to integrate with its Local Hazard Mitigation Plan. While both the Local Mitigation Plan and

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

	CRS Floodplain Management Plan have similar objectives, each is administered by a different office in FEMA. RESOURCES • CRS Rating System Fact Sheet (2017) • CRS Coordinator's Manual (2017) • Mitigation Planning and the Community Rating System Key Topics Bulletin (2018) • Small Communities in the CRS (2018) • Local Hazard Mitigation Planning • CRS Floodplain Management Planning
Community Identified Regulatory Floodplain	The community-identified regulatory floodplain is the flood-prone land area that is subject to a community's floodplain development or floodplain management regulations. The regulatory floodplain includes, at a minimum, the Special Flood Hazard Area (SFHA), but may also incorporate other areas outside the SFHA that are high-risk advisory floodplain areas subject to a community's floodplain development or floodplain management regulations. A building or parcel located in the community's regulatory floodplain means that it is located in either: • The SFHA as shown on the community's Flood Insurance Rate Map (FIRM), or • A high-risk advisory floodplain outside the SFHA where the community enforces development regulations similar to those enforced for new development in the SFHA. The community must map the area and document its floodplain management regulations. High-risk advisory floodplains on the WV Flood Tool may be referenced by communities in their local floodplain ordinance.
Cross Section (XS)	A line developed from topographic information across a floodplain at which a computation of flood flow has been made to establish a potential flood elevation. Cross sections are shown on the WV Flood Tool, Flood Insurance Rate Map, and/or Flood Profiles of a Flood Insurance Study (FIS) Report. These locations can be used to cross reference the Flood Profiles to the planimetric depiction of the flood hazards. Gridded base flood elevations are also displayed in the Flood Query Results Panel of the WV Flood Tool and should match the cross-section BFE attribute in the map frame.
Datum (Horizontal)	In surveying and geodesy, a datum is a reference system or an approximation of the Earth's surface against which positional measurements are made for computing locations. A horizontal datum provides a reference frame for latitude and longitude coordinates on the Earth. The spatial data used for the WV Flood Tool are cast on the World Geodetic System horizontal datum of 1984 (WGS84), Web Mercator projection with auxiliary sphere, with horizontal units in meters. This is a commonly used coordinate system and projection for web-based mapping products. Source data was re-projected and/or transformed from Universal Transverse Mercator (UTM), geographic, or state plane coordinate systems, and North American Datum (NAD) of 1983 (NAD 83), or NAD 27. For certain query and map functions of the WV Flood Tool where accurate measurements are required, programming widgets and geometry services re-project the geometry into a more appropriate coordinate system (e.g., UTM, State Plan) for measurement. The "Web Mercator" projection used by Google Maps, Bing Maps, and Esri Online was engineered for convenience in working with cached map tiles, not for performing measurements of points, lines, or polygons.

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

Datum (Vertical)	A vertical datum is a base measurement point (or set of points) from which elevations are determined. Historically, the standard datum used by the federal government was the National Geodetic Vertical Datum of 1929 (NGVD 29). However, the North American Vertical Datum of 1988 (NAVD 88) is now the national standard. WHY DOES IT MATTER WHICH VERTICAL DATUM AN ELEVATION IS REFERENCED TO? Elevation values based on different vertical datums cannot be used together directly since they are based on a different vertical reference point. When comparing the updated flood hazard data released by FEMA with elevation information on Elevation Certificates and other documents from different sources, care must be taken to ensure all elevations are in the same datum. If they are not the same, a conversion factor must be applied so that the values are referenced to the same datum before they are used. Failure to do so can result in improper structure design (e.g., building at the wrong elevation) which can have serious implications in terms of complying with community and state building requirements. Flood insurance rates can also be impacted. WHAT ARE THE DIFFERENT VERTICAL DATUMS IN WEST VIRGINIA? (1) Base Flood Elevations for AE Zones or Updated AE Zones. The vertical datum of Base Flood Elevations recorded on official FIRMs is referenced to the to the NGVD 29 Datum for the following counties: Hampshire, Logan, McDowell, Mercer, Monroe, Ohio, and Putnam. The town of Alderson (Greenbrier/Monroe counties) is also NGVD 29, although a FEMA Restudy will update the Alderson community's FIRMs to NAVD 88 in the near future. For all other communities in West Virginia, the Base Flood Elevations of effective FIRMS are referenced to the vertical datum NAVD 88. (2) Advisory Base Flood Elevations (also known as Advisory Flood Heights) for Approximate A Zones or Advisory A Zones. The vertical datum of all Advisory Flood Height values in West Virginia is NAVD 88, except for McDowell County which is NGVD 29. (3) Ground elevation values displayed in the WV Flood Tool's Query Results Panel are referenced to NAVD 88. ARE THERE ANY TOOLS ON THE WEB TO HELP CONVERT BETWEEN DATUMS? The National Geodetic Survey has developed a tool for advanced users to convert between NGVD 29 and NAVD 88. This tool, called VERTCON, can be found at http://www.ngs.noaa.gov/cgi-bin/VERTCON/vert_con.prl. RESOURCES: • Understanding Vertical Datums (FEMA Region II, 2015) http://www.region2coastal.com/view-flood-maps-data/understanding-vertical-datums/ • Guidance for Flood Risk Analysis and Mapping Vertical Datum Conversion (FEMA 2014) https://www.fema.gov/media-library-data/1406747117296-744b6bd203c18ada4806ad4e90c18b81/Vertical_Datum_Conversion_Guidance_May_2014.pdf • Vertical Datum: New Mapping Studies Convert to Updated Vertical Datum (FEMA 2013) https://www.fema.gov/media-library-data/20130726-1615-20490-4828/vertical_datum_letter.pdf

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

Elevated Building	A building that has no basement and that has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns. Foundation walls are masonry walls poured concrete walls or precast concrete walls, regardless of height, that extend above grade and support the weight of a building. ENCLOSURE. That portion of an elevated building below the lowest elevated floor that is either partially or fully shut in by rigid walls. For an elevated building located in any A Zone that has an enclosure below the elevated floor, including a crawlspace or an attached garage, the enclosure or garage floor becomes the lowest floor for rating if any of the following conditions exists: • The enclosed space is finished (having more than 20 linear feet of interior finished wall [paneling, etc.]); or • The unfinished enclosed space is used for other than building access (stairwells, elevators, etc.), parking, or storage; or • There is an elevator below the BFE; or • The unfinished enclosed space (either the enclosure or garage) has no proper openings
Elevation Certificate	Elevation Certificates are useful for determining lowest floor elevations for BFE regulatory compliance (minus rated structures), for determining first-floor heights for building-level risk assessments, and for submitting elevation data for Letters of Map Change (LOMCs). Elevation Certificates are maintained by the local floodplain manager and may be published to the WV Flood Tool. Floodplain Managers are encouraged to publish their Elevation Certificates to the WV Flood Tool. Scan "Finished Construction" Elevation Certificates, preferably in color if pictures included, and email to WV GIS Technical Center. Name Elevation Certificate files with the Building Identifier naming convention: Full Parcel ID + Building Number (e.g., 39-04-0020-0038-0000_14466).
FIRM or DFIRM	(F)lood (I)nsurance (R)ate (M)ap. The official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community. A DFIRM is a Digital FIRM. All 55 counties in West Virginia display Digital FIRMs originating from FEMA's authoritative National Flood Hazard Layers (NFHL).
Flood Depth Grid	The base flood water depths are important for communicating flood risk. Flood depths are published in the Flood Query Results Panel and used for computing the Water Depth-in-Structure for the building-level flood risk assessments. The Water Depth is the principal input for the 3D flood visualizations. The statewide Hazus depth grid created in 2010 is not very accurate, and thus a priority is to attain model-backed depth grids for full statewide coverage. Two statewide, composite Depth Grids are organized and published separately by the source software utilized: HEC-RAS engineering software and Hazus software. While the FIRM and FIS Report describe "what is" at risk by identifying the hazard areas, the *flood depth* and flood height grids can help define "how bad the risk is within these identified areas.
Flood Hazard Zone/Area	Area on a Flood Insurance Rate Map (FIRM) categorized according to the likelihood of flooding occurrence. The Flood Zone designation is denoted in the Flood Query Results Panel and labeled in the map frame of the WV Flood Tool. A corresponding warning color denotes the degree of flood hazard risk: (1) HIGH RISK 100-YR Effective A Zones (RED Warning Color); (2) HIGH RISK Advisory Non-Regulatory Zones (ORANGE Warning Color) for Preliminary NFHL, Advisory A, Updated AE; (3) MODERATE RISK 500-YR Shaded X Zones, Levee-Protected X Zones, and Areas in Close Proximity to Flood Zones (YELLOW Warning Color); and LOW RISK for no identified flood risks (GREEN Color).
Flood Height Grid	Gridded base flood heights are important for floodplain management and flood risk assessment activities. Presently, in the Flood Query Results Panel, model-backed flood height values are displayed for Approximate A Zones and AE Zones for 35 and 10 counties, respectively. FEMA now

	accepts the Advisory Flood Heights (or Advisory BFE) displayed on the WV Flood Tool for LOMA determinations and for Elevation Certificates. Gridded base flood elevations for AE Zones (from Restudies/Non-Restudies) displayed in the Flood Query Results Panel of the WV Flood Tool should be confirmed with the Flood Profile in the Flood Insurance Study. Composite Water Surface Elevation Grids are organized and published separately by source methodology: Risk MAP Restudy, Non-Restudy (AE Zone Redelineation), and Advisory Flood Height (Approximate A Zone) studies.
Flood Map Revision	A major driver for flood map revisions in West Virginia is new Light Detection and Ranging (LiDAR) elevation data that allows for a dramatic increase in the accuracy of flood hazard mapping. This new high-resolution topography supports 1-foot contours and 1-meter digital elevation models. Ongoing flood studies in West Virginia are categorized as FEMA-Initiated or State-Initiated Studies. **FEMA-Initiated Studies:** A change in the Flood Insurance Rate Map (FIRM) for a community which reflects revised zone, base flood or other information. A FEMA-initiated study or restudy revises some or all of a community's effective flood map, resulting in both regulatory and flood risk products. FEMA's Risk Mapping, Assessment, and Planning (Risk MAP) program provides communities with flood risk information that is used for developing regulatory and flood risk products. Once the new regulatory flood maps are finalized, a community has six months to adopt the map revisions in their local floodplain ordinance. For example, the 2016 Flood Study used new topography and high-water marks to create detailed flood studies with regulatory products for eight stream reaches in Greenbrier, Kanawha, Monroe, Nicholas, Summers, and Webster counties. **State-Initiated Studies:** State-initiated map revisions, typically through the FEMA's CTP Initiative, are smaller-scale studies limited in size and scope. State flood mapping initiatives incorporate new topography with hydrology and hydraulics (H&H) models to generate high-risk advisory flood zone data. This includes the statewide map initiative of Approximate A Zones using engineering analyses to produces new floodplain boundaries, Advisory Flood Heights (Advisory BFEs) and flood depth grids for streams draining a minimum two-square mile watershed area. The advisory flood height values should be used with caution for sites in proximity to hydraulic structures (bridges/culverts/dams) or near the confluence of a larger stream. Another statewide map initiative involves the redelineation of AE Zones to produce high-risk advisory flood zones, non-restudy BFE and water depth grids. Redelineation is the method of updating effective flood hazard boundaries to match updated topographic data based on the computed water surface elevations from effective models; no new engineering analyses are performed as part of the redelineation methodology. Importantly, State-Initiated Studies produce high-risk advisory flood hazard information that will likely be incorporated into future effective regulatory or community identified floodplains.
Flood Profile	A graph of the flood elevations along the centerline of a stream. The profile displays elevations for a 100-year flood event, and often includes 10-, 50-, and 500-year flood event data. Other data on the profiles include cross sections, stream bed elevation, base flood elevation (BFE), streets/bridges that cross the streams, culverts, dams, and confluences of other streams. Flood profiles for detailed streams can be viewed on the Flood Query Results Panel of the WV Flood Tool.
Flood Risk Community Engagement Questionnaire	Communities are provided with instructions on how to validate and provide feedback on Flood Risk Report, Maps, or Tables. Communities also identify Areas of Mitigation Interest (AoMI) for the State and FEMA to review. The Areas of Mitigation Interest (AoMI) dataset should capture the mitigation interests of the community and provide targets for future mitigation actions.

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

Flood Risk Database	Provides communities with geospatial information collected during the risk assessment process and offers effective ways to visualize and communicate flood risk. The Flood Risk Assessment GIS (FRAGIS) is the name for West Virginia's flood risk geodatabase.
Flood Risk Map	A map that illustrates the overall flood risk for a community. The map can be used as an outreach tool to communicate risk more clearly and to support mitigation planning. The Flood Risk Map is viewable as an interactive map on the WV Flood Tool or as a PDF print-ready static map.
Flood Risk Report	A narrative or a community's flood risk assessment study to support the floodplain management and flood reduction activities. A Flood Risk Report is published for each county to supplement it Local Hazard Mitigation Plan.
Flood Risk Table	Excel tables that list per structure the primary building exposure and flood risk assessment attributes for communities to verify. Specific tables for Essential Facilities, Buyout Properties, etc. are also provided to communities for verification. These tables can be used by communities to enhance floodplain management and risk reduction efforts. Share links are included in tables to link records to RiskMAP View of WV Flood Tool.
Flood Risk Building: 3D Visualization	3D Flood Visualizations are rendered from the base flood water depth and building type (residential one- or two-story homes, mobile home, commercial/industrial) to effectively communicate flood risk. By describing the depth-in-structure damage according to varying flood depths, visualizations are easier for non-technical users to understand flood risks to their property in feet of water rather than comprehending the base flood elevation (BFE).
Flood Risk Building: Assessment Datasets	Various Flood Risk Assessment datasets are developed by pinpointing all primary insurable structures in the Special Flood Hazard Area or 100-year floodplain. Historical and community assets (government buildings, churches) are also inventoried. Essential facilities are inventoried to the 0.2-pecent (500-year) annual chance flood event. Required building characteristics are Occupancy Class, Foundation Type, First Floor Height, Number of Stories, Area, and Replacement Cost. Default values are populated from the State Parcel Assessment Database and modified with user-defined values. Building pictures can be linked to the risk assessment using the unique building identifier.
Flood Risk Building: Damage Loss Estimates	Building Damage Loss Estimates (Hazus): The Flood Risk Assessment dataset is generated from FEMA's OpenHazus Flood Assessment Structure Tool (FAST) and presents loss estimates in dollar values and damage percent. The depth grid, combined with an inventory of the built environment, is used by the Hazus Flood Model to determine flood loss potential, by applying the appropriate depth-damage curves, for a 100-year flood event. Besides the Building Damage Percent/Dollars Loss, other model outputs of the FAST Utility site-specific risk assessment include the Contents Damage, Inventory Damage, Debris Removal, and Maximum Restoration Time. Population per building is derived from the assessment Occupancy Type Class (e.g., Residential Single Family, Residential Multi Family) and census average residential household size. Owner-occupied homes are determined from assessment fields Tax Class and Occupancy Class.
Flood Risk Building: Future Map Condition	State-Initiated Studies produce high-risk advisory flood hazard information that will likely be incorporated into future effective regulatory or community identified floodplains. Inputs for future map conditions are high-risk advisory flood zones and LOMA's verified for positional accuracy. Communities should consider any non-regulatory zones as becoming effective and regulatory when future FEMA-initiated Flood Studies are conducted. For Future Building Map Conditions, categories are Mapped out SFHA (yellow), Mapped in SFHA (orange), No Change (red), and Regulatory Floodway (magenta star). The color symbols have land use category letters for Residential, Commercial, and Other. Buildings "Mapped Out SFHA" should be considered for a LOMA Structure Removed status while Buildings "Mapped in SFHA" should be regulated to the 100-year floodplain standard until new effective maps are published. For buildings in the "Floodway" there should be no development unless a No-Rise Certificate is issued.

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

Flood Risk Building: New Development	New Development and Basements (Building-Level Risk Assessment): The Building Year from Assessment Database is symbolized by FIRM (Pre-FIRM/Post-FIRM/Unknown) and Basement (Basement/No Basement) status. Note: A basement in the assessment database my not be a subgrade basement but a walkout basement. Hence, basement designations from the assessment records should be field verified. There should be no minus rated structures for Post-FORM structures new development.
Flood Risk Building: Repetitive Loss Structures	Repetitive Loss (RL) properties are a mitigation priority for West Virginia and FEMA. The primary objective of the RL properties strategy is to eliminate or reduce the damage to property and the disruption to life caused by repeated flooding of the same properties. Repetitive loss data is important for NFIP Coordination, Building-Level Loss Estimate Model Verification, Hazard Mitigation Planning / Implementation, and Community Rating System (CRS). Repetitive loss data of private structures at the site-address level are subject to the Privacy Act of 1974.
Floodway	The "Regulatory Floodway" is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. The “floodway” is denoted in the Flood Query Results Panel of the WV Flood Tool and a risk indicator analyzed in building-level flood risk assessments.
Freeboard	An additional amount of height above the Base Flood Elevation used as a factor of safety (e.g., 2 feet above the Base Flood) in determining the level at which a structure's lowest floor must be elevated or floodproofed to be in accordance with state or community floodplain management regulations. Most communities in West Virginia have stipulated in their local floodplain ordinance a freeboard of two feet.
Hazus (OpenHazus Flood Assessment Structure Tool)	FEMA’s Hazus is a nationally applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. The building-level flood risk assessments for a 1% annual chance flood (100-year) event utilize FEMA’s Flood Assessment Structure Tool (FAST), a GIS-based, open source utility designed by FEMA’s Hazus Program for estimating potential building losses from flood disasters. FAST was built from the ArcGIS Python script developed by Oregon’s Department of Geology and Mineral Industries (DOGAMI). A Hazus Level 2 advanced analysis increases the accuracy and precision of an analysis by incorporating user-supplied data relevant to the hazard. The flood model results support local hazard mitigation plans and other flood reduction efforts funded by FEMA’s Hazard Mitigation Grant Program (HMGP) and the State Hazard Mitigation Office.
HEC-RAS Model	The US Army Corp of Engineers' Hydrologic Engineering Centers' River Analysis System (HEC-RAS), allows users to model water features, perform multiple flooding scenarios, volumetric calculation and analysis, and more, by incorporating structures, bridges, dams, and other features of the built environment to the analysis. HEC-RAS models of flood studies can be downloaded from the Flood Query Results Panel of the Flood Tool. See the HEC-RAS User’s Manual for more information.
High-Risk Advisory Zones: Future Flood Zone Changes	**High Risk Advisory Zones:** High-risk advisory zones – Preliminary NFHL, Advisory A, or Updated AE – are non-regulatory 1%-annual-chance flood zones represented as orange-colored flood zones in the WV Flood Tool. These advisory flood zones are generated from new model-backed flood studies or from redelineation mapping. Redelineation is the method of updating effective flood hazard boundaries to match updated topographic data based on the computed water surface elevations from effective models. The public should be informed that these non-regulatory zones will most likely become effective when new Flood Insurance Rate Maps (FIRM) are published, and thus any development in these zones should be regulated to the same standards as effective high-risk flood zones. In local floodplain ordinances, communities may choose to adopt high-risk advisory zones as "community-identified floodplains" and regulated the same as the Special Flood Hazard Area of the official Flood Insurance Rate Map (FIRM). Besides showing flood prone areas that are likely to be “mapped into the SFHA” in a future FEMA Flood

	Restudy, the high-risk advisory zones are also beneficial in identifying Letters of Map Amendment (LOMAs) for structures or property that should be "removed from the SFHA." • **Preliminary (Draft) NFHL:** Preliminary FEMA National Flood Hazard Layers (NFHL) are pending to become effective on new Flood Insurance Rate Maps (FIRMs). A Preliminary Flood Zone for a 1%-annual-chance-flood (100-year flood) event is displayed on the WV Flood Tool as a high-risk advisory zone until it becomes effective on the official FIRM. Preliminary NFHL is also known as Preliminary DFIRM. • **Advisory A Flood Zone:** A model-backed Approximate A Zone is determined by using hydrology and hydraulics (H&H) analysis and the best available elevation data. Water Depth and Water Surface Elevation Grids are also companion products of Advisory A Zones. The Advisory Flood Heights or Advisory Base Flood Elevations are displayed in the Flood Query Results Panel of the WV Flood Tool. Although these high-risk advisory zones are non-regulatory flood zones, future FEMA Flood Studies most likely will incorporate these advisory zones on the official FIRM. In local floodplain ordinances, communities may choose to adopt high-risk advisory zones as "community-identified floodplains" and regulated the same as the Special Flood Hazard Area of the official FIRM. • **Updated AE Boundary:** A Non-Restudy where AE Zones undergo redelineation, a method of updating effective flood hazard boundaries to match updated topographic data based on the computed water surface elevations from effective models. Advisory AE Zones outside the SFHA are high-risk, non-regulatory flood zones. Future FEMA Flood Studies most likely will incorporate these Advisory AE Zones on the official FIRM. In local floodplain ordinances, communities may choose to adopt high-risk advisory zones as "community-identified floodplains" and regulated the same as the Special Flood Hazard Area of the official FIRM. Along with the Updated AE Floodplain Boundaries, the Depth and Water Surface Elevation Grids are products of the redelineation. Gridded Base Flood Elevations are displayed in the Flood Query Results Panel of the WV Flood Tool. Flood Heights in effective AE Zones should be confirmed with the Flood Profiles and Flood Elevation Tables, whereas flood heights or base flood elevations delineated outside the effective AE Zones of the FIRM are advisory; communities may choose to regulate Advisory Flood Heights (or Advisory Base Flood Elevations) in high-risk advisory zones the same as Base Flood Elevations in the SFHA. **Adoption of High-Risk Advisory Zones in Local Floodplain Ordinance:** The local floodplain ordinance outlines the flood zone areas where the regulations apply. To be compliant with the NFIP, these areas at a minimum must include the current effective FIS and FIRM (including any revisions). Should a community want to regulate beyond these areas, such as within an "advisory floodplain," then that community would need to formally recognize these additional areas. These areas must be formally adopted or "officially recognized" as such by the community for the regulations of the local ordinance to apply. WV Floodplain Ordinances may include language for what is commonly referred to as a "community identified floodplain" – areas of flood risk not included on the FEMA FIRM. A community-identified floodplain is outside the SFHA where the community enforces development regulations similar to those enforced for new development in the SFHA. The community must map the area and document its floodplain management regulations. Refer to the State Model Floodplain Ordinance for more guidance.

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

High-Risk Advisory Zones: Flood Risk Outreach Materials	Flood Insurance Outreach Information to Property Owners for pending Flood Zone Changes or Future Map Conditions. 1) **Preliminary National Flood Hazard Layer (NFHL)**. A FEMA-Initiated Flood Study that results in detailed, digital flood hazard maps known as Flood Insurance Rate Maps (FIRM). These preliminary draft maps include updated, high-risk Special Flood Hazard Area (SFHA). These preliminary maps are pending and in the final review process to become effective. a) <u>Property Mapped into SFHA Future Map Conditions</u> i) If you have a mortgage from a federally regulated lender and the building(s) on this parcel are within the SFHA, then by federal law, your lender must require you to carry flood insurance when these flood maps become effective. ii) Flood insurance is available through the National Flood Insurance Program (NFIP), a federally underwritten program provided by nearly 100 insurance companies and written through licensed insurance agents. iii) Contact your insurance agent to learn about lower-cost "Preferred Risk Policy" options offered by the NFIP for properties being mapped into higher-risk areas for the first time. iv) If you do not have a mortgage, it is still recommended that you purchase flood insurance. Over the life of a 30-year loan, there is about a three times greater chance of having a flood in your home than having a fire. v) Most homeowner's insurance policies do not provide coverage for damage due to flooding. vi) For more information on flood insurance, visit the National Flood Insurance Program's website, www.floodsmart.gov. b) <u>Property Mapped out of SFHA</u> i) The risk for flooding changes over time due to erosion, land use, weather events and other factors. The risk for flooding can vary within the same neighborhood and even property to property. ii) The floods of June 23 and 24, 2016, devastated communities in Central West Virginia, whereby repeated rounds of torrential thunderstorms dumped more than 9 inches of rain in the hardest hit areas, and media reports referred to the storm as a "1 in 1,000-year event." However, a research published in a 2018 FEMA Report this type of event could happen more frequently than previously thought. Of the nearly 1,000 flood insurance claims in the declared counties, 77% were in the 1% annual-chance floodplain and approximately 23% of the insurance claims were outside. On average, in floods across the country, about 25% of claims are outside the Special Flood Hazard Area, so this is consistent with the national trend. iii) Since your parcel has been building(s) on this parcel are within the SFHA iv) The new flood study has resulted in your parcel or building(s) on this parcel to be mapped outside the Special Flood Hazard Area (SFHA) and into a lower risk zone, shown on the FIRM as "X". If you have a mortgage from a federally regulated lender, you will no longer be required by federal law to maintain flood insurance when the flood maps become effective v) While flood insurance becomes optional, maintaining coverage is recommended as the flood risk has only been reduced, not removed. Lower cost flood insurance from

	the National Flood Insurance Program (NFIP) is available in low- to moderate-risk areas and you may also qualify for the even lower cost Preferred Risk Policy (PRP). Contact your insurance agent to learn more about how to convert to the PRP. For more information on flood insurance, visit www.floodsmart.gov. 2) **High-Risk Advisory A or AE Zones.** High-risk advisory flood hazard information from State-Initiated Studies that will likely be incorporated into future effective regulatory or community identified floodplains. a) Property Mapped into Future SFHA or Community Identified Floodplain i) A state-based flood map study indicates that this parcel or building(s) within the parcel has been mapped into a High-Risk Advisory Zone. This property is at high risk of a 1% annual (100-Year) chance flood event ii) A mapped High-Risk Advisory Zone (orange color on WV Flood Tool) denotes a flood hazard area that will likely be incorporated into future effective FIRM maps. New development should not occur in updated floodplains without a detailed study to show the development reasonably safe from flooding. iii) The local floodplain management regulations required by the NFIP apply only in SFHAs. However, communities may regulate development in areas of high-risk outside the SFHA. Should a community want to regulate development beyond the FIRM, then a community may formally adopt High-Risk Advisory Zones as a "community identified floodplain" in its local floodplain ordinance. iv) Most homeowner's insurance policies do not provide coverage for damage due to flooding. Contact your insurance agent to learn about lower-cost "Preferred Risk Policy (PRP)" options offered by the NFIP for properties being mapped into higher-risk flood hazard areas. When a property's flood zone changes from a non–Special Flood Hazard Zone (SFHA) to an SFHA as a result of a FIRM update, then the property owner will have to follow the guidelines of a Standard Flood Insurance Policy (SFIP). Mortgage-backed loans for properties within regulatory SFHA are required by federal law to carry flood insurance. For more information on flood insurance, visit the National Flood Insurance Program's website, www.floodsmart.gov. b) Property Owners Mapped out of Future SFHA or Community Identified Floodplain i) A state-based flood map study indicates that this parcel or building(s) within the parcel has been mapped out of a High-Risk Advisory Zone and may qualify for a Letter of Map Amendment (LOMA). ii) The Online LOMC web application allows homeowners or their designated representatives to easily request a Letter of Map Change (LOMC). Use this site if your property was inadvertently included in a flood zone, or if the addition of fill elevated your property so that it is above the flood zone. Use the WV Flood Tool to provide supporting documents including LiDAR-based elevation information if a field survey (Elevation Certificate) is not required. iii) A LOMA with a REMOVAL determination status will map the parcel or building out of the Special Flood Hazard Area (SFHA) and into a lower risk zone, shown on the FIRM as "X". If you have a mortgage from a federally regulated lender, you will no longer be required by federal law to maintain flood insurance. iv) It is important to know that many flood claims are made by property owners located outside the high-risk flood zone and that the issuance of a LOMC does not mean the structure or property is safe from all flooding. Floods greater than the 1-percent-annual-chance event (100-year flood) can, and do, occur. Therefore, because

	flooding also occurs in areas of moderate or minimal flood risk, FEMA recommends flood insurance coverage, even if it is not required by law or a lender. v) While flood insurance becomes optional, maintaining coverage is recommended as the flood risk has only been reduced, not removed. Lower cost flood insurance from the National Flood Insurance Program (NFIP) is available in low- to moderate-risk areas and you may also qualify for the even lower cost Preferred Risk Policy (PRP). Contact your insurance agent to learn more about how to convert to the PRP. For more information on flood insurance, visit www.floodsmart.gov.
Initial FIRM Date Identified	This date represents the community's first Flood Insurance Rate Map, and it is important because it represents the dividing line between two building categories called Pre-FIRM and Post-FIRM, which we will discuss in more depth later in this course. The Initial FIRM Date for each community is published on FEMA's Community Status Book. See related terms Pre-FIRM and Post-FIRM buildings.
LOMC (Letter of Map Change)	A LOMC is a letter that reflects an official revision and/or an amendment to an effective FIRM, which as various uses. If a property owner thinks their property has been inadvertently mapped in a SFHA, property owners or their representatives may submit a request to FEMA for a LOMC. In another use, FEMA issues LOMCs in place of physically revising an effective FIRM. Three of the most common LOMCs that are displayed on the EXPERT and RISK MAP Views of the WV Flood Tool. • **Letters of Map Amendment (LOMAs).** An amendment to the currently effective FEMA map which establishes that a property is not located in a Special Flood Hazard Area (SFHA). A LOMA is issued only by FEMA. Typically, a LOMA is issued when the scale of the FIRM does not allow for small areas of natural high ground to be shown outside the SFHA • **Letters of Map Revision based on Fill (LOMR-F).** An official amendment to the currently effective FEMA map. It is issued by FEMA and changes flood zones, delineations and elevations. A LOMR-F is like a LOMA, but instead of being based on natural ground elevations, the property or structure has been elevated by fill in order to elevate it above the flood elevation • **Letters of Map Revision (LOMRs).** A LOMR is an official revision to an effective FIRM map that may change flood insurance risk zones, floodplain and/or floodway boundary delineations, plain metric features, and/or BFE. Unlike LOMAs and LOMR-Fs, a LOMR usually results in reprinting a portion of a FIRM. ONLINE LOMC The Online LOMC web application allows homeowners or their designated representatives to easily request a Letter of Map Change (LOMC). Use this site if your property was inadvertently included in a flood zone, or if the addition of fill elevated your property so that it is above the flood zone. The Online LOMC tool is an alternative to the MT-1 and MT-2 paper forms and/or MT-EZ paper form. RESOURCES • How to Request a Map Amendment (Nov. 2018) • LOMA and LOMR-F Factsheet (2017)

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

LOMC Request with LiDAR	LiDAR FOR MAP AMENDMENTS LiDAR data can replace the requirement to submit elevation information certified by a licensed land surveyor or professional engineer, which can create a cost savings for property owners. However, when the Lowest Adjacent Grade (LAG) is close to the BFE, LiDAR data may not be accurate enough and require certified elevations to capture the full risk of the building. The WV Flood Tool can be used to submit LOMAs where LIDAR-derived elevation sources display contours at one or two-foot intervals. WHEN LIDAR CANNOT BE USED There are situations when LiDAR cannot be used in a LOMA request. These include applications involving the following: • Buildings or lots elevated using fill • Buildings or lots in the regulatory floodway or Zone AO • Buildings under construction. LiDAR would need to show that the lot or portion of the lot on which building will be located is above the Base Flood Elevation (BFE) • Conditional determinations • Electronic LOMAs (eLOMAs) • Potential violations identified through the LOMA process • Physical changes to the flooding source/Special Flood Hazard Area that require revisions to the Flood Insurance Rate Map • Requests to supersede previously issued LOMAs based on certified elevation data DOES MY COMMUNITY HAVE LIDAR? Not all communities have LiDAR data available. Talk to your floodplain administrator to find out if your community has LiDAR data. To be used in a LOMA request, LiDAR data must meet or exceed the U.S. Geological Survey (USGS) Quality Level 3 accuracy requirement. To learn more about this requirement, view the elevation source metadata for the WV Flood Tool. CALCULATING ELEVATIONS USING LIDAR-DERIVED PRODUCTS ON WV FLOOD TOOL The lowest adjacent grade (LAG) for a building, or the lowest lot elevation (LLE) for a lot, will be compared to the effective Base Flood Elevation (BFE) to determine the flood zone. If LAG/LLE is at or above the BFE on the current flood map, FEMA can issue a removal determination. For buildings or lots that cannot be removed from the high-risk zone using LiDAR, certified elevation data (e.g., Elevation Form, Elevation Certificate) will be required for a standard LOMA determination. • Using LiDAR-Derived Contours on WV Flood Tool For submittals that include LiDAR contour data, click on the drop-down reference layer list to make the Contours Layer in visible. Using LiDAR-derived contours of one or two-foot intervals at the highest zoom levels (1:564 and 1:282) on the WV Flood Tool, identify the lowest contour closest to (but not going through) the building. Verify the elevation value in the Flood Query Results Panel. Subtract 1 foot from the lowest

	contour to determine the applicable LAG or Lowest Lot Elevation (LLE). Cross-check Contour method with Elevation Point Data method. *Note: Using the Print Tool Function, the Best Leaf-Off Aerial Imagery is the only background layer that displays at the 1:564 and 1:282 map scales (highest two zoomed-in levels) on the Print Layout. Use a screen capture function if you want to capture other basemap layers that display in the map frame at the highest zoomed-in levels."* • Using LiDAR-Derived Elevation Point Data on WV Flood Tool For submittals that include LiDAR point data, point and click on the WV Flood Tool to determine the lowest point closest to the building (to determine the LAG) or the lowest point on the lot (to determine the LLE) by viewing the elevation values displayed in the Flood Query Results Panel. After multiple points have be taken and viewed in the Flood Query Results Panel, subtract 2 feet from the lowest point to determine the applicable LAG or LLE. If high-resolution contours are available, cross-check Elevation Point Data method with Contour method. Lastly, if a high-risk advisory depth grid touches the building footprint, then most likely the structure will not qualify for a LOMA. RESOURCES: • Using LiDAR For Map Amendments (Nov. 2018) • Guidance for Flood Risk Analysis and Mapping MT-1 Technical Guidance (November 2019), Light Detection and Ranging (LiDAR) Letter of Map Amendment (page 44)
LOMC / LOMA Revalidation Statuses	Letters of Map Amendment (LOMA) in which the positional accuracy of the x-y coordinates has been verified by legal descriptions, deed book/page number, parcel identifier, or E-911 address. Verified LOMAs are displayed in the EXPERT and RISK MAP Views of the WV Flood Tool. Current and historical LOMAs are categorized as Structure Non-Removal, Removal, or Out as Shown. Historical LOMAs have certified dates older than the • **None** – This LOMA is current with the latest FIRM panel. • **Not Incorporated** – This LOMC has been revalidated for the revised FIRM panel because it is unaffected by new or revised flood hazard data. • **Incorporated** – The modifications affected by this LOMC have been incorporated into a revised FIRM panel. This LOMA is no longer valid. • **Superseded** – This LOMC has not been incorporated into the revised FIRM panel because it is superseded by new flood hazard information, or the information available was not sufficient to make a determination. • **Contact the Community** for Revalidation Status - This LOMA has an effective date earlier than the current FIRM Panel effective date, and does not yet have a revalidation status. • **Reevaluated** (Reevaluation Needed) – This LOMA includes multiple lots or structures for which new determinations must be made, therefore it cannot be completely revalidated or superseded. Please contact the local community official for more information. RESOURCES: • Letter of Map Amendment (LOMA) Revalidation Statuses • Guidance for Flood Risk Analysis and Mapping: Summary of Map Actions and Revalidation Letters (2019)

	• Understanding FEMA's Summary of Map Actions and Revalidation Letter (2017) • Letter of Map Change Revalidation (2013) • Understanding FEMA's Summary of Map Actions and Revalidation Letter (2012)
LOMC / LOMA Verified	LOMA locations, as shown in the NFHL Viewer, are approximate. According to FEMA, the official exact location of the LOMA is in the legal property description of the LOMA Determination Document. A state-based GIS mapping initiative is improving the positional accuracy of the LOMAs and published as the "LOMA Verified" map layer on the EXPERT and RISK MAP Views of the WV Flood Tool. For the Verified LOMAs, the positional accuracy of the x-y coordinates has been verified by legal descriptions, deed book/page number, parcel identifier, E-911 address, or other reference layers. FEMA NFHL View LOMAs and the State Verified LOMAs are displayed in both the EXPERT and RISK MAP Views of the WV Flood Tool. The NFHL Viewer LOMAs are symbolized on the Revalidation Status attribute field whereas the State Verified LOMAs are symbolized on the LOMA Outcome field. • **NFHL LOMAs** – Symbolized on the Revalidation Status data field. The Revalidation status is important for flood map revisions. • **State Verified LOMAs** – Symbolized on the Outcome data field. The Outcome field is categorized as Structure Non-Removal, Removal, or Out as Shown. This outcome information is beneficial for identifying if a structure is in the SFHA and for calculating the bSF (buildings in the SFHA) for CRS communities.
Lowest Floor (also terms Bottom Floor and First Floor Height)	LOWEST FLOOR. The lowest floor of the lowest enclosed area (including a basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area, is not considered a building's lowest floor provided that such enclosure is not built to render the structure in violation of requirements. Refer to the Lowest Floor Guide. BOTTOM FLOOR VERSUS LOWEST FLOOR • Bottom Floor: The Bottom Floor is measured by the surveyor. The floor with the lowest elevation is assumed to be level; if sloped, the lowest point of the floor is used. The Bottom Floor is C2.a on the Elevation Certificate. • Lowest Floor: Interpreted by the community floodplain administrator based on multiple factors. The Lowest Floor is used for rating insurance and determines whether a structure is compliant with local floodplain ordinance. FIRST FLOOR HEIGHT VERSUS LOWEST FLOOR • First Floor Height: The First Floor Height is the depth in feet above the ground level and an important input for Hazus Flood Loss Estimates. The First Floor Height is subtracted from the Flood Depth to compute the Depth-in-Structure for a base flood. • Lowest Floor: The Lowest Floor is measured in elevation in feet above sea level and used for rating flood insurance policies.
Manufactured (Mobile) Home	A structure built on a permanent chassis, transported to its site in 1 or more sections and affixed to a permanent foundation. "Manufactured (mobile) home" does not include recreational

	vehicles. Manufacture homes occupancy class type are usually identified by the Land Use Code of assessment records or by aerial imagery. Mobile homes are considered personal property when the mobile homeowner does not own the land, and thus real estate values are not shown in the assessment records. When mobile home values are missing in the assessment records, then county mean or median mobile home replacement cost values are substituted.
Mitigation: (AoMI)	The Areas of Mitigation Interest (AoMI) dataset assists communities in determining specific actions to increase their resilience from floods. AoMI identifies currently planned mitigation activities as well as areas of potential future action. It encourages collaboration among communities within the project area by providing with them the basis to assess how various mitigation action scenarios can successfully reduce their collective flood risk. AoMIs are identified by communities as part of the State's Flood Risk Assessment and may be published to the WV Flood Tool.
Mitigation: Buyout Properties	Buyout land parcels located within floodplains that experience frequent flooding and damage due to flood events, may be altered, purchased, or have deed restrictions placed upon them by FEMA or other agencies to prevent loss of life and property damage. Property owners/communities with public lands in floodplains are compensated for their land, and the land usually becomes public green space or restored to its natural floodplain function. Mitigated buyout properties are displayed in the EXPERT and RISK MAP Views of the WV Flood Tool.
Mitigation: Hazard Mitigation Plan	Hazard mitigation planning is the process used by state and local leaders to understand risks from natural hazards and develop long-term strategies to reduce the impacts of disasters on people, property, and the environment. FEMA has two major hazard mitigation planning programs: local multi-hazard mitigation planning associated with the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) hazard mitigation provisions and floodplain management planning under the Community Rating System (CRS). The CRS Floodplain Management Planning focuses on flood risks and allows CRS-participating communities to improve their CRS class and increase their flood insurance discount under the National Flood Insurance Program (NFIP).
Mitigation: Open Space Preservation	Open Space Preservation layers restore the floodplain to its natural function and provides opportunities for credits from FEMA's Community Rating System (CRS). Open Space Preservation layers include Deed Restricted Buyout Properties, Private Lands (Nature Preserves, Land Trust) and Public Lands (state and local lands).
NFHL Viewer	FEMA's web application that contains current effective flood hazard data from the National Flood Hazard Layer (NFHL) geodatabase. In the Flood Query Results Panel of the WV Flood Tool, users can link to the NFHL Viewer at the same map extent and zoom level. Additional external links are also provided in the Flood Query Results Panel for viewing and downloading the FEMA FIRM.
Parcel Identifier	The Parcel ID is a unique number that is the basis for identifying all parcels in the WV Flood Tool and WV Property Viewer. The Parcel ID consists of six elements: County code, District code, Map number, Parcel Prefix, Parcel Suffix, and Special ID. All the elements are alpha-numeric characters except for the county and district codes which are numeric. The Root Parcel ID (e.g., 31-05-0007-0031-0015-0000) consists of all six elements separated by hyphens. The 20-character GIS Parcel ID is the principal identifier for identifying flood hazard information (buyout property parcels, LOMA property parcels, etc.) 31 - 05 - 0007 - 0031 - 0015 County District Map Parcel Suffix GIS Parcel ID: 31-05-0007-0031-0015 County: 31 (Monongalia County) District: 05 (Clinton District)

	Map: 7 Parcel Number: 31 Parcel Suffix: 15 The Viewer displays various formats of the Parcel ID. The GIS Parcel ID consists of all elements minus the Special ID (e.g., 31-05-0007-0031-0015) while the CAMA/IAS Parcel ID consists of all elements minus the county code (e.g., 05 7003100150000). The Viewer also displays abbreviated Parcel IDs in which leading zeros or spaces are removed. Examples include the parcel number search results that consist of the District-Map-Parcel (e.g., 05-7-31.15) or the parcel map labels denoted by Map-Parcel (e.g., 7-31.15).
Post-FIRM Building	For insurance rating purposes, a post-FIRM building is one that was constructed or substantially improved after December 31, 1974, or after the effective date of the initial Flood Insurance Rate Map of a community, whichever is later. A post-FIRM building is required to meet the National Flood Insurance Program's minimum Regular Program flood protection standards. For building-level Flood Risk Assessments, the Post-FIRM building is computed from the Building Year of the assessment records. If there is no Building Year listed in the property records, then the FIRM category status is unknown. The Pre-FIRM or Post-FIRM category is displayed in the Flood Risk Assessment Tab of the WV Flood Tool.
Pre-FIRM Building	For insurance rating purposes, a pre-FIRM building is one that was 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 later. Most pre-FIRM buildings were constructed without taking the flood hazard into account. For building-level Flood Risk Assessments, the Pre-FIRM building is computed from the Building Year of the assessment records. If there is no Building Year listed in the property records, then the FIRM category status is unknown. The Pre-FIRM or Post-FIRM category is displayed in the Flood Risk Assessment Tab of the WV Flood Tool.
Property Assessment Search Tool	The WV Property Search Tool (https://www.mapwv.gov/property) is a companion application of the WV Flood Tool that allows users to perform advanced search and filter queries on all property assessment records. The "Prior Ownership" search option allows users to search the parcel history back to the year 2005. This option is useful for verifying the positional accuracies of LOMAs and Mitigated Buyout Properties when prior owner and deed book information is recorded. The "Advanced" search option allows users to search for new structures in the floodplain; for example, the following filter parameters (County of Interest, Flood Hazard = High, Minimum Building Appraisal = $50,000, Building Year Minimum = 2018) will result in a record listing of all parcels that intersect high risk flood zones for 2018-19 Tax Years and building values exceed $50,000.
Property Assessment Report	Online Detailed Property Assessment Reports are available for each property in West Virginia. The assessment reports provide information for every structure (main buildings and outbuildings) on a single parcel to include: Owner Name, Mailing Address, Property Location, Tax Class (Owner Occupied), Deed Book/Page Number, Deed and Calculated Acreage, Legal Description, Land Use, Building and Land Values, Building Characteristics, Building Year, Secondary Structures, Sales History, Parcel History, Building Sketch Diagrams, and Flood Zone Hazard Risk. Building sketches with dimensions and additions are displayed for residential and farm properties. These sketch diagrams are beneficial in distinguishing among multiple structures located in a single parcel. Detailed Property Assessment Reports can be accessed in the Flood Query Results Panel or Parcel Tab of the WV Flood Tool.
Preliminary (draft) DFIRM	A community flood mapping database (DFIRM) that has been completed by the mapping partner/contractor, submitted to FEMA for validation, validated and released to the community for review by local stakeholders. Preliminary (draft) DFIRM data may be used for planning purposes in regulating development in 1% annual chance floodplain areas but does not replace

	the current FIRM or DFIRM until the Preliminary becomes Effective. Where applicable, Preliminary 1% chance flood zones are viewable in the EXPERT and RISK MAP Views of the WV Flood Tool. Preliminary NFHL floodplain boundary and water depth are shown on the WV Flood Tool. Refer to FEMA's Flood Map Changes Viewer (FMCV) to view preliminary base flood elevation x-sections and Since Last FIRM (CSLF) data in a map. View Your Community's Preliminary Flood Hazard Data (FEMA online web resource) https://www.fema.gov/view-your-communitys-preliminary-flood-hazard-data
Redelineation Mapping Method	Redelineation of riverine floodplains is a useful technique for updating flood hazard information for an effective riverine analysis that is considered valid. Redelineation is often used when effective discharges and Base Flood Elevations (BFEs) appear accurate, but the SFHA seems inaccurate (e.g., flooding losses in Zones B, C, or X; numerous Letters of Map Amendment; comparison with accurate topographic data). The flood boundaries are delineated by finding the intersection of the ground surface defined by the underlying digital terrain model and the flood surface. Redelineation involves using more detailed topographic data than what was used to prepare the effective FIRM, in order to remap the floodplain boundaries based on the flood elevations used in preparing the effective FIRM. Redelineation is to be limited to floodplains studied by detailed methods where BFEs or flood depths are designated on the effective FIRM. No new engineering analyses are performed as part of the redelineation methodology; however, redelineation can be paired with new engineering studies as part of a larger update. For riverine studies, effective flood profiles and data tables from the Flood Insurance Study (FIS) report, Base Flood Elevations (BFEs) from the Flood Insurance Rate Maps (FIRMs) and supporting hydrologic and hydraulic analyses are used in conjunction with the updated topographic data to formulate new floodplain boundaries. Redelineation is part of a statewide flood mapping initiative to create Updated AE Boundaries and Non-Restudy BFE and Depth Grids. More Information: FEMA Guidance for Flood Risk Analysis and Mapping - Redelineation Guidance (November 2019) and FEMA Riverine Mapping and Floodplain Boundaries Guidance (November 2019)
Risk MAP	The FEMA vision for identifying, assessing, communicating and mitigating the risk associated with hazards such as flooding. MAP = (M)apping, (A)ssessment and (P)lanning. The RISK MAP View of the WV Flood Tool shows building-level risk assessments for a 1% annual chance (100-year) flood event.
Special Flood Hazard Area	Special Flood Hazard Areas are high-risk areas subject to inundation by the base (1-percent-annual-chance) flood. They are also known as 1-percent-annual-chance floodplains, base floodplains, or 100-year floodplains. The Special Flood Hazard Areas are depicted in all three Views of the WV Flood Tool and by three different cartographic representations.
Structure or Building	For floodplain management and flood risk assessment purposes, a structure is a walled and roofed building that is principally above ground, as well as a manufactured home. The terms "structure" and "building" are interchangeable in the National Flood Insurance Program (NFIP). Residential and non-residential structures are treated differently. A residential building built in a floodplain must be elevated above the Base Flood Elevation (BFE). Non-residential buildings may be elevated or floodproofed. A "Building" is • A structure with two or more outside rigid walls and a fully secured roof and that is affixed to a permanent site; or

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

	• A manufactured home (a "manufactured home," also known as a mobile home, is a structure built on a permanent chassis, transported to its site in 1 or more sections and affixed to a permanent foundation); or • A travel trailer without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws. "Building" does not mean • A gas or liquid storage tank, a recreational vehicle, a park trailer, or other similar vehicle, except as described above; or • Outbuildings, garages, carports, accessory structures, or other secondary structures that are typically less than $10,000 in value or small than 300 square feet. • Appurtenant structures less than 300 square feet in size and valued at less than $7,000. See the State Model Floodplain Ordinance. As part of the State Flood Risk Assessment, all primary insurable structures in high-risk floodplains are inventoried and published to the RISK MAP View of the WV Flood Tool.
Zone Designation	Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area. FEMA Flood Zone Designations are regulatory zones A, AE, AO, AH, and X. High-risk advisory flood zone designations are Advisory A and Updated AE. All flood zone designations are displayed in the map frame and Flood Query Results Panel of the WV Flood Tool.
Zone A *(High Risk)* *Approximate A*	Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones. In stream miles, Approximate A Zones cover 70% of the 1% percent flood zones in West Virginia. In the Results Panel, Zone A (or Approximate A Zone) is indicated by a red warning color in the WV Flood Tool. The zone designation, advisory base flood height, and flood depth are displayed in the Flood Query Results Panel of the WV Flood Tool. State-Initiated Map Revisions (Advisory A): State-initiated map revisions have resulted in model-backed Advisory Flood Heights and flood depth grids for 35 counties in West Virginia. See glossary terms High Risk Advisory Zones and Zone Advisory A.
Zone AE *(High Risk)*	Areas subject to inundation by the 1-percent-annual-chance flood event with base flood elevations determined by a "detailed" engineering flood study. In stream miles, AE Zones cover 30% of the 1% percent flood zones in West Virginia. In the Results Panel, Zone AE is indicated by a red warning color in the WV Flood Tool. The zone designation, base elevation, FIS flood profile, and flood depth are displayed in the Flood Query Results Panel of the WV Flood Tool. State-Initiated Map Revisions and WV Flood Tool: State-initiated map revisions have resulted in Updated AE Zones for select counties in West Virginia using the redelineation methodology. Refer to glossary terms Redelineation, High-Risk Advisory Zones, and Zone Updated AE.
Zone AH *(High Risk)*	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between one and three feet. Base Flood Elevations (BFEs) derived from detailed hydraulic analyses are shown in this zone. The only Zone AH in West Virginia is in Petersburg in Grant County. Zone AH is a high-risk flood zone indicated by a red warning color in the WV Flood Tool.

Glossary

Terms for WV Flood Tool and Flood Risk Assessments

Zone AO (High Risk)	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown in this zone. The only Zone AO in West Virginia is in Shepherdstown in Jefferson County with a sheet flow of 3 feet. Zone AO is a high-risk flood zone indicated by a red warning color in the WV Flood Tool.
Zone Advisory A (High Risk)	A High-Risk Advisory A Flood Zone indicated by an orange warning color in the WV Flood Tool. High-risk advisory zones include corresponding flood height and depth grids. See High Risk Advisory Flood Zone.
Zone Updated AE (High Risk)	A High-Risk Advisory AE Flood Zone indicated by an orange warning color in the WV Flood Tool. High-risk advisory zones include corresponding flood height and depth grids. See High Risk Advisory Flood Zone.
Zone X Shaded (Moderate Risk)	Moderate risk areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by a levee. No BFEs or base flood depths are shown within these zones. Zone X shaded is used on new and revised maps in place of Zone B. Moderate Risk Flood Zones are denoted by a yellow warning color in the WV Flood Tool.
Zone X (unshaded) (Low Risk)	Minimal risk areas outside the 1-percent and 0.2-percent-annual-chance floodplains. No BFEs or base flood depths are shown within these zones. Zone X (unshaded) is used on new and revised maps in place of Zone C. Minimal or low risk areas are denoted by a green warning color in the WV Flood Tool.

Compiled by Kurt Donaldson, West Virginia University