West Virginia Statewide Risk Assessment: Prioritize At-Risk Significant Structures

Many communities in West Virginia are updating their hazard mitigation plans (HMPs) to reflect current risks and priorities. These communities now have access to a wealth of detailed information on local flood and landslide risks. The data were produced by the West Virginia Statewide Risk Assessment. This is an ambitious project led by the West Virginia GIS Technical Center (WVGISTC) at West Virginia University. It features building-level risk assessments for flood and landslide hazards across the state. They cover all of the state’s 11 regions, 55 counties, 229 incorporated places, and 55 unincorporated areas.

About This Resource

This fact sheet is the third in a series published by FEMA Region 3. The goal is to help mitigation planning teams use the West Virginia Statewide Risk Assessment for plan updates. The three fact sheets should be read in order:

1. *Overview:* The first fact sheet gives an overview of the Statewide Risk Assessment’s datasets. It explains how planning teams can use the results in each phase of mitigation planning.
2. *Identify At-Risk Significant Structures:* The second fact sheet focuses on analyzing exposure, vulnerability, and impacts from flood hazards. It explains how to get the data, extract key information, and add local context.
3. ***Prioritize At-Risk Significant Structures****:* The third fact sheet focuses on summarizing exposure and vulnerability from flood hazards. It explains how to tap into local values to set priorities and create problem statements.

About the West Virginia Statewide Risk Assessment

The WVGISTC developed this project with support from FEMA and the state Emergency Management Division. It aims to help planning teams understand local disaster risks in more detail and create more effective solutions. The project focuses on floods and landslides. These are the two costliest natural disasters in the state.

The Statewide Risk Assessment includes the following information: 1) a full inventory of the buildings in the state; 2) detailed, building-level flood risk assessments; and 3) detailed, building-level landslide risk assessments. The flood risk assessments are known as Total Exposure in Floodplain (TEIF). The landslide risk assessments are known as Total Exposure Area Landslide (TEAL). These results are provided in a range of formats, including spreadsheets, reports, maps, GIS files, and interactive map viewers. Plan owners and planning consultants can access the results online. They can also ask the WVGISTC for a customized data package.

Step 1: Talk About What Matters

Communities have limited time and resources to mitigate local flood risks. That is why it is important to set priorities. Planning teams have to decide which risks to address now, and which can wait until later. To set priorities, planning teams should first talk about “what matters” to them. They should discuss what flood impacts would disrupt their community. They should also think about which impacts may be more or less important. Some flood impacts are listed below, along with where to find information on each one. Planning teams may want to add or remove items from this list based on the local context. They may also want to rank the impacts from high to low importance.

**Impacts to Structures and Infrastructure**

* Building repair costs (see Column CJ, Building Dollar Loss and Column T, FIRM Status)
* Damage to utility systems (see Column AZ, Critical Infrastructure, to determine building type)

**Impacts to the Economy**

* Inventory losses (see Column CR, Inventory Dollar Loss)
* Sales losses (see Column CY, Maximum Restoration Time)
* Wage losses (see Column CY, Maximum Restoration Time)
* Loss of tax revenues (local context)
* Job losses (local context)

**Impacts to People**

* Loss of life and injury (see Column U, Flood Depth, and Column CE, Water Depth in Structure)
* Disruptions to services for older adults (local context)
* Disruptions to services for children (local context)
* Disruptions to emergency medical services (see Column AZ, Critical Infrastructure, to determine building type)
* Disruptions to other community lifelines (see Column AZ, Critical Infrastructure, to determine building type)

Step 2: Select the Top Priorities

Talking about which impacts matter the most will help the planning team sift through the wide range of information on exposed/vulnerable assets and potential impacts. The second fact sheet in this series explained how planning teams can use the Statewide Risk Assessment to get key information on significant structures (community assets or essential facilities) that are at-risk from flooding. The final output will be a table of exposed assets. This table may have tens or hundreds of rows for each county. The planning team can look at this table through the lens of “what matters” to their community. This can help the team agree on their top priorities for mitigation.

There are many ways to structure the process to agree on top priorities. One way is to look at the table of vulnerable assets one impact at a time and note the top assets for each. For example, the planning team may agree that disruption to emergency medical services is an impact of high importance to their community. To find the at-risk buildings with links to this impact, the team could look at the Critical Infrastructure column of the exposed assets table. They could also look at the Flood Depth column, the Water Depth in Structure column, and the local information. This process may find three at-risk buildings that help deliver emergency medical services. It may also find that two of those buildings are expected to have high flood depths and first floor water depths. The team could highlight these two rows as the most vulnerable and move on to the next impact. This process would lead to a shorter list of vulnerable assets that are a high priority for mitigation.

Step 3: Create Problem Statements

Planning teams still need to summarize the short list formed above. That way, plan participants can use the findings to guide the mitigation strategy, and share them with local decision makers. One suggested approach is for the team to create problem statements for each high-priority significant structure. These short and simple statements highlight key issues from the data. An example problem statement is: “The North Creek Sewage Treatment Plant is located in the high-risk flood zone. It has been damaged by past flood events. It serves 10,000 residential and commercial properties.” These problem statements can help drive local action to keep communities safe.