REGION 4 PDC

Multi-Jurisdictional Hazard Mitigation Plan

JH Consulting LLC

REGION 4 PLANNING AND DEVELOPMENT COUNCIL
HAZARD MITIGATION PLAN
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SECTION 1.0

INTRODUCTION

Section 1.0 provides introductory material for the regional Hazard Mitigation Plan (HMP). This section presents an overall purpose statement, documents the process used to develop the plan, and describes the planning area in detail.

1.1 PURPOSE STATEMENT

This multi-jurisdictional hazard mitigation plan has been completed in accordance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000. The guidelines for the completion of this plan appear in the Code of Federal Regulations (CFR) under Title 44: Emergency Services, Part 201.6. The West Virginia Division of Homeland Security and Emergency Management (WVDHSEM) further monitored the planning process. Funding for the project was distributed by the WVDHSEM under the Flood Mitigation Assistance (FMA) program.

The Region 4 Planning and Development Council (PDC) acted as the lead agency for the completion of this plan. The PDC contracted the creation of the document out; the plan was completed between August, 2008, and January, 2011.

The *Region 4 Multi-Jurisdictional Hazard Mitigation Plan* is considered "multi-jurisdictional" for several reasons. In addition to the five (5) county governing bodies, all 26 municipal member governments participated in the data compilation and action plan development through the efforts of individual county offices of emergency management. All municipalities are represented by at least one (1) project in the action plan. Further, all government entities in Region 4 formally adopted the plan by resolution.

It is significant to note that this document mimics the all-hazards approach that the local emergency management community takes as part of its regular operation. Such a decision was considered prudent because county-level emergency management offices throughout Region 4 are the ones charged with the maintenance and implementation (at a coordinating level) of many of the strategies listed in this plan. As such, this document assumes that the responsibility for mitigation activities rests with the lowest affected jurisdictional level, which is also consistent with the National Incident Management System (NIMS).

A number of documents were utilized as resources throughout the development of the HMP. References to these documents are, at times, direct and cited; other references are indirect and implied. This paragraph serves to formally recognize these documents.

- *Fayette County Multi-Jurisdictional Hazard Mitigation Plan*
- *Greenbrier County Commodity Flow Study*
- *Greenbrier County Comprehensive Plan*
- *Greenbrier County Multi-Jurisdictional Hazard Mitigation Plan*
- *Greenbrier County Vulnerability Assessment*
- *Nicholas County Commodity Flow Study*
- *Nicholas County Industrial Prospectus*
- *Nicholas County Multi-Jurisdictional Hazard Mitigation Plan*
- *Nicholas County Vulnerability Assessment*
- *Pocahontas County Multi-Jurisdictional Hazard Mitigation Plan*
- *Region 4 Comprehensive Economic Development Strategy (CEDS)*
- *Webster County Commodity Flow Study*
- *Webster County Emergency Operations Plan*
- *Webster County Multi-Jurisdictional Hazard Mitigation Plan*

Organization of the Plan

This plan has been organized in a way that both follows the federal criteria for hazard mitigation plans and is user-friendly.

- **Section 1.0: Introduction:** Describes the process used to develop the plan as well as profiles the planning area.
- **Section 2.0: Risk Assessment:** Identifies and profiles the hazard risks most probable throughout the region. This section also analyzes the regional implications of the risks (i.e., how does an occurrence of a hazard in one county affect the neighboring county). *NOTE: Hazard profiles contain averaged loss estimates. Such estimates are based on the county-specific loss estimates (and asset inventories), which are developed and maintained separately by individual jurisdictions.

- **Section 3.0: Mitigation Strategy:** Identifies mitigation projects to be undertaken by the member governments in the region. Again, the regional implications of implementing these projects are examined.
- **Section 4.0: Plan Maintenance Process:** Identifies the process by which the member governments plan to update their own mitigation efforts as well as how this document is to be maintained.

1.2 DOCUMENTATION OF THE PLANNING PROCESS

§201.6(b) and 201.6(c)(1)	An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval; (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information. [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

To guide the completion of this plan, a multi-jurisdictional core planning team was established. This team was comprised of key officials with a stake in mitigation, and included the following:

- Fayette County Office of Emergency Services (FCOES)
- Greenbrier County Emergency Management Agency (GCEMA)
- Nicholas County Office of Emergency Services (NCOES)
- Pocahontas County Office of Emergency Management (PCOEM)
- Webster County Office of Emergency Services (WCOES)
- Region 4 Planning and Development Council (PDC)

The Region 4 PDC relied heavily upon the individual efforts of its member jurisdictions to facilitate the bulk of this process. Each county in the region undertook its own project to update its multi-jurisdictional hazard mitigation plan. These plans included the municipal jurisdictions in the counties and were originally developed in 2003 and 2004. During the updating process, the Federal Emergency Management Agency (FEMA) and West Virginia Division of Homeland Security and Emergency Management (WVDHSEM) began to encourage the regionalization of mitigation plans following a model from other states in FEMA's Region 3. This document is the finalization of the initial regional process for the member governments in Region 4.

The Region 4 PDC determined it most feasible to support the county efforts to update their own documents as an extension of the original planning process and plan maintenance process that all adopted in 2004. As a capstone to that support, Region 4 PDC agreed to summarize the risks throughout the region as well as the themes of mitigation strategies in this document as a means of identifying regional implications of the data. As a result, participating jurisdictions can be sure of the effects their projects could have on neighboring jurisdictions (especially those in other counties). The selection of mitigation projects may then be more efficient and better maximize the use of available funds.

Beginning in 2008, the Region 4 PDC began coordinating with the WVDHSEM – Mitigation and Recovery Division on this project. Region 4 PDC and the WVDHSEM decided that it was appropriate to contact a consultant about contracting individually with the fifth and final county and possibly with the PDC itself to ensure a level of consistency throughout all of the mitigation documents. (*NOTE: It is significant to note that all counties that had started their own processes were using the same consultant.)

On August 12, 2008, Region 4 PDC hosted a meeting with all county emergency managers in the region and the above-referenced consultant. A representative from the WVDHSEM also attended via conference call. At this meeting, it was determined that the consultant could work with the PDC on the development of this summary and that it would do so concurrently while updating the individual plans of all counties within the region. The fifth county in the region – Fayette County – also agreed to negotiate a contract with the consultant to ensure completion of their own mitigation plan and consistency with the other plans in the region.

Throughout 2009 and 2010, the consultant worked with the individual counties and Region 4 PDC to create both updated individual documents and the framework for the initial regional document. The Region 4 PDC actively discussed this project with its member governments at its regular council meetings. Further, an advertisement was published in all five (5) member counties encouraging the public to visit the Region 4 PDC office to review the regional plan in its final draft form (see Appendix 4). Coupled with the efforts of the individual counties to engage their populations in the process, this extra step was deemed sufficient. Following document creation and public review, the plan was sent to the WVDHSEM and FEMA Region 3 for review and approval.

Following approval of the document, all member governments were provided the opportunity to officially adopt the plan. Copies of executed resolutions will be included as

a part of Appendix 4.

As can be seen, the regional and county planning processes were completed concurrently. To ensure overall coordination of the final regional summary, the Region 4 PDC facilitated a "review session" during which the participating jurisdictions could be sure that their risks and mitigation strategies were presented consistently in the regional summary as in their individual plans. Further, all participating jurisdictions were provided with an electronic copy of this document, allowing them to continually reference the implications of their mitigation projects on neighboring jurisdictions and in the region as a whole.

The Region 4 PDC submitted letters to each of the planning and development councils in West Virginia in an effort to share information and work collaboratively to reduce hazard vulnerabilities. This letter provided a brief overview of this document's findings and invited representatives from those PDCs to view the plan at the Region 4 office (or be sent an electronic copy upon request).

It is significant to note that though the creation of this document would not be considered an "update", it did take information previously compiled in "county" formats and re-organized it. As such, a general section listing with a bulleted list of updates cannot be generated.

To demonstrate, however, good faith with the member governments who funded their own updates, the PDCs contractor submitted a draft of the regional plan to each county along with a list of the ways that the information contained in their individual plan had been altered. (Drafts were submitted to the county-level emergency managers in Fayette, Greenbrier, Nicholas, Pocahontas, and Webster Counties. The contractor asked the emergency managers to share the information with the municipal jurisdictions in those counties.) This list went section-by-section through the regional document, describing the alterations and asking for comments. See Appendix 4 for a reproduction of this list.

1.3 REGION PROFILE

Region 4 Planning and Development Council (PDC) is comprised of a total of 31 member governments, five (5) of which are counties and 26 of which are municipalities. Table 1.3.1 lists the member governments.

Table 1.3.1

NAME	TYPE	COUNTY
Alderson	Town	Greenbrier
Ansted	Town	Fayette
Camden-on-Gauley	Town	Webster
Cowen	Town	Webster
Durbin	Town	Pocahontas
Fayette	County	N/A
Fayetteville	Town	Fayette
Gauley Bridge	Town	Fayette
Greenbrier	County	N/A
Hillsboro	Town	Pocahontas
Lewisburg	City	Greenbrier
Marlinton	Town	Pocahontas
Meadow Bridge	Town	Fayette
Montgomery	City	Fayette
Mount Hope	City	Fayette
Nicholas	County	N/A
Oak Hill	City	Fayette
Pax	Town	Fayette
Pocahontas	County	N/A
Quinwood	Town	Greenbrier
Rainelle	Town	Greenbrier
Renick	Town	Greenbrier
Richwood	Town	Nicholas
Ronceverte	City	Greenbrier
Rupert	Town	Greenbrier
Smithers	City	Fayette
Summersville	City	Nicholas
Thurmond	Town	Fayette
Webster	County	N/A
Webster Springs (Addison)	Town	Webster
White Sulphur Springs	City	Greenbrier

Transportation

The transportation network of the Region 4 area includes four (4)-lane, divided highways, two (2)-lane roadways, and single-lane roadways. This network passes through a mostly rural and mountainous area; therefore, many of the routes are curvy and traverse steep grades. The primary transportation routes through Region 4 are as follows:

- Interstate 64
- US Route 19
- US Route 60
- US Route 219

Secondary routes are as follows:

- State Route 15
- State Route 20
- State Route 39
- State Route 41
- State Route 92

I-64 passes east-west through only Greenbrier County in the southern portions of Region 4. US 60 – a two (2)-lane road – follows east-west through Fayette and Greenbrier Counties. (Its route in Greenbrier County closely mirrors I-64.) The other four (4)-lane highway, US 19, passes north-south through central Nicholas and Fayette Counties. Both US 219 and SR 92 run north-south through the eastern portions of the region (Greenbrier and Pocahontas Counties) and are both well maintained roadways that see heavy truck traffic.

Several state routes also serve as secondary transportation routes. The roadways are largely well-maintained two (2)-lane highways; they are, however, somewhat more rural that the routes listed as “primary”.

Economy

In all five (5) counties, the economy (i.e., local work force) is driven by government and the hospitality industry. Additionally, the education and retail trade industries are consistently strong in all counties. The high rank of hospitality is not surprising, giving the number of tourism-based events and locations in the region (e.g.,

New River Gorge Bridge, whitewater rafting, Greenbrier Resort, West Virginia State Fair, etc.). Table 1.3.2 shows the top four (4) industries in each county, with the number of individuals employed by each.

Table 1.3.2

Top Industries by Jurisdiction				
County	*INDUSTRY 1 Name (#)*	*INDUSTRY 2 Name (#)*	*INDUSTRY 3 Name (#)*	*INDUSTRY 4 Name (#)*
Fayette	Government (2,994)	Education & Health (1,897)	Retail Trade (1.845)	Leisure & Hospitality (1.604)
Greenbrier	Leisure & Hospitality (2,553)	Education & Health (2,497)	Government (2,118)	Retail Trade (2,005)
Nicholas	Government (1,803)	Natural Resources & Mining (1,043)	Retail Trade (1,444)	Education & Health (922)
Pocahontas	Leisure & Hospitality (848)	Government (807)	Manufacturing (327)	Retail Trade (322)
Webster	Government (562)	Natural Resources & Mining (530)	Education & Health (305)	Retail Trade (200)

Source: WVBEP

All five (5) counties have available space for development, primarily commercial/business but also some space for industrial development. In Nicholas and Fayette Counties, much of this land is located along US 19. In Greenbrier County (and parts of Fayette), additional land is available along Interstate 64. Webster and Pocahontas Counties have smaller business parks available, with most of the occupants in these parks focused on natural resources-based operations. All five (5) counties employ Economic Development Authorities (EDAs) that work to bring development and jobs to the counties. The top employers, by jurisdiction, are as follows (*Source: WV Bureau of Employment Programs*).

- Fayette County
  - Fayette County Board of Education
  - Mount Olive Correctional Complex
  - Wal-Mart
  - Global Contact Services, LLC
  - West Virginia University

- Greenbrier County
  - Greenbrier County Board of Education
  - Greenbrier Hotel Corporation
  - Greenbrier Valley Medical Center
  - Wal-Mart
  - West Virginia Division of Highways

- Nicholas County
  - Nicholas County Board of Education
  - Alex Energy, Inc. (Intrepid Mining)
  - Summersville Memorial Hospital
  - Wal-Mart
  - Columbia West Virginia, Inc.

- Pocahontas County
  - Snowshoe Mountain, Inc.
  - Pocahontas County Board of Education
  - Inter-State Hardwoods Company, Inc.
  - Pocahontas Memorial Hospital
  - Associated Universities, Inc.

- Webster County
  - Webster County Board of Education
  - ICG Eastern, LLC
  - Brooks Run Mining Company, LLC
  - Webster County Memorial Hospital
  - ASI, Inc.

Climate

The climate of the area served by the Region 4 PDC is generally a humid continental climate with warm to hot, humid summers and cold winters, increasing in severity with elevation. The weather, however, is subject to change. The plant hardiness zones (as determined by the US Department of Agriculture [USDA]) range from zone 5b

in the central Appalachian Mountains to zone 7a in the warmest parts of the lowest elevations.

Average January temperatures range from a low of 25°F in Pocahontas County to 30°F in Fayette and Nicholas Counties. As can be seen, temperatures are generally cooler as the elevation rises. July averages range from 70°F to 71°F.

Annual precipitation ranges from less than 32 inches (81 cm) in the lower eastern section to more than 56 inches (140 cm) in higher parts of the Allegheny Front. In the Region 4 area, an average of 45.2 inches of precipitation falls annually. Slightly more than half the rainfall occurs from April to September. West Virginia is also one of the cloudiest states in the nation. In addition to persistent cloudy skies caused by the damming of moisture by the Alleghenies, West Virginia also experiences some of the most frequent precipitation in the nation, with Snowshoe averaging nearly 200 days a year with either rain or snow. Snow usually lasts only a few days in the lower sections of the region but may persist for weeks in the higher mountain areas. Average snowfall in the Allegheny Highlands can range up to 180 inches (460 cm) per year.

DEMOGRAPHICS

Demographic data has been consolidated based on Census data from each of the counties unless otherwise noted.

Population

The population of the area represented by the Region 4 PDC is 126,324 according to 2005 Census estimates. A breakdown by counties is shown in Figure 1.3.1 (*Source: US Census Bureau*). Generally speaking, the majority of the population is located in the southern portion of the region. Such a figure could be expected given the presence of major thoroughfares such as US 19, US 60, and Interstate 64. Additionally, the northern counties of Pocahontas and Webster are slightly more mountainous than the remaining three (3) counties. Approximately 64% (81,387 residents) of the region's population resides in its two (2) southernmost counties.

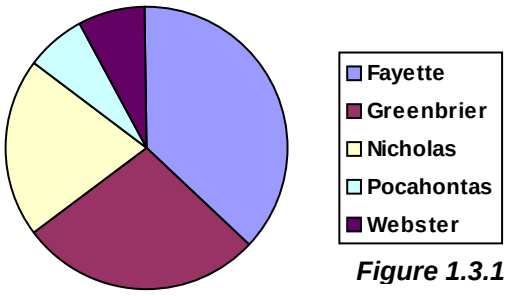


Figure 1.3.1

Nearly 30% of the population in the region lives within a municipality (approximately 38,167 residents). Many of the municipalities lie along the arterial transportation routes of the region: US 19, US 60, and Interstate 64. As much as 22% of the total regional population lives along these routes.

Housing

As with population, it is not surprising to see that counties with the counties with a more robust transportation infrastructure have a higher number of housing units. What is also interesting to note is that the majority of these housing units are along the major transportation routes throughout the region. There are over 65,000 housing units in the region. On average, 79% of residents in the region own their own homes. (The average median value of housing is $58,740.)

Figure 1.3.2 shows the distribution of housing across the region. Table 1.3.3 provides a more detailed overview of the housing characteristics in each one of the counties (*Source: US Census Bureau*).

Figure 1.3.2

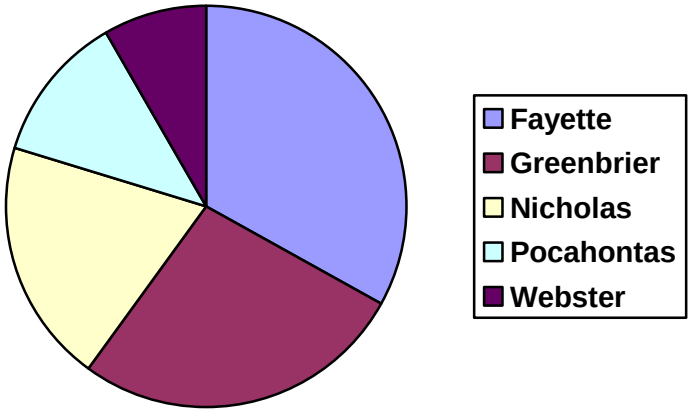


Table 1.3.3

Housing Characteristics in Region 4 Counties					
Demographic	*Fayette*	*Greenbrier*	*Nicholas*	*Pocahontas*	*Webster*
Housing Units	2,616	17,644	12,895	7,912	5,452
Owner Occupied	14,625	11,156	8,877	3,079	3,167
Renter Occupied	4,320	3,415	1,845	756	843
Ownership Rate	77.2%	76.6%	82.8%	80.3%	79.0%
Median Value	$50,800	$71,300	$60,100	$64,000	$47,500

UTILITIES

Utilities are provided by many different companies. Electricity is provided by Allegheny Power and American Electric Power (AEP). Allegheny provides power to the majority of Fayette, Pocahontas, and Webster Counties and provides electricity to portions of Nicholas and Greenbrier. AEP provides the majority of the electricity to Greenbrier County. Telephone service is provided primarily by Frontier Communications. Cellular and internet connectivity is provided by numerous private companies, including Verizon, AT& T, US Cellular, etc.

Water and wastewater service is also provided in a variety of ways. In Fayette, Greenbrier, Nicholas, and Pocahontas Counties, most municipalities provide water service which is supplemented, primarily in unincorporated areas, by Public Service Districts (PSDs). Webster County's water service is provided by four (4) PSDs and West Virginia American Water Company. Many residents still rely on private water wells throughout the region. Public sewer service is generally less available than public water. It is provided primarily by the larger municipalities in the region.

ANALYZING DEVELOPMENT TRENDS: CURRENT AND FUTURE LAND USE

§201.6(c)(2)(ii)(C)	[The plan should describe vulnerability in terms of] providing a general discussion of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

All five (5) counties in the region are largely rural. All counties are located in what is generally considered a mountainous region. As such, the potential for development is somewhat limited. The topography often drives development to flatter areas which are often in or near floodplains. Local floodplain development regulations carefully balance the needs for economic development and growth in the employment sector with a basic responsibility to buffer potential and existing businesses from the effects of hazards. All counties indicated that the majority of the commercial and industrial development in their counties is located in or near the municipalities. Several development sites have been established along the primary roadways throughout the region.

The corridor between Summersville and Oak Hill is heavily developed with residential and retail establishments. Recreational areas, including Summersville Lake, the New River Gorge Bridge, and Hawks Nest State Park are also located along or near this corridor. The Interstate 64 corridor through southern Fayette County and Greenbrier County is also seeing more commercial and industrial development.

Denser residential development is likely to continue to occur near to municipalities and along roadways. As a general statement, the PDC has indicated that the primary sites for development are the business parks. Other types of development, such as commercial and industrial, can be anticipated in the following areas.

- Fayette County

Table 1.3.4

Targeted Development Areas	Primary Potential Hazard
Government and industrial development near the new National Guard Armory in Glen Jean	Winter Storm
Wolf Creek Business Park in Oak Hill	Winter Storm
Commercial (i.e., retail) development just south of Fayetteville (and north of Oak Hill) on US 19	Hazardous Materials

- Greenbrier County
  - Most of Greenbrier County's land use is labeled as "Resource Stewardship" by Greenbrier County Planning.
  - The PDC has indicated that the Rainelle Business Park is also another area for targeted growth.
  - "Type" of area refers to labels given by Greenbrier County Planning.

Table 1.3.5

Targeted Development Areas	"Type" of Area	Primary Potential Hazard
Along SR 20 from Sims to Rainelle	Designated Growth	Flooding
Along US 60 from county line and Rainelle to Rupert	Designated Growth	Flooding
Near the community of Dawson	Designated Growth	Flooding
Around the Clintonville/Meadow Bluff interchange of I-64	Designated Growth	Flooding
In the county's industrial park near the Greenbrier Valley Airport	Designated Growth	Flooding
Along the outskirts of Lewisburg	Designated Growth	Land Subsidence
To the immediate east of Lewisburg	Transition	Land Subsidence

- Nicholas County

Table 1.3.6

Targeted Development Areas	Primary Potential Hazard
Industrial development in the Northside Industrial Park along US 19	Hazardous Materials
Glade Creek Business Park outside of Summersville on SR 41	Winter Storm
Continued commercial (i.e., retail) development along US 19 in and near Summersville	Hazardous Materials

- Pocahontas County

Table 1.3.7

Targeted Development Areas	Primary Potential Hazard
Commercial development in the Edray Business and Technology Park	Winter Storm
Commercial re-development in downtown Marlinton and Durbin	In Marlinton – Flooding

- Webster County

Table 1.3.8

Targeted Development Area	Primary Potential Hazard
Commercial and industrial development in the county's industrial park near Gladeview	Winter Storm

Many rural areas in the region see mining, timbering, and natural gas operations. In general, mining and timbering is declining. (Webster and Nicholas Counties see the most mining and Pocahontas County sees the majority of the timbering in the region.) The oil and natural gas industry is rapidly expanding across West Virginia, although its development in the Region 4 area has been slower than in other areas of the state.

Significant changes in land use are not expected. As such, local officials and emergency managers should concentrate mitigation efforts on the existing high-density population areas and those along arterial transportation routes.

SECTION 2.0

RISK ASSESSMENT

Section 2.0 is a multi-hazard risk assessment, analyzing primarily the natural hazards affecting the entire region. This particular assessment includes brief analyses of the hazardous material and terrorism risks. In addition to a simple identification of applicable hazards, this section profiles those hazards (i.e., describes them in the regional context) and discusses the regional implications of these hazard risks.

It is important to understand that the risk assessment portion of this planning process was cyclical. For example, hazards were identified and analyzed on an "area-wide" basis. Upon completion of the initial assessment, such factors as targeted development areas, the locations of critical facilities, etc. were compared to the initial data. Where warranted, additional risk analysis was done in those areas to determine the primary hazards affecting, for example, a potential development. Further, determining probability and severity could be affected by the presence of a number of critical facilities or developable areas in a "hazard zone".

2.1 HAZARD IDENTIFICATION

§201.6(c)(2)(i)	[The risk assessment shall include a] description of the type…of all natural hazards that can affect the jurisdiction.

The hazard identification serves as a guide to all communities in the Region 4 Planning and Development Council (PDC) planning district when assessing their vulnerabilities to hazards. The purpose of the hazard identification is to (1) identify all the natural hazards that could affect the planning area, (2) assess the extent to which the area is vulnerable to the effects of these hazards, and (3) prioritize the potential risks to the community.

Hazard Identification

The following chart – Table 2.1.1 – Illustrates the hazards to which the planning area could be susceptible. The table also includes a list of the research sources used to identify the hazards as well as a brief statement justifying their inclusion in this analysis. Those hazards with justification for inclusion in the hazard profiling section are highlighted in yellow. In addition to all sources identified in the following table, each county's updated hazard mitigation plan was also used as a

research source.

It is significant to note that it is not the intent of Table 2.1.1 to list all occurrences of the hazards in consideration. Table 2.1.1 simply seeks to demonstrate that a particular hazard is indeed worthy of further risk analysis.

Table 2.1.1

HAZARD	HOW IDENTIFIED	WHY IDENTIFIED
Avalanche	• Research indicates that these jurisdictions are not susceptible to this hazard.	• The general contour of the land in the region is mountainous, but they are not steep enough to cause avalanche activity. • Further, the amount of snowfall the region receives is insufficient for any kind of avalanche.
Coastal Erosion	• MapQuest	• Coastal erosion is not a significant risk as the region is more than 450 miles from the Atlantic Ocean.
Coastal Storm	• See "Thunderstorm"	• Coastal storms are not a threat to the region as it is more than 450 miles from the Atlantic Ocean.
Dam Failure	• WV Department of Environmental Protection (WVDEP) Dam Safety • Interviews w/ Local Officials • Internet Research http://itouchmap.com	• Research indicates that there are at least 8 dams in Fayette County. • Local officials identify 1 large dam facility in Greenbrier County. • The Summersville Dam is a large Class I structure in Nicholas County. • There are 3 Class 1 dam facilities in Pocahontas County. • There is 1 Class I dam and 2 Class 2 dams in Webster County.
Debris Flow	• See "Land Subsidence"	• See "Land Subsidence"
Drought	• National Climatic Data Center (NCDC) Event Records	NCDC reports the following: • Fayette – 8 droughts since 1999 • Nicholas – 2 droughts during the past 5 years • Pocahontas – 8 droughts • Webster – 8 droughts over last 10 years

Earthquake	• US Geological Survey (USGS) • Internet Research http://www.earthquake.gov	• According to the USGS, the counties in Region range from a 2 to a 4 in Peak Ground Acceleration (PGA) with a 10% chance of exceedance in 50 years. • While perceived shaking is expected to be light and damage minimal, USDHS Federal Emergency Management Agency (FEMA) still recommends analyzing hazards in areas with these PGAs.
Expansive Soils	• See "Land Subsidence"	• See "Land Subsidence"
Extreme Heat	• NCDC Event Records	• Temperatures in the region seldom exceed 100 degrees. • If the temperature meets or exceeds 100 degrees, it has not been hot enough for the amount of time appropriate to denote "extreme heat".
Flooding	• NCDC Event Records • Interviews w/ Local Officials	• NCDC reports the following: o Fayette – 19 since 1995 o Greenbrier – 38 since 1994 o Nicholas – 22 since 1995 o Pocahontas – 30 since 1995 o Webster – 31 since 1995 • Local officials unanimously indicated that flooding was the most probable hazard in all jurisdictions.
Hailstorm	• NCDC Event Records	NCDC reports the following: • Fayette – 34 hail events since 1998 • Greenbrier – 37 hail events since 2003 • Nicholas – 14 hail events since 2003 • Pocahontas – 12 hail events since 1971 • Webster – 19 hail events since 1998

Hazmat Incident	• *Greenbrier County Commodity Flow Study*, 2009 • *Nicholas County Commodity Flow Study*, 2007 • *Nicholas County Vulnerability Assessment*, 2007 • *Webster County Commodity Flow Study*, 2009 • Interviews w/ Local Officials	• According to the flow studies conducted by 3 of the 5 counties in the region, materials from all 9 US Department of Transportation (USDOT)-designated hazard classes are transported through the region. • Officials in Pocahontas County, numerous homes and businesses in that county are heated by propane (which could be a significant explosion hazard, even during transport). • All 5 counties contain "covered facilities" that report the use and storage of hazardous materials to the appropriate Local Emergency Planning Committee (LEPC).
Hurricane	• See "Thunderstorm"	• The region does not experience the hurricane conditions of extremely high winds, rains, and hail. • In some instances, the region may be affected by rainfall brought about by the remnants of a hurricane, which are addressed elsewhere.
Land Subsidence	• Interviews w/ Local Officials • Internet Research http://www.nationalatlas.gov	• Evaporate rock formations, which are present through some parts of the region, are prone to caves and sink holes. • According to local officials, land subsidence occurs as a secondary result to other hazards and development.
Landslide	• See "Land Subsidence"	• See "Land Subsidence"
Terrorism	• Interviews w/ Local Officials	• The New River Gorge Bridge is both a component of the transportation infrastructure of Fayette County and a tourist attraction (e.g., Bridge Day). • Pocahontas Co. contains the Green Bank Observatory (comms. infrastructure, govt. operation) & Snowshoe Resort (tourist attraction).

Thunderstorm	• NCDC Event Records	NCDC reports the following: • Fayette – 48 thunderstorms since 1998 • Greenbrier – 31 thunderstorm/high wind events since 2003 • Nicholas – 11 thunderstorm events since 2003 • Pocahontas – 18 severe thunderstorms since 1971 • Webster – 31 thunderstorms since 1998
Tsunami	• MapQuest	• The Atlantic Ocean is approximately 450 miles from the region. • The Appalachian Mountains will most likely protect the area from a tsunami affecting the US east coast.
Volcano	• USGS	• No volcanoes exist on the east coast.
Wildfire	• NCDC Event Records	• There have been 2 wildfire events in Fayette County in the last 10 years.
Wind	• NCDC Event Records	NCDC reports the following: • Fayette – 11 high wind events • Greenbrier – 4 wind events since 2003 • Pocahontas – 9 wind events • Webster – 11 high wind events
Winter Storm	• NCDC Event Records	NCDC reports the following: • Fayette – 40 winter storms in the last 10 years • Greenbrier – 19 winter storm events • Nicholas – 17 winter storm events • Pocahontas – 92 winter weather events • Webster – 55 snow events

Over an area as large as that covered by the Region 4 PDC, it seems intuitively obvious that the hazards listed in Table 2.1.1 above would not affect the entire region in the same manner. For instance, Nicholas, Fayette, and Greenbrier Counties are traversed by US 19 and Interstate 64, which see significantly more hazardous material traffic than do the primary thoroughfares in Webster and Pocahontas Counties. Even though all counties contain covered facilities that use and store hazardous materials, Nicholas, Fayette, and Greenbrier Counties are more

vulnerable to hazmat incidents (especially considering that the majority of hazardous material emergencies are during the transportation phase).

To capture this concept, Table 2.1.2 depicts the region's county jurisdictions in comparison. The baseline hazard risk is a generalized average in each county. If a county appears to be more or less affected by a particular hazard, evidence was sought through research. The variances in risk are discussed in Section 2.2 below.

Table 2.1.2

JURISDICTION	HAZARDS											
	Dam Failure	***Drought***	***Earthquake***	***Flooding***	***Hailstorm***	***Hazmat Incident***	***Land Subsidence***	***Terrorism***	***Thunderstorm***	***Wildfire***	***Wind***	***Winter Storm***
Fayette County	>	=	=	=	=	>	=	>	=	=	=	=
Greenbrier County	=	=	=	=	=	>	=	=	=	=	=	=
Nicholas County	>	=	=	=	=	>	=	<	=	=	=	=
Pocahontas County	=	=	=	=	=	<	>	>	=	=	=	>
Webster County	=	=	=	=	=	<	=	<	=	=	=	>

KEY:
=: Equal risk
<: Lower risk
>: Higher risk

Probability vs. Severity Explanation

The historical data collected includes accounts of all the hazard types listed above. Some hazards, however, have occurred much more frequently than others with a wide range of impacts. By analyzing the historical frequency of each hazard along with the associated impacts, the hazards that pose the most significant risks to the Region 4 PDC planning district can be identified. Such an analysis allows participating communities to focus mitigation strategies on those hazards that are most likely to cause significant losses.

Prioritizing the potential hazards that can threaten the planning district is based on two (2) separate factors:

- The probability that a potential hazard will affect the community, and
- The potential impacts to the community in the event that such a hazard occurs (i.e., severity).

The probability of a hazard event occurring is largely based on the historical recurrence interval of the hazard. Such sources as the NCDC's "event record database", local media archives, and interviews with local officials were used to determine the number of occurrences. If repeated coverage was given to a particular hazard event, that event was considered highly probable to occur. Also, local officials were able to verify or identify those hazards occurring frequently. For instance, if flood damage occurs every five (5) years versus a tornado causing damage every 50 years, the flood probability would score much higher than the tornado.

Probability for each county jurisdiction in the region was calculated in comparison to one another. For instance, the total number of hazard events reported in each county was averaged to determine the number of occurrences of each hazard on a regional basis. Figure 2.1.1 explains this calculation with an example.

Figure 2.1.1

CALCULATING AVERAGE HAZARD OCCURRENCES

Fayette County's plan reported 19 floods, Greenbrier's listed 38 floods, Nicholas had 22, Pocahontas reported 30, and Webster County listed 31 floods.

(19+38+22+30+31)/5 = 28 Floods (avg)

With these figures, another computation determined the average number of total hazard events. The average number of total hazards (11.5) was used as the median to determine probability. Table 2.1.3 depicts this calculation. The distance above or below the median was determined by a percentage.

Table 2.1.3

CALCULATING MEDIAN HAZARD OCCURRENCES											
Dam	***Drought***	***Quake***	***Flood***	***Hail***	***Hazmat***	***Sub.***	***Terror***	***Thunder***	***Fire***	***Wind***	***Winter***
0	5.2	0	28	23.2	0	1.2	0	27.8	0.4	7.8	44.6
AVERAGE (Sum of Averages / 12):											**11.5**

**NOTE: Averages for each hazard were calculated per Figure 2.1.2 above.*

Table 2.1.4 lists the classifications considered for hazard probability. The percentages were used to determine the appropriate "hazard probability classification". For instance, 0 – 20% was listed as improbable, 21 – 40% was listed as remote, 41 – 60% was listed as occasional, 61 – 80% was listed as probable, and 81 – 100% was listed as frequent.

Table 2.1.4

Hazard Probability Classifications

Label	***Specific Hazard Event***	***Frequency***
Frequent	Likely to occur frequently	Continuously experienced
Probable	Will occur several times in the life of an item	Experienced several times
Occasional	Likely to occur sometime in the life of an item	Experienced
Remote	Unlikely but possible to occur in the life of an item	Unlikely that it has been experienced
Improbable	So unlikely that it can be assumed occurrence may not be experienced	Not experienced

The hazard's severity is made up of three (3) separate factors: the extent of the potentially affected geographic area, the primary impacts of the hazard event, and any cascading (or secondary) effects. While primary impacts are a direct result of the hazard, secondary impacts can only arise subsequent to a primary impact. For example, a primary impact of a flood may be road closures due to submerged pavement. A possible secondary impact in such an incident would be restricted access of emergency vehicles due to a road closure.

Severity calculations, on the whole, were less exact. The median and various averages were calculated as outlined above for probability. The figures used for the severity calculations, however, were estimates with no mathematical basis. Loss

figures presented with NCDC event records, local official recollections, and the loss estimates for each hazard presented in previous versions of each individual county's hazard mitigation plans were used to compare severity. Percentages were again used.

As with probability, severity classifications were made. Table 2.1.5 lists the severity classifications that were considered. Percentage assignments were as follows:

- 0 – 25%: Negligible;
- 26 – 50%: Marginal;
- 51 – 75%: Critical; and
- 76 – 100%: Catastrophic.

Table 2.1.5

Hazard Severity Classifications

Description	*Mishap Definition*
Catastrophic	Death or major structural loss
Critical	Severe injury, severe illness, or marginal structural damage
Marginal	Minor injury, minor illness, or structural damage
Negligible	Less than minor injury, illness, or structural damage

Figure 2.1.2 combines the probability and severity information into a "risk assessment matrix" that generalizes the potential impact of each hazard included in the plan. This is the figure that was re-formatted into a bar graph as described above.

Figure 2.1.2

Risk Assessment Matrix

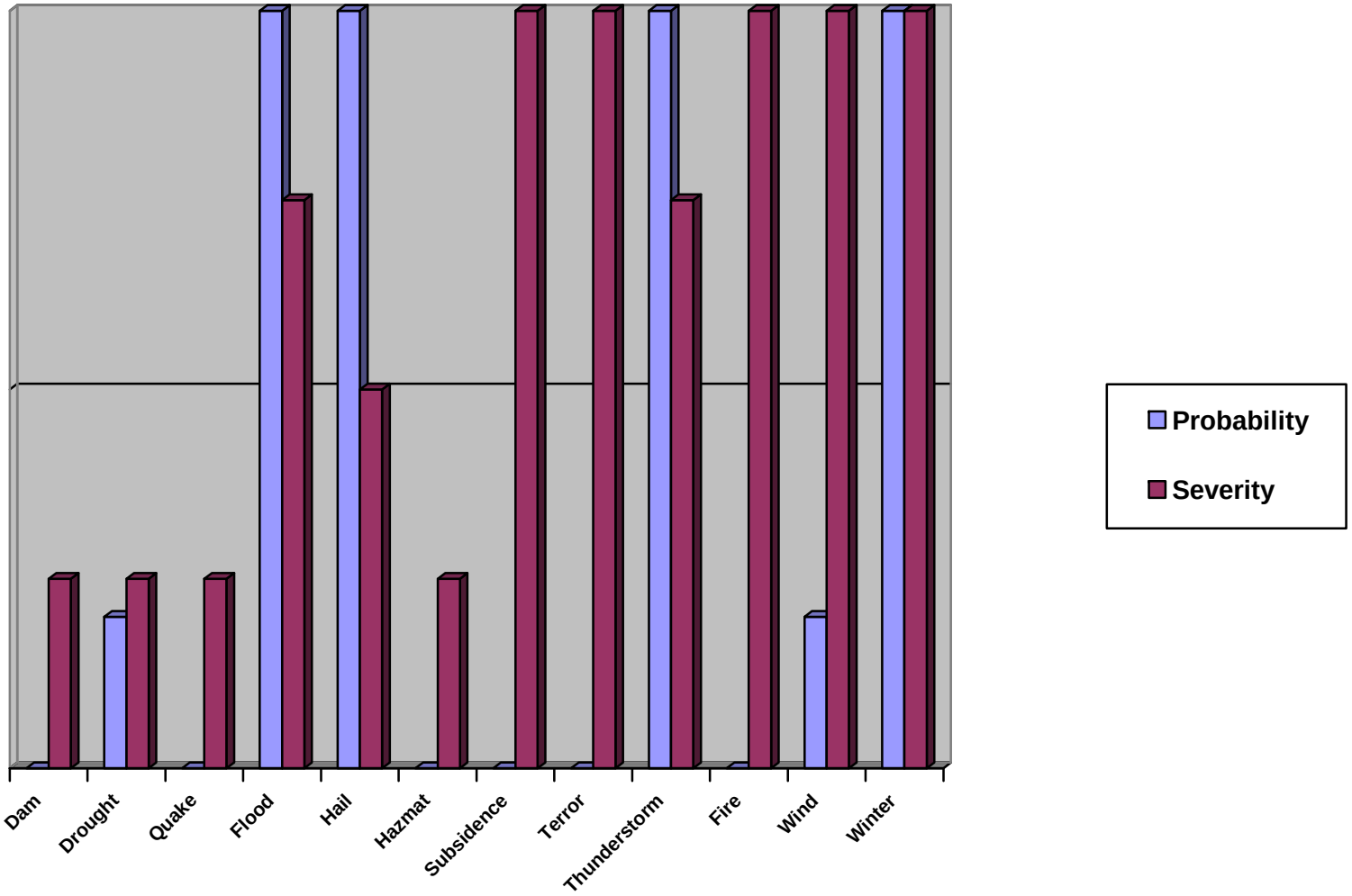
Hazard Severity	***Hazard Probability***				
	Frequent	Probable	Occasional	Remote	Improbable
Catastrophic	**Winter Storm**			**Wind**	**Subsidence**, **Fire**
Critical	**Flood**, **Thunderstorm**				
Marginal	**Hailstorm**				
Negligible				**Drought**	**Dam Failure**, **Hazmat**, **Terrorism**, **Quake**

Figure 2.1.3 below was created to enhance the usability of the plan. It provides a more holistic snapshot of risk in terms of probability and severity in a format that is more familiar to most readers of this plan. To create the bar graph, the following approximations were used.

- Probability
  - Frequent = 4
  - Probable = 3
  - Occasional = 2
  - Remote = 1
  - Improbable = 0

- Severity
  - Catastrophic = 4
  - Critical = 3
  - Marginal = 2
  - Negligible = 1

Figure 2.1.1


Dam
Drought
Quake
Flood
Hail
Hazmat
Subsidence
Terror
Thunderstorm
Fire
Wind
Winter
Probability
Severity

Inventorying Assets

This risk assessment identifies "at-risk" community assets such as critical facilities, critical infrastructure, historical properties, commercial/industrial facilities, etc. "Assets" contribute directly to the quality of life throughout the region as well as ensure its continued operation. As such, government facilities are often listed, as are water/wastewater and transportation infrastructure. "Assets" can also be irreplaceable items within the community, such as historical structures or even vulnerable populations (including the elderly or youths).

Inventorying assets first involves determining what in the community can be affected by a hazard event. The core planning committee maintains a specific list of community assets as part of this plan. (*NOTE: Individual jurisdictions may also maintain these types of lists for their own areas.) Assets were grouped into the following categories.

- **Critical Facilities:** Governmental facilities, water/wastewater facilities, dams, emergency services facilities, medical facilities (hospitals/clinics), military facilities, and the transportation infrastructure.
- **Vulnerable Populations:** Schools, nursing homes, and senior centers.
- **Economic Assets:** Large commercial/industrial facilities or large employers (not covered in other categories).
- **Special Considerations:** Residences, community outreach facilities, post offices, and libraries.
- **Historical Considerations:** Areas/structures listed on the National Register of Historic Places.

While compiling the inventory, much information can be gathered that could assist in estimating the impact that the loss of each asset could have on the community. Each specific asset is listed with its size, replacement value (structure only), contents value, function use or value (annual operating budget), displacement cost ($ per day), and occupancy. Following is a brief description of how the above numbers are derived.

- **Size:** County assessor data or by directly contacting the facility.
- **Replacement Value:** County assessor data or by directly contacting the facility.

- **Contents Value:** Directly contacting the facility.
- **Function Use or Value:** Directly contacting the facility.
- **Displacement Cost:** Function Use or Value divided by 365.
- **Occupancy:** Directly contacting the facility.

Table 2.1.6 lists the assets identified throughout Region 4. This matrix is loosely derived from Worksheet #3b in the FEMA 386-2, *State and Local Mitigation Planning How-To Guide: Understanding Your Risks* document.

The matrix also contains a denotation of risk as low ("L"), moderate ("M"), or high ("H"). Such a denotation corresponds loosely with the mapping in the hazard profiles below, especially for such broad-based hazards as thunderstorm or earthquake. The site-specific hazards, though, such as flooding, hazardous material incident, terrorism, etc., list donations for the facility itself. In other words, the facility may be in an area labeled as moderately susceptible to hazardous materials (for example), yet listed as "low" since the risk in that area is primarily related to transportation.

*NOTES:
The jurisdiction in which the asset is located is written in upper case letters in the address cell.
The hazard susceptibility indicators (i.e., L, M, or H) refer to the mapping developed as part of the hazard profile.
Common abbreviations include the following:

ES = Elementary School,
HS = High School,
MS = Middle School (also refered to as "JHS", or Junior High School),
PD = Police Department,
PO = Post Office, and
VFD = Volunteer Fire Department (or "FD", Fire Department).

Table 2.1.6

Region 4 Asset Inventory

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
ABB,Inc	843 N. Jefferson St. LEWISBURG	**FEMA**			**X**														
							Haz	L	L	L	L	L	H	M	L	M	L	M	M
Alderson Bridge	Monroe St. ALDERSON	**FEMA**					**X**												
							Haz	L	L	L	M	L	L	M	L	M	L	M	M
Alderson ES	Route 1 Box 162f ALDERSON	**FEMA**		**X**															
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Alderson PD	202 N. Monroe St. ALDERSON	**FEMA**	**X**																
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Alderson VFD/EMS	ALDERSON	**FEMA**	**X**																

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
VFD/EMS																			
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Alderson Water Plant	106 Johnson St. ALDERSON	FEMA	X																
		Haz						L	L	L	M	L	M	M	M	M	L	M	M
Alex Energy	SUMMERSVILLE	FEMA			X			40,000		$150,000,000		$5,000,000		$141,000,000				500	
		Haz						L	L	L	L	L	M	M	L	M	L	M	H
Alexander McVeight Miller House	Hemlock Ave. ALDERSON	FEMA					X												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Alexander W. Arbuckle House	Arbuckle Ln. Lewisburg Vicinity GREENBRIER CO.	FEMA					X												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Allegheny Power	POCAHONTAS CO.	FEMA	X					3,600		$41,100									
		Haz						L	L	L	L	L	M	L	M	M	M	M	H
Altamont Hotel	110 Fayette Ave. FAYETTEVILLE	FEMA					X												
		Haz						M	L	L	L	L	L	L	L	M	L	M	M
ANR Coal-WV LLC	61 Glade Run Rd. Erbacon WEBSTER CO.	FEMA		X															
		Haz						L	L	L	L	L	M	M	M	M	L	M	H
Ansted ES	118 Church St. ANSTED	FEMA		X															
		Haz						L	L	L	L	L	L	M	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Ansted MS	118 Church St. ANSTED	**FEMA**		**X**															
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Ansted PD	104 Cemetary St. ANSTED	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Ansted Town Hall	104 Cemetary St. ANSTED	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Ansted VFD	Page Street ANSTED	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Anthony Creek VFD/Rescue Squad	HC 70 Box N110 White Sulphur Springs GREENBRIER CO.	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Appalachian Premium Fuels	FAYETTE CO.	**FEMA**		**X**															
		Haz	L	L	L	L	L	M	L	L	M	L	M	M
Argabrite House	504 Virginia St. ALDERSON	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
B/E Aerospace	93 Nettie Fenwick Rd. Craigsville NICHOLAS CO.	**FEMA**		**X**															
		Haz	L	L	L	L	L	M	M	L	M	M	M	H

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Bank of Glen Jean	Main St. Glen Jean FAYETTE CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	M	M
Bartow PO	SR 92 Bartow POCAHONTAS CO.	**FEMA**				**X**		1,152		$48,220									
		Haz	L	L	L	L	L	L	L	L	L	L	L	M	L	M	M	M	H
Bartow Ranger Station	US 250 / SR 92 Bartow POCAHONTAS CO.	**FEMA**				**X**		4,095		$781,000		$104,000		$20,000				20	
		Haz	L	L	L	L	L	L	L	L	L	L	L	M	L	M	M	M	H
Bartow-Frank-Durbin VFD	US 250 DURBIN	**FEMA**	**X**							$25,000									
		Haz	L	L	L	L	L	L	L	L	L	L	L	M	L	M	M	M	H
Beaver ES	16414 Webster Rd. Craigsville NICHOLAS CO.	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz	L	L	L	L	L	L	L	L	L	L	L	M	L	M	M	M	H
Beaver Mill	W. Webster Rd. Craigsville NICHOLAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	L	L	L	L	L	M	L	M	M	M	H
Beckwith Lumber Company	US 219 S. Slatyfork POCAHONTAS CO.	**FEMA**			**X**			6,496		$208,450									
		Haz	L	L	L	L	L	L	L	L	L	L	L	L	L	M	M	M	H

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Big Springs Market	1 Big Spring Plz. Slatyfork POCAHONTAS CO.	FEMA				X		17,316		$440,360									
		Haz	L	L	L	L	L	L	L	L	M	M	M	H
Birch River ES	379 Birch River Rd. Birch River NICHOLAS CO.	FEMA		X				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Birch River VFD	537 Fire House Rd. Birch River NICHOLAS CO.	FEMA	X																
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Blue Bend Forest Camp	SR 92 Alvon GREENBRIER CO.	FEMA					X												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Blue Sulphur Springs Pavilion	CR 25 Blue Sulphur Springs GREENBRIER CO.	FEMA					X												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Bridges	Region-wide	FEMA	X																
		Haz	M	L	L	M	L	L	M	H	M	L	M	M
Brock Hotel	1400 Webster Rd. SUMMERSVILLE	FEMA					X												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Buckeye PO	US 219 / SR 39 Buckeye POCAHONTAS CO.	**FEMA**				**X**													
		Haz	L	L	L	L	L	L	L	L	M	M	M	H
Burns Motor Freight	500 Seneca Trail North MARLINTON	**FEMA**			**X**			36,618		$500,090									
		Haz	L	L	L	H	L	M	M	L	M	L	M	M
Camp Allegheny	Bartow POCAHONTAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	M	M	H
Camp Caesar	4868 Webster Rd. Cowen WEBSTER CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	M	M	H
Camp Washington Carver	Clifftop FAYETTE CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Captain John Halstead Farm	Whitewater Rd. Kesslers Cross Lanes NICHOLAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Carnifex Ferry State Park	Mt. Lookout NICHOLAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Cass PO	101 Main St. Cass POCAHONTAS CO.	**FEMA**				**X**													
		Haz	L	L	L	L	L	L	L	L	M	M	M	M
Cass Scenic Railroad	Cass POCAHONTAS CO.	**FEMA**					**X**			$70,000									
		Haz	L	L	L	L	L	L	M	M	M	M	M	M
Cass VFD	SR 66 Cass POCAHONTAS CO.	**FEMA**	**X**							$50,000									
		Haz	L	L	L	L	L	L	L	L	M	M	M	M
Cherry River ES	190 Riverside Dr. RICHWOOD	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz	L	L	L	L	L	L	M	L	M	M	M	H
Clintonville FD	P. O. Box 235 Clintonville GREENBRIER CO.	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Columbia WV Inc.	242 Callahan Rd. Craigsville NICHOLAS CO.	**FEMA**			**X**			144,000		$5,320,000		$23,840,000		$73,420,000					
		Haz	L	L	L	L	L	M	M	L	M	M	M	H
Confederate Cemetery at Lewisburg	Maple St. / US 60 LEWISBURG	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Contentment	US 60 ANSTED	FEMA					X												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Cowen PSD Water Plant	7017 Webster Rd. COWEN	FEMA	X																
		Haz						L	L	L	L	L	M	M	M	M	M	M	H
Cowen VFD	SR 20 COWEN	FEMA	X																
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Craig Run East Fork Rock Shelter	Mills Mtn. WEBSTER CO.	FEMA					X												
		Haz						L	L	L	L	L	L	M	L	M	L	M	H
Craigsville ES	100 School St. Craigsville NICHOLAS CO.	FEMA		X				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Craigsville PSD Water Plant	Craigsville NICHOLAS CO.	FEMA	X																
		Haz						L	L	L	L	L	M	M	M	M	M	M	H
Craigsville/ Beaver VFD	Craigsville NICHOLAS CO.	FEMA	X																
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Crichton ES	P. O. Box 205 QUINWOOD			X															
		Haz						L	L	L	L	L	L	L	L	M	M	M	H
David S. Creigh House	Davis-Stuart Rd. Lewisburg Vicinity GREENBRIER CO.	FEMA					X												

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Deitz Farm	SR 20 / SR 28 Meadow Bluff GREENBRIER CO.	**FEMA**					**X**												
		Haz						L	L	L	L	L	L	L	L	M	L	M	M
Diana ES	90 Eagle Ln. Diana WEBSTER CO.	**FEMA**		**X**															
		Haz						L	L	L	L	L	L	M	L	M	L	M	H
Diana VFD	SR 20 Diana WEBSTER CO.	**FEMA**	**X**																
		Haz						L	L	L	L	L	L	M	L	M	L	M	H
Dixie ES	1988 Dixie Hwy. Dixie NICHOLAS CO.	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Doctor Flavius Brown House	Old Wilderness Rd. Summersville NICHOLAS CO.	**FEMA**					**X**												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Dr. John Hughart House	SR 41 Landisburg FAYETTE CO.	**FEMA**					**X**												
		Haz						L	L	L	L	L	L	L	L	M	L	M	M
Dunmore PO	SR 92/28 Dunmore POCAHONTAS CO.	**FEMA**				**X**		1,200		$100,000		$10,000						2	

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
	CO.																		
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Durbin Mayor's Office	Main St. DURBIN	FEMA	X					7,020				$164,370							
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Durbin PO	4th Ave. / Main St. DURBIN	FEMA				X		1,152				$51,290							
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Durbin Senior Center/Depot	Main St. DURBIN	FEMA		X															
		Haz						L	L	L	M	L	L	M	L	M	M	M	H
Durbin Sewage Plant	DURBIN	FEMA	X																
		Haz						L	L	L	H	L	M	M	M	M	M	M	H
E. B. Hawkins House	120 Fayette Ave. FAYETTEVILLE	FEMA					X												
		Haz						M	L	L	L	L	L	L	L	M	L	M	M
Eastern Greenbrier MS	Route 1 Box 150 RONCEVERTE			X															
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Elmhurst	US 60 Caldwell GREENBRIER CO.	FEMA					X												
		Haz						L	L	L	L	L	L	L	L	M	L	M	M
Erbacon VFD	4900 Erbacon Rd. Erbacon WEBSTER CO.	FEMA	X																
		Haz						L	L	L	L	L	L	M	L	M	L	M	H

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Fairlea VFD	P. O. Box 5857 Fairlea GREENBRIER CO.	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Fas Chek Grocery	916 3rd Ave. MARLINTON	**FEMA**				**X**		5,000		$160,000		$140,000		$2,000,000					
		Haz	L	L	L	H	L	L	M	L	M	L	M	M
Fayette County Courthouse	100 N. Court St. FAYETTEVILLE	**FEMA**	**X**				**X**												
		Haz	L	L	L	L	L	M	L	L	M	L	M	M
Fayette Institute of Tech.	300 W. Oyler Ave. OAK HILL	**FEMA**		**X**															
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Fayetteville ES	200 W. Wiseman Ave. FAYETTEVILLE	**FEMA**		**X**															
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Fayetteville HS	515 W. Maple Ave. FAYETTEVILLE	**FEMA**		**X**															
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Fayetteville PD	125 N. Court St. FAYETTEVILLE	**FEMA**	**X**																
		Haz	L	L	L	L	L	M	L	L	M	L	M	M
Fayetteville Town Hall	125 N. Court St. FAYETTEVILLE	**FEMA**	**X**																
		Haz	L	L	L	L	L	M	L	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Fayetteville VFD	150 Lively St. FAYETTEVILLE	**FEMA**	**X**																
		Haz	L	L	L	L	L	M	L	L	M	L	M	M
Foodland Grocery	Route 1 Box 23 MARLINTON	**FEMA**				**X**		17,000		$750,000		$750,000						100	
		Haz	L	L	L	H	L	L	M	L	M	L	M	M
FPC Alderson	Glen Ray Rd. Box A ALDERSON	**FEMA**		**X**		**X**													
		Haz	L	L	L	L	L	L	M	H	M	L	M	M
Frank & Anna Hunter House	US 219 POCAHONTAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Frankford ES	US 219 North FRANKFORD			**X**															
		Haz	L	L	L	L	L	L	M	L	M	M	M	M
Frankford VFD	P. O. Box 89 Frankford GREENBRIER CO.	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	M	M	M
Frontier Communications	POCAHONTAS CO.	**FEMA**	**X**																
		Haz	L	L	L	L	L	M	L	M	M	M	M	H
Frost VFD	POCAHONTAS CO.	**FEMA**	**X**					4,560		$318,811		$225,000		$48,000				60	
		Haz	L	L	L	L	L	L	M	L	M	M	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Gauley Bridge ES	Walnut/Jackson St. GAULEY BRIDGE	**FEMA**		**X**															
		Haz	M	L	L	L	L	L	M	L	M	L	M	L	M	L	M	L	M	M
Gauley Bridge PD	278 Railroad St. GAULEY BRIDGE	**FEMA**	**X**																
		Haz	M	L	L	L	L	L	M	L	M	L	M	L	M	L	M	L	M	M
Gauley Bridge Railroad Station	SR 16/WR 39 GAULEY BRIDGE	**FEMA**					**X**												
		Haz	M	L	L	L	L	L	M	L	M	L	M	L	M	L	M	L	M	M
Gauley Bridge Town Hall	278 Railroad St. GAULEY BRIDGE	**FEMA**	**X**																
		Haz	M	L	L	L	L	L	M	L	M	L	M	L	M	L	M	L	M	M
Gauley Bridge VFD	Main Street GAULEY BRIDGE	**FEMA**	**X**																
		Haz	M	L	L	L	L	L	M	L	M	L	M	L	M	L	M	L	M	M
Gauley Bridge Water Plant	US 60 GAULEY BRIDGE	**FEMA**	**X**																
		Haz	M	L	L	M	L	M	M	L	M	L	M	L	M	L	M	L	M	M
Glade Creek ES	7950 Webster Rd. Summersville NICHOLAS CO.	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz	L	L	L	L	L	L	M	L	M	L	M	L	M	L	M	L	M	M
Glade MS	25 Mill St. COWEN	**FEMA**		**X**															

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
	COWEN																		
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Glen Ferris Inn	US 60 Glen Ferris FAYETTE CO.	FEMA					X												
		Haz						L	L	L	L	L	L	L	L	M	L	M	M
Global Contact Services	101 Martin Dr. MOUNT HOPE	FEMA			X														
		Haz						L	L	L	L	L	L	L	L	M	L	M	M
Gov. Samuel Prince House	224 N. Court St. LEWISBURG	FEMA					X												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Green Bank ES-MS	SR 92 Green Bank POCAHONTAS CO.	FEMA		X				53,118		$2,342,950									
		Haz						L	L	L	L	L	L	M	L	M	M	M	M
Green Bank PO	SR 92 Green Bank POCAHONTAS CO.	FEMA				X		1,600		$74,460									
		Haz						L	L	L	L	L	L	M	L	M	M	M	M
Green Bank Senior Center	SR 92 Green Bank POCAHONTAS CO.	FEMA		X				4,096		$98,390									
		Haz						L	L	L	L	L	L	M	L	M	M	M	M

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			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Greenbrier Co. Emergency Ambulance	257 3rd St. Fairlea GREENBRIER CO.	**FEMA**	**X**					800		$200,000		$150,000		$325,000				50	
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Greenbrier Co. Sheriff Office	206 N. Court St. LEWISBURG	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Greenbrier County Courthouse	200 N. Court St. LEWISBURG	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Greenbrier East HS	1 Spartan Lane LEWISBURG			**X**															
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Greenbrier Resort Mgmt	300 W. Main St. WHITE SULPHUR SPRINGS	**FEMA**			**X**														
		Haz	L	L	L	L	L	L	M	M	M	L	M	M
Greenbrier Valley Medical Center	202 Maplewood Ave. RONCEVERTE	**FEMA**	**X**	**X**															
		Haz	L	L	L	L	L	L	M	M	M	L	M	M
Greenbrier West HS	P. O. Box 325 Charmco GREENBRIER CO.			**X**															
		Haz	L	L	L	L	L	L	L	L	M	L	M	M

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			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
GW Jeep Site	Green Bank Vicinity POCAHONTAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Hacker Valley ES	11 School Loop Rd. Hacker Valley WEBSTER CO.	**FEMA**		**X**															
		Haz	L	L	L	H	L	L	M	L	M	M	M	H
Hacker Valley VFD	4999 Hacker Valley Rd. Hacker Valley WEBSTER CO.	**FEMA**	**X**																
		Haz	L	L	L	H	L	L	M	L	M	M	M	H
Halfway House	US 60 ANSTED	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Haney Brothers Trucking Co. Inc.	Erbacon Rd. Erbacon WEBSTER CO.	**FEMA**			**X**														
		Haz	L	L	L	L	L	L	M	L	M	L	M	H
Heartland	Huffnagle Rd. Lewisburg Vicinity GREENBRIER CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M

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			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Herns Mill Covered Bridge	SR 40 Lewisburg Vicinity GREENBRIER CO.	**FEMA**					**X**												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Hillsboro ES	HC 64 Box 399 HILLSBORO	**FEMA**		**X**				31,890		$1,438,160									
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Hillsboro Mayor's Office	HILLSBORO	**FEMA**	**X**																
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Hillsboro VFD	US 219 HILLSBORO	**FEMA**	**X**																
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Hokes Mill Covered Bridge	Lewisburg Vicinity GREENBRIER CO.	**FEMA**					**X**												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Home Health Care Services	Route 2 Box 54B Buckeye POCAHONTAS CO.	**FEMA**		**X**															
		Haz						L	L	L	L	L	L	L	L	M	M	M	H
Homeplace	US 219 Frankford GREENBRIER CO.	**FEMA**					**X**												
		Haz						L	L	L	L	L	L	M	L	M	M	M	M

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			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Hookersville/ Muddlety VFD	3449 Hookersville Rd. Summersville NICHOLAS CO.	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Huntersville Presbyterian Church	CR 21/SR 39 Huntersville POCAHONTAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	L	L	M	M	M	M
ICG Eastern LLC	1101 Birch River Rd. WEBSTER CO.	**FEMA**			**X**														
		Haz	L	L	L	L	L	M	M	M	M	L	M	H
Inter-State Hardwoods	US 250/SR 92 Bartow POCAHONTAS CO.	**FEMA**			**X**			306,528		$10,898,099		$21,390,493						150	
		Haz	L	L	L	L	L	L	M	L	M	M	M	H
IOOF Lodge Building	8th St./2nd Ave. MARLINTON	**FEMA**					**X**												
		Haz	L	L	L	H	L	L	M	L	M	L	M	M
James B. Carden House	1082 Country Rd. Summersville NICHOLAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
James Withrow House	200 N. Jefferson St. LEWISBURG	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
James Wylie House	208 E. Main St. WHITE SULPHUR SPRINGS	FEMA					X												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
John A. North House	100 Church St. LEWISBURG	FEMA					X												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
John Wesley Methodist Church	E. Foster St. LEWISBURG	FEMA					X												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Kanawha Falls PSD Water Plant	362 Main St. GAULEY BRIDGE	FEMA	X																
		Haz						M	L	L	M	L	M	M	M	M	L	M	M
Kay Moor	US 19 Fayetteville Vicinity FAYETTE CO.	FEMA					X												
		Haz						L	L	L	L	L	L	L	L	M	L	M	M
Keslers Cross Lanes VFD	500 Water St. SUMMERSVILLE	FEMA	X																
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Kinder's Market	Main St. DURBIN	FEMA				X		2,912		$95,300									
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Kingston Mining Inc	600 Resource Dr. Scarbro FAYETTE CO.	FEMA			X														

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			X	X	X	X	X												
							HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
	CO.						Haz	L	L	L	L	L	M	L	M	M	L	M	M
Laurel Run Rockshelter	Coe WEBSTER CO.	FEMA					X												
							Haz	L	L	L	L	L	L	M	L	M	L	M	H
Leslie Brothers Lumber Co.	155 Lower Williams River Rd. Cowen WEBSTER CO.	FEMA			X														
							Haz	L	L	L	L	L	L	M	L	M	M	M	H
Leslie Equipment Co.	6248 Webster Rd. COWEN	FEMA			X														
							Haz	L	L	L	L	L	L	M	L	M	M	M	H
Lewisburg ES	206 N. Lee St. LEWISBURG	FEMA		X															
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Lewisburg PD	119 W. Washington St. LEWISBURG	FEMA	X																
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Lewisburg VFD	105 W. Foster St. LEWISBURG	FEMA	X																
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Locust Creek Covered Bridge	SR 31 Hillsboro POCAHONTAS CO.	FEMA					X												
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Lowes (Summersville)	5200 Webster Rd. SUMMERSVILLE	FEMA			X														

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			X	X	X	X	X												
							HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
							Haz	L	L	L	M	L	M	M	L	M	L	M	M
Lowther Store	HC 88 Box B Hacker Valley WEBSTER CO.	FEMA					X												
							Haz	L	L	L	M	L	L	M	L	M	M	M	H
Marlinton ES	400 9th St. MARLINTON	FEMA		X				17,160		$586,030									
							Haz	M	L	L	M	L	L	M	L	M	L	M	M
Marlinton MS	Route 2 Box 528 Marlinton POCAHONTAS CO.	FEMA		X				40,420		$1,761,910									
							Haz	M	L	L	M	L	L	M	L	M	L	M	M
Marlinton Municipal Building	709 2nd Ave. MARLINTON	FEMA	X					21,720		$2,360,000		$100,000		$244,951				150	
							Haz	M	L	L	H	L	L	M	L	M	L	M	M
Marlinton Opera House	815 3rd Ave. MARLINTON	FEMA					X	5,800		$95,490									
							Haz	M	L	L	H	L	L	M	L	M	L	M	M
Marlinton PO	819 4th Ave. MARLINTON	FEMA				X		5,104		$1,000,000		$300,000		$361,000				30	
							Haz	M	L	L	H	L	L	M	L	M	L	M	M
Marlinton Ranger Station	1103 Cemetery Rd. MARLINTON	FEMA				X				$105,000									
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Marlinton Senior Center	821 3rd Ave. MARLINTON	FEMA		X				5,940		$1,511,900									
							Haz	M	L	L	H	L	L	M	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Marlinton Sewage Plant	MARLINTON	**FEMA**	**X**					64		$5,000		$10,000		$242,222					
		Haz	M	L	L	H	L	M	M	M	M	L	M	M
Marlinton Town Garage - 3rd Ave.	3rd Ave. MARLINTON	**FEMA**				**X**		13,600		$125,000									
		Haz	M	L	L	H	L	M	M	L	M	L	M	M
Marlinton Town Garage - 4th Ave.	4th Ave. MARLINTON	**FEMA**				**X**		4,000		$220,000		$30,000		$100,000					
		Haz	M	L	L	H	L	M	M	L	M	L	M	M
Marlinton Water Plant	1002 9th Ave. MARLINTON	**FEMA**	**X**					3,000		$500,000		$500,000		$350,272					
		Haz	M	L	L	H	L	M	M	M	M	L	M	M
Martin Hamilton House	SR 39 Summersville NICHOLAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	H
Mason-Drennen House	SR 39/SR 129 Drennen NICHOLAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	H
McNeel Mill	US 219 Mill Point POCAHONTAS CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Meadow Bridge ES	2275 Main St. MEADOW BRIDGE	**FEMA**		**X**															

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X	HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
	BRIDGE						Haz	L	L	L	L	L	L	L	L	M	L	M	M
Meadow Bridge HS	2775 Main St. MEADOW BRIDGE	FEMA		X															
							Haz	L	L	L	L	L	L	L	L	M	L	M	M
Meadow Bridge VFD	MEADOW BRIDGE	FEMA	X																
							Haz	L	L	L	L	L	L	L	L	M	L	M	M
Meadow River Lumber Building	US 219 Fairlea GREENBRIER CO.	FEMA					X												
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Mollohan Mill	CR 8 Hacker Valley WEBSTER CO.	FEMA					X												
							Haz	L	L	L	M	L	L	M	L	M	M	M	H
Montgomery City Hall	706 3rd Ave. MONTGOMERY	FEMA	X																
							Haz	M	L	L	L	L	M	L	L	M	L	M	M
Montgomery Gen. Hosp.	401 6th Ave. MONTGOMERY	FEMA	X	X															
							Haz	M	L	L	L	L	M	L	M	M	L	M	M
Montgomery PD	706 3rd Ave. MONTGOMERY	FEMA	X																
							Haz	M	L	L	L	L	M	L	L	M	L	M	M
Montgomery VFD	816 3rd Ave. MONTGOMERY	FEMA	X																
							Haz	M	L	L	L	L	M	L	L	M	L	M	M

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			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Morlunda	SR 40 Lewisburg Vicinity GREENBRIER CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M					
Morton House	Union St. WEBSTER SPRINGS	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	M	M	H					
Mount Hope VFD	428 Main St. MOUNT HOPE	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	L	L	M	L	M	M					
Mount Hope City Hall	609 Main St. MOUNT HOPE	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	L	L	M	L	M	M					
Mount Hope ES	408 Lincoln St. MOUNT HOPE	**FEMA**		**X**															
		Haz	L	L	L	L	L	L	L	L	M	L	M	M					
Mount Hope HS	110 High School Dr. MOUNT HOPE	**FEMA**		**X**															
		Haz	L	L	L	L	L	L	L	L	M	L	M	M					
Mount Hope PD	609 Main St. MOUNT HOPE	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	L	L	M	L	M	M					
Mount Hope Post Office	MOUNT HOPE	**FEMA**				**X**													
		Haz	L	L	L	L	L	L	L	L	M	L	M	M					

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Mount Hope Sewer Plant	609 Main St. MOUNT HOPE	**FEMA**	**X**																
		Haz						L	L	L	L	L	M	L	M	M	L	M	M
Mount Hope Water Plant	Kilsyth Rd. Mt. Hope FAYETTE CO.	**FEMA**	**X**																
		Haz						L	L	L	L	L	M	L	M	M	L	M	M
Mountain Home	US 60 White Sulphur Springs GREENBRIER CO.	**FEMA**					**X**												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Mt. Lookout ES	1945 Mt. Lookout Rd. Mt. Lookout NICHOLAS CO.	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
Mt. Nebo ES	110 Schoolhouse Ln. Mt. Nebo NICHOLAS CO.	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz						L	L	L	L	L	M	M	L	M	L	M	H
Mt. Olive Correctional Complex	1 Mountainside Way, Oak Hill FAYETTE CO.	**FEMA**		**X**		**X**													
		Haz						L	L	L	L	L	M	L	H	M	L	M	M
Mt. Tabor Baptist Church	Court & Foster Sts. LEWISBURG	**FEMA**					**X**												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M

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			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Mullican Flooring	GREENBRIER CO.	FEMA			X														
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
National Radio Astronomy Observatory	SR 29 Green Bank POCAHONTAS CO.	FEMA				X													
		Haz	L	L	L	L	L	L	M	H	M	M	M	M
Nettie VFD	Nettie NICHOLAS CO.	FEMA	X																
		Haz	L	L	L	L	L	L	M	L	M	L	M	H
Nettie Water Plant	125 Cedar Rd. Nettie NICHOLAS CO.	FEMA	X																
		Haz	L	L	L	L	L	M	M	M	M	L	M	H
New River Company General Office	411 Main St. MOUNT HOPE	FEMA					X												
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Nicholas County Bank	800 Main St. SUMMERSVILLE	FEMA					X												
		Haz	L	L	L	L	L	L	M	L	M	L	M	H
Nicholas County BOE	400 Old Main Dr. SUMMERSVILLE	FEMA		X				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz	L	L	L	L	L	L	M	L	M	L	M	H
Nicholas County Career/ Technical Center	215 Milam Addn. Rd. Craigsville NICHOLAS CO.	FEMA		X				43,529		$5,352,941		$2,941,176		$2,294,117					

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
							HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
							Haz	L	L	L	L	L	M	M	L	M	M	M	H
Nicholas County Courthouse	511 Church St. SUMMERSVILLE	FEMA	X				X												
							Haz	L	L	L	L	L	L	M	L	M	L	M	H
Nicholas County HS	30 Grizzly Rd. Summersville NICHOLAS CO.	FEMA		X			X	43,529		$5,352,941		$2,941,176		$2,294,117					
							Haz	L	L	L	L	L	M	M	L	M	L	M	H
Nicholas County Sheriff	700 Main St. SUMMERSVILLE	FEMA	X																
							Haz	L	L	L	L	L	L	M	L	M	L	M	H
Northern Greenbrier Ambulance Service	P. O. Box 74 RENICK	FEMA	X																
							Haz	L	L	L	L	L	L	M	L	M	M	M	M
Oak Hill City Hall	100 Kelly Ave. OAK HILL	FEMA	X																
							Haz	L	L	L	L	L	L	L	L	M	L	M	M
Oak Hill HS	350 W. Oyler Ave. OAK HILL	FEMA		X															
							Haz	L	L	L	L	L	L	L	L	M	L	M	M
Oak Hill PD	691 CR 61/28 Oak Hill FAYETTE CO.	FEMA	X																
							Haz	L	L	L	L	L	L	L	L	M	L	M	M
Oak Hill PO	OAK HILL	FEMA				X													
							Haz	L	L	L	L	L	L	L	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Oak Hill Railroad Depot	Virginia Ave. and Central Ave. OAK HILL	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Oak Hill VFD	99 CR 61/29 Oak Hill FAYETTE CO.	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Oakhurst Links	1 Montague Dr. WHITE SULPHUR SPRINGS	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Old Stone Church	Church & Foster Sts. LEWISBURG	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Page Vawter House	ANSTED	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Panther Creek ES	10068 Canvas Nettie Rd. Nettie NICHOLAS CO.	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz	L	L	L	L	L	L	M	L	M	L	M	H
Pax Town Hall	99 Center St. PAX	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Pax VFD	99 Center St. PAX	**FEMA**	**X**																

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
							HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
							Haz	L	L	L	L	L	L	L	L	M	L	M	M
Pearl Buck House	US 219 Hillsboro POCAHONTAS CO.	FEMA					X												
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Pocahontas County 911/OEM Office	1008 Jury St. MARLINTON	FEMA	X					1,500		$200,000		$200,000		$540,000				20	
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Pocahontas County Continuous Care Center	Route 1 Box 500 Marlinton POCAHONTAS CO.	FEMA		X				21,754		$100,000,000		$25,000,000		$5,000,000				68	
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Pocahontas County Courthouse	900 10th Ave. MARLINTON	FEMA	X					22,754		$5,000,000		$1,123,300		$5,800,000				250	
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Pocahontas County HS	Route 2 Box 133 Marlinton POCAHONTAS CO.	FEMA		X				55,363		$2,435,420									
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Pocahontas County PSD Water Plant	HC 63 Box 122 Bartow POCAHONTAS CO.	FEMA	X																
							Haz	L	L	L	L	L	M	M	M	M	M	M	H

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			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Pocahontas County Times (Newspaper)	206 8th St. MARLINTON	**FEMA**				**X**		1,416		$48,390									
		Haz	M	L	L	H	L	L	M	L	M	L	M	M
Pocahontas Memorial Hospital	Route 2 Box 52 Buckeye POCAHONTAS CO.	**FEMA**	**X**	**X**				23,000		$30,000,000		$15,000,000						100	
		Haz	L	L	L	L	L	M	L	M	M	M	M	H
Pocahontas Pharmacy	51 Beard Heights MARLINTON	**FEMA**				**X**													
		Haz	M	L	L	H	L	L	M	L	M	L	M	M
Price Brothers General Store	SR 41 Prince FAYETTE CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Quinwood VFD/Emergency Ambulance	P. O. Box 253 QUINWOOD	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	L	L	M	M	M	H
Railways	Region-wide	**FEMA**	**X**																
		Haz	M	L	L	M	L	M	M	M	M	M	M	M
Rainelle ES	701 Kanawha Ave. RAINELLE	**FEMA**		**X**															
		Haz	L	L	L	L	L	L	L	L	M	L	M	H
Rainelle PD	7th Street RAINELLE	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	L	L	M	L	M	H

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			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Rainelle VFD	318 James River & Kanawha Tpk. RAINELLE	**FEMA**	**X**																
							Haz	L	L	L	L	L	L	L	L	M	L	M	H
Redi Care Inc.	Williams Rd. Craigsville NICHOLAS CO.	**FEMA**	**X**																
							Haz	L	L	L	L	L	L	M	L	M	M	M	H
Renick VFD	P. O. Box 55 RENICK	**FEMA**	**X**																
							Haz	L	L	L	L	L	L	M	L	M	M	M	M
Residential	Region-wide	**FEMA**				**X**				$3,283,436,240								127,444	
							Haz	M	L	L	H	L	L	M	L	M	M	M	H
Richard Beard House	Kyle Beard Rd. Hillsboro POCAHONTAS CO.	**FEMA**					**X**												
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Richwood HS	1 Valley Ave. RICHWOOD	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
							Haz	L	L	L	L	L	L	M	L	M	M	M	H
Richwood JHS	2 Valley Ave. RICHWOOD	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
							Haz	L	L	L	L	L	L	M	L	M	M	M	H
Richwood PD	6 White Ave. RICHWOOD	**FEMA**	**X**					8,625		$793,000		$154,500		$1,000,000					
							Haz	L	L	L	L	L	L	M	L	M	M	M	H
Richwood VFD	6 White Ave. RICHWOOD	**FEMA**	**X**																

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			X	X	X	X	X												
							HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
	RICHWOOD						Haz	L	L	L	L	L	L	M	L	M	M	M	H
Richwood WWTP	Staff Dr. RICHWOOD	FEMA	X																
							Haz	L	L	L	M	L	M	M	M	M	M	M	H
Rite Aid (Marlinton)	1000 Seneca Trail MARLINTON	FEMA				X		11,370		$249,230									
							Haz	L	L	L	H	L	L	M	L	M	L	M	M
Roads	Region-wide	FEMA	X																
							Haz	M	L	L	M	L	M	M	L	M	M	M	H
Ronceverte ES	246 RES Dr. RONCEVERTE	FEMA	X																
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Ronceverte PD	300 W. Main St. RONCEVERTE	FEMA	X																
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Ronceverte VFD	722 Ronceverte Ave. RONCEVERTE	FEMA	X																
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Ronceverte Water Plant	1 Monroe Ave. RONCEVERTE	FEMA	X																
							Haz	L	L	L	M	L	M	M	M	M	L	M	M
Rupert ES	P. O. Drawer B RUPERT			X															
							Haz	L	L	L	L	L	L	L	L	M	L	M	H
Rupert VFD	RUPERT	FEMA	X																
							Haz	L	L	L	L	L	L	L	L	M	L	M	H
Rupert Water Plant	605 Nicholas St. RUPERT	FEMA	X																

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			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Plant	ROPERT																		
		Haz						L	L	L	M	L	M	L	M	M	L	M	H
Sam Black Church	US 60 Smoot GREENBRIER CO.	FEMA					X												
		Haz						L	L	L	L	L	L	L	L	M	L	M	M
Seneca Health Servces	1305 Webster Rd. SUMMERSVILLE	FEMA	X	X				4,000				$95,000		$980,000				60	
		Haz						L	L	L	L	L	L	M	L	M	L	M	H
Seneca Mental Health	110 Baker St. WEBSTER SPRINGS	FEMA	X	X															
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Shavers Fork VFD	1 Snowshoe Dr. Snowshoe POCAHONTAS CO.	FEMA	X					12,613		$636,700									
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Slatyfork PO	US 219 Slatyfork POCAHONTAS CO.	FEMA				X		2,440		$67,160									
		Haz						L	L	L	L	L	L	L	L	M	M	M	H
Smithers City Hall	518 Michigan Ave. SMITHERS	FEMA	X																
		Haz						M	L	L	L	L	M	L	L	M	L	M	M
Smithers PD	518 Michigan Ave. SMITHERS	FEMA	X																
		Haz						M	L	L	L	L	M	L	L	M	L	M	M

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			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Smithers VFD	158 Michigan Ave. SMITHERS	**FEMA**	**X**																
		Haz	M	L	L	L	L	M	L	L	M	L	M	M
Smoot ES/MS	Smoot, WV GREENBRIER CO.	**FEMA**		**X**															
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Smoot VFD	P. O. Box 76, Smoot GREENBRIER CO.	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
Snowshoe Mountain Resort	10 Snowshoe Dr. Snowshoe POCAHONTAS CO.	**FEMA**			**X**			250,186		$31,760,609		$9,720,283						800	
		Haz	L	L	L	L	L	L	M	M	M	M	M	H
Southern States	719 3rd Ave. MARLINTON	**FEMA**			**X**			11,000		$2,500,000		$4,000,000		$4,500,000				50	
		Haz	M	L	L	H	L	L	M	L	M	L	M	M
Spanforce Labor, LLC	200 W. Washington St. LEWISBURG	**FEMA**			**X**														
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Stone Manse	Stonehouse Rd. Caldwell GREENBRIER CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	L	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Stuart Manor	US 219 Lewisburg Vicinity GREENBRIER CO.	**FEMA**					**X**												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
Summersille VFD	806 Arbuckle Rd. SUMMERSVILLE	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	H
Summersville Dam	NICHOLAS CO.	**FEMA**	**X**			**X**													
		Haz	H	L	L	L	L	L	M	H	M	L	M	H
Summersville ES	108 McKees Creek Rd. Summersville NICHOLAS CO.	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz	L	L	L	L	L	L	M	L	M	L	M	H
Summersville JHS	40 Grizzly Rd. Summersville NICHOLAS CO.	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
		Haz	L	L	L	L	L	M	M	L	M	L	M	H
Summersville Memorial Hospital	400 Fairview Heights Rd. SUMMERSVILLE	**FEMA**	**X**	**X**				90,780		$22,061,724		$11,472,239		$48,161,468				265	
		Haz	L	L	L	L	L	M	M	M	M	L	M	H
Summersville PD	400 Broad St. SUMMERSVILLE	**FEMA**	**X**																
		Haz	L	L	L	L	L	L	M	L	M	L	M	H

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Summersville WTP	221 Canvas Nettie Rd. SUMMERSVILLE	**FEMA**	**X**					10,000											
		Haz						L	L	L	M	L	M	M	M	M	L	M	H
Summersville WWTP	221 Canvas Nettie Rd. SUMMERSVILLE	**FEMA**	**X**					900											
		Haz						L	L	L	M	L	M	M	M	M	L	M	H
Supreme Court Library Building	US 60 / Courtney Dr. LEWISBURG	**FEMA**					**X**												
		Haz						L	L	L	L	L	L	M	L	M	L	M	M
The Jim C. Hamer Co.	111 Mill Run Rd. WEBSTER SPRINGS	**FEMA**			**X**														
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Thurmond Town Hall	THURMOND	**FEMA**	**X**																
		Haz						L	L	L	L	L	L	L	L	M	L	M	M
Trent's Market	523 Bartow Rd. Bartow POCAHONTAS CO.	**FEMA**				**X**		3,899											
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Tri-County VFD	SR 12 Alderson GREENBRIER CO.	**FEMA**	**X**																
		Haz						L	L	L	L	L	L	M	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Tuckwiler Tavern	US 60 Lewisburg Vicinity GREENBRIER CO.	FEMA					X												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M					
Tuscawilla	US 219 Lewisburg Vicinity GREENBRIER CO.	FEMA					X												
		Haz	L	L	L	L	L	L	M	L	M	L	M	M					
Tyree Stone Tavern	US 19 Clifftop FAYETTE CO.	FEMA					X												
		Haz	L	L	L	L	L	L	L	L	M	L	M	M					
USDA (Marlinton)	US 219 Marlinton Vicinity POCAHONTAS CO.	FEMA				X		3,200		$281,830									
		Haz	L	L	L	L	L	L	M	L	M	L	M	M					
Wal Mart (Lewisburg)	520 N. Jefferson St. LEWISBURG	FEMA			X														
		Haz	L	L	L	L	L	M	M	L	M	L	M	M					
Wal-Mart (Fayetteville)	100 Fayette Town Ctr, Fayetteville FAYETTE CO.	FEMA			X														
		Haz	L	L	L	L	L	M	L	L	M	L	M	M					
Wal-Mart (Summersville)	200 Wal St. SUMMERSVILLE	FEMA			X														

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X	HAZARDS											
								Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
(Summersville)	SUMMERSVILLE						Haz	L	L	L	L	L	M	M	L	M	L	M	H
Webster County Board of Education	315 S. Main St. WEBSTER SPRINGS	FEMA		X															
							Haz	L	L	L	L	L	L	M	L	M	M	M	H
Webster County Commission of Senior Citizens, Inc.	148 S. Court St. WEBSTER SPRINGS	FEMA		X															
							Haz	L	L	L	L	L	L	M	L	M	M	M	H
Webster County Head Start	60 Railroad Ave. COWEN	FEMA		X															
							Haz	L	L	L	L	L	L	M	L	M	M	M	H
Webster County HS	1 Highlander Dr. Upper Glade WEBSTER CO.	FEMA		X															
							Haz	L	L	L	L	L	L	M	L	M	M	M	H
Webster County Memorial Hospital	324 Miller Mtn. Dr. WEBSTER SPRINGS	FEMA	X	X															
							Haz	L	L	L	L	L	M	M	M	M	M	M	H
Webster County Sheriff's Office	2 Court St. G3 WEBSTER SPRINGS	FEMA	X																
							Haz	L	L	L	L	L	L	M	L	M	M	M	H

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Webster Nursing & Rehabilitation Center County Inc.	411 Erbacon Rd. COWEN	**FEMA**		**X**				19,003		$2,538,000		$250,000		$4,244,201				60	
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Webster Springs ES	318 River Dr. WEBSTER SPRINGS	**FEMA**		**X**															
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Webster Springs PD	146 McGraw Ave. WEBSTER SPRINGS	**FEMA**	**X**																
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Webster Springs VFD	55 McGraw Ave. WEBSTER SPRINGS	**FEMA**	**X**																
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
Webster Trucking, Inc.	1095 Birch River Rd. COWEN	**FEMA**			**X**														
		Haz						L	L	L	L	L	L	M	L	M	M	M	H
West Virginia State Fairgrounds	891 Maplewood Ave. Fairlea GREENBRIER CO.	**FEMA**				**X**													
		Haz						L	L	L	L	L	L	M	M	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
							HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Western Greenbrier MS	HC 40 Box 14 Crawley GREENBRIER CO.			**X**															
							Haz	L	L	L	L	L	L	L	L	M	L	M	M
Whipple Company Store	Whipple FAYETTE CO.	**FEMA**					**X**												
							Haz	L	L	L	L	L	L	L	L	M	L	M	M
White Sulphur Springs ES	150 Reed St. WHITE SULPHUR SPRINGS			**X**															
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
White Sulphur Springs PD	32 W. Main St. WHITE SULPHUR SPRINGS	**FEMA**	**X**																
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
White Sulphur Springs VFD/EMS	P. O. Box 835 WHITE SULPHUR SPRINGS	**FEMA**	**X**																
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
Wilderness VFD	Mt. Lookout NICHOLAS CO.	**FEMA**	**X**																
							Haz	L	L	L	L	L	L	M	L	M	L	M	M

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS	Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
Williamsburg VFD/EMS	P. O. Box 181 Williamsburg GREENBRIER CO.	**FEMA**	**X**											
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
WV Alloys Inc	FAYETTE CO.	**FEMA**			**X**									
		Haz	L	L	L	L	L	L	L	L	M	L	M	M
WV American Water	520 Orchard St. WEBSTER SPRINGS	**FEMA**	**X**											
		Haz	L	L	L	M	L	M	M	M	M	M	M	H
WV Department of Highways	103 1/2 Church St. LEWISBURG	**FEMA**			**X**									
		Haz	L	L	L	L	L	M	M	L	M	L	M	M
WV Dept. of Corrections - Denmar	HC 64 Box 125 Hillsboro POCAHONTAS CO.	**FEMA**		**X**		**X**								
		Haz	L	L	L	L	L	M	M	H	M	L	M	M
WV School of Osteopathic Medicine	400 N. Lee St. LEWISBURG	**FEMA**				**X**								
		Haz	L	L	L	L	L	L	M	L	M	L	M	M
WVSP Summersville Det.	100 Service Rd. SUMMERSVILLE	**FEMA**	**X**											
		Haz	L	L	L	L	L	M	M	L	M	L	M	H

Name or Description of Asset	Address and Jurisdictional Location		Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic/Other Considerations	Size of Bldg. (sq. ft.)		Replace-ment Value ($)		Contents Value ($)		Function Use or Value ($)		Displace-ment Cost ($)		Occupancy or Capacity (#)	
			X	X	X	X	X												
		HAZARDS						Dam	Drought	Quake	Flooding	Hail	Hazmat	Land	Terror	Thunder	Wildfire	Wind	Winter
WVSP Troop 6	Main St./US 60 Gauley Bridge FAYETTE CO.	**FEMA**	**X**																
							Haz	M	L	L	L	L	L	M	L	M	L	M	M
WVSP-Lewisburg	381 Greenbrier Rd. Lewisburg GREENBRIER CO.	**FEMA**	**X**																
							Haz	L	L	L	L	L	L	M	L	M	L	M	M
WVSP-Rainelle	354 J. Raine Dr. RAINELLE	**FEMA**	**X**					4,466		$650,000		$150,000						62	
							Haz	L	L	L	L	L	L	L	L	M	L	M	H
WVU Tech	405 Fayette Pike MONTGOMERY	**FEMA**		**X**															
							Haz	M	L	L	L	L	H	L	H	M	L	M	M
Zela ES	165 Country Rd. Summersville NICHOLAS CO.	**FEMA**		**X**				43,529		$5,352,941		$2,941,176		$2,294,117					
							Haz	L	L	L	L	L	L	M	L	M	L	M	H

2.2 HAZARD PROFILES

§201.6(c)(2)(i)	[The risk assessment shall include a] description of the…location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

The section above identifies which hazards affect the counties in Region 4, but it does not explain *how* these hazards affect the counties. To do so, "profiles" have been developed for each hazard identified in Section 2.1. The profile describes how each hazard manifests itself in each of the Region 4 counties.

Each of the 12 profiles below contains estimated losses as a result of the hazard being profiled. All loss estimates were calculated in the same manner, which is as follows. See Appendix 2 below for copies of the applicable worksheets from each county.

Worksheet #3a from FEMA 386-2, *State and Local Mitigation Planning How-To Guide: Understanding Your Risks*, contains space for the total number of structures and the total value of structures. For each (the number and the value), a percentage in hazard-prone areas is identified. The values corresponding to the percentage in hazard areas correspond to the loss estimates for each category: residential, commercial, industrial, agricultural, religious/non-profit, government, education, and utilities.

Historical hazard event research often contains estimates of losses in a variety of categories, some of which correspond with the categories used in this plan; consequently, historical data contributed heavily to the process of determining potential damage percentages. During the hazard identification research for this project, planners noted loss totals from large incidents. Dollar amounts computed on Worksheet #3a are compared to those from historical events.

2.2.1: Dam Failure

A dam failure is when downstream flooding occurs as the result of the complete or partial inundation of an impoundment.

RESEARCH SOURCES

- WV Department of Environmental Protection (WVDEP) Dam Safety
- Interviews with Local Officials
- Internet Research (http://itouchmap.com)

Period of Occurrence:	At any time
Number of Events to Date (1950-2010):	0
Probability of Event:	Infrequent – Dams that fail typically have some deficiency that causes the failure that should be detected by regular inspections and subsequently repaired. Heavy rains or moderate earthquakes may trigger a dam failure.
Warning Time:	Minimal – Depends on frequency of inspection
Potential Impacts:	Potential loss of human life, economic loss, environmental damage, disruption of lifeline facilities
Cause Injury or Death:	Injury and risk of multiple deaths
Potential Facility Shutdown:	30 days or more

HAZARD EFFECTS

Dam failure is often the result of prolonged rainfall or flooding or, during prolonged dry periods, erosion. The primary hazard surrounding dam failure is the swift, unpredictable flooding of those areas immediately downstream. While general inundation areas can be determined, it is often impossible to know exactly how and where water held back by a dam will flow during a rapid failure of the dam.

Generally, there are three (3) types of dam failures: hydraulic, seepage, and structural.

- **Hydraulic Failure:** Hydraulic failures result from the uncontrolled flow of water over the dam, around and adjacent to the dam, and the erosive action of water on the dam and its foundation. Earthen dams are particularly vulnerable to hydraulic failure since earth erodes at relatively small velocities.

- **Seepage Failure:** All dams exhibit some seepage that must be controlled in velocity and amount. Seepage occurs both through the dam and the foundation. If uncontrolled, seepage can erode material from the foundation of an earthen dam to form a conduit through which water can pass. This passing of water often leads to a complete failure of the structure, known as piping.
- **Structural Failure:** Structural failures involve the rupture of the dam and/or its foundation. This is particularly a hazard for large dams and for dams built of low strength materials such as silts, slag, fly ash, etc.

Dam failures generally result from a complex interrelationship of several failure modes. Uncontrolled seepage may weaken the soils and lead to a structural failure. Structural failure may shorten the seepage path and lead to a piping failure. Surface erosion may lead to structural or piping failures.

The WVDEP classifies dams into four (4) categories, including the following:

- **Class 1 (High Hazard):** Dams located where failure may cause loss of human life or major damage to dwellings, commercial or industrial buildings, main railroads, important public utilities, or where a high risk highway may be affected or damaged.
- **Class 2 (Significant Hazard):** Dams located where failure may cause minor damage to dwellings, commercial or industrial buildings, important public utilities, main railroads, or cause major damage to unoccupied buildings, or where a low risk highway may be affected or damaged. Loss of human life from a failure of a Class 2 dam is unlikely.
- **Class 3 (Low Hazard):** Dams located in rural or agricultural areas where failure may cause minor damage to non-residential and normally unoccupied buildings, or rural or agricultural land. Failure of a Class 3 dam would cause only a loss of the dam itself and a loss of property use, such as use of related roads, with little additional damage to adjacent property.
- **Class 4 (Negligible Hazard):** Dams where failure is expected to have no potential for loss of human life, no potential for property damage, and no potential for significant harm to the environment.

HAZARD PROFILE

There are numerous dam facilities throughout the region, some of which are more high profile than others. In Pocahontas County, for instance, the Watoga State Park dam is a large facility. This dam, though, is in a rural part of the county and would only affect sparsely populated rural communities if it were to fail. The Marlin Run #1 Dam, though, is located just east of Marlinton; although it does not hold a large reservoir, all water in the lake would impact the Town of Marlinton should the dam fail.

The risks associated with other dams in the region are even more difficult to classify. The Summersville Dam in Nicholas County holds back a very large impoundment of water. If it were to fail, it would cause significant damage to not only the unincorporated areas of southern Nicholas County, but also trigger cascading impacts clear into the Kanawha Valley near Charleston. For instance, the Bluestone (not in Region 4), Sutton (not in Region 4), and Summersville Dams control 57% of the total water drainage in the Charleston area. (*Source:* City of Charleston Planning) The US Army Corps of Engineers (USACE) regularly monitors this facility.

Many of the dams throughout the region are associated with one of the many state parks that are present. These dams are large, but much like the Watoga facility (which is an example of a dam associated with a state park), they are located in rural areas where losses would likely be somewhat low. The Boley Lake Dam (Fayette County), Hawks Nest Dam (Fayette County), and the Camp Cesar Dam (Webster County) are other examples. The added benefit of these dams being associated with a state park is that the West Virginia Division of Natural Resources (WVDNR) often monitors and inspects these facilities.

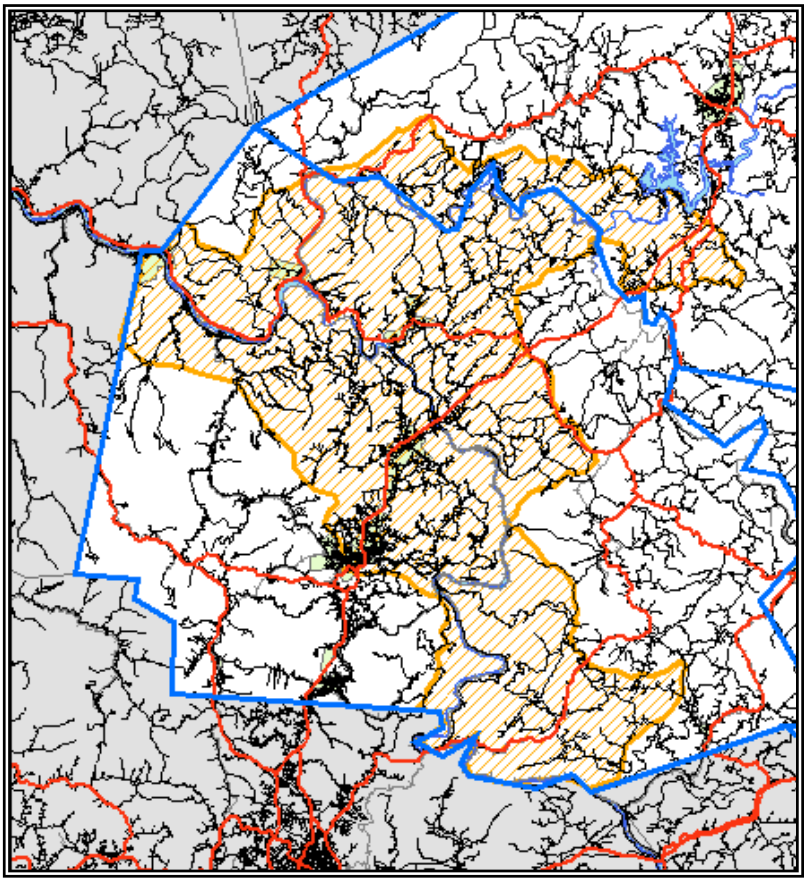
There are a number of impoundments associated with mining activity throughout the region. The facilities are located primarily in Fayette, Nicholas, and Webster Counties. For example, ICG operations in southwestern Webster County (along SR 82) include impoundments, one (1) of which is relatively large. Though this facility is an earthen structure and could fail, it would primarily impact the environment and mine assets.

Other facilities in the region are considered in overall emergency preparedness efforts. Nicholas County maintains four (4) emergency plans for its largest impoundments. One (1) of these impoundments is located near SR 39 on Jerry's Fork Road; another is located along SR 55 near Persinger; and two (2) others are located in the Urbacon/Birch River area (near the Webster County impoundments cited in the

preceding paragraph).

Fayette County coordinates heavily with the West Virginia Department of Environmental Protection (WVDEP) regarding the impoundments in its county. Additionally, the county has begun working with owners of private property containing ponds. For example, a Boy Scouts Troop recently purchased property that had been reclaimed as an Abandoned Mine Lands (AML) project several years ago. That property still has three (3) ponds on it. The county plans to coordinate with the owners to both better define the risk from possible failures of these impoundments and better organize potential response efforts in the event of failure. (*NOTE: A mitigation project encouraging coordination with owners of earthen impoundments is listed for Fayette County under its "Land Subsidence" strategy.)

Additionally, the failure of dams outside of the region could impact Region 4's counties. A failure of the Bluestone Dam in Hinton, West Virginia, for instance, could cause major damage in Fayette County. A failure of that dam may severely impact the economy of the Kanawha Valley, which would have a "trickle-down" effect throughout West Virginia.



The figure at left illustrates the potentially affected portions of the New and Gauley River watersheds in Fayette and Nicholas Counties if the Bluestone and/or Summersville Dam were to fail. (*NOTE: This image does not substitute inundation maps, which are shared with appropriate counties by the USACE.)

While moderate dam failure hazards exist elsewhere in the region, the primary risk areas for

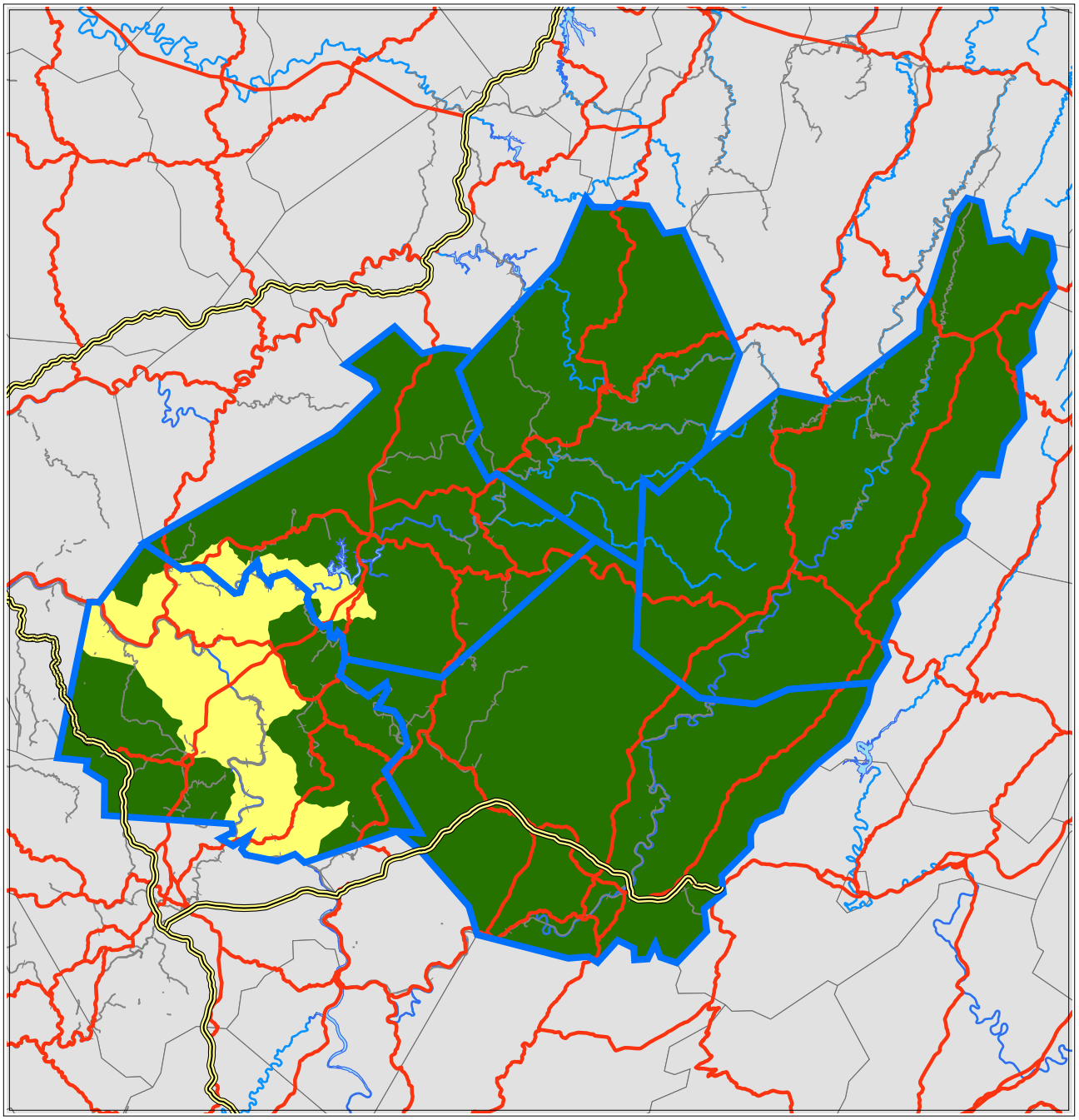
dam failure are those along the New, Gauley, and Kanawha Rivers, including the communities of Gauley Bridge, Thurmond, Montgomery, Smithers, and numerous other unincorporated areas.

VULNERABLE STRUCTURES

Vulnerable Structures – Dam Failure								
County	*Residential*	*Commercial*	*Industrial*	*Agricultural*	*Religious*	*Government*	*Education*	*Utilities*
Fayette	2901	325	0	0	6	4	1	3
Greenbrier	2395	379	0	0	8	3	3	4
Nicholas	1671	227	0	0	8	1	3	4
Pocahontas	1000	100	0	0	5	2	1	2
Webster	706	62	0	0	2	1	1	3
TOTALS	**8673**	**1093**	**0**	**0**	**29**	**11**	**9**	**16**

LOSS ESTIMATES

In an effort to assist jurisdictional understanding of risks and implementation of strategies, loss estimates were done for each county (see Appendix 2). By averaging those estimates, this plan assumes a total, regional loss estimate *per dam failure incident* to be as much as $177,000,000. If all counties in the region were affected to the "worst case scenario" level, as much as $886,000,000 could be lost.


Vulnerability to Dam Failure
Moderate Risk Areas
Low Risk Areas

2.2.2: Drought

Drought is an extended period of deficient rainfall relative to the statistical mean for a region.

RESEARCH SOURCES

- National Climatic Data Center (NCDC) Event Records

Period of Occurrence:	Summer months or extended periods with no precipitation
Number of Events to Date (1950 – 2010):	9
Probability of Event:	Infrequent – Small scale droughts occur frequently, but events causing major disruption and economic loss are infrequent
Warning Time:	Weeks
Potential Impacts:	Activities that rely heavily on high water usage may be impacted significantly, including agriculture, tourism, wildlife protection, municipal water usage, commerce, recreation, electric power generation, and water quality deterioration. Droughts can lead to economic losses such as unemployment, decreased land values, and agrobusiness losses. Minimal risk of damage or cracking to structural foundations, due to soils.
Cause Injury or Death:	None
Potential Facility Shutdown:	None

HAZARD EFFECTS

Droughts are defined according to meteorological, hydrological, and agricultural criteria. Any significant deficit of precipitation is categorized as meteorological. Hydrological drought is apparent in noticeably reduced river and stream flow and critically low groundwater tables. Agricultural drought indicates an extended dry period that results in crop stress and harvest reduction.

The Palmer Drought Severity Index (PDSI) is widely used throughout the United States as a measure of drought and to track moisture conditions. The PDSI is defined as “an interval of time, generally in months or years in duration, during which the actual moisture supply at a given place rather consistently falls short of the climatically expected or climatically appropriate moisture supply”. The range of the PDSI is from -

4.0 (extremely dry) to +4.0 (excessively wet), with the central half (-2.0 to +2.0) representing normal or near normal conditions.

HAZARD PROFILE

A drought could have a significant impact to the economy of Region 4, as all counties are home to agricultural activity. Greenbrier and Nicholas Counties see the majority of this activity, with 881 and 434 farms in the counties (respectively). The following table summarizes the number of farms in each county (*Source: 2007 Census of Agriculture*) as well as the market value of crops sold. As can be seen from the table, agriculture's contribution to the local economy increased in every Region 4 county between the years of 2002 and 2007.

Agriculture in Region 4 Counties

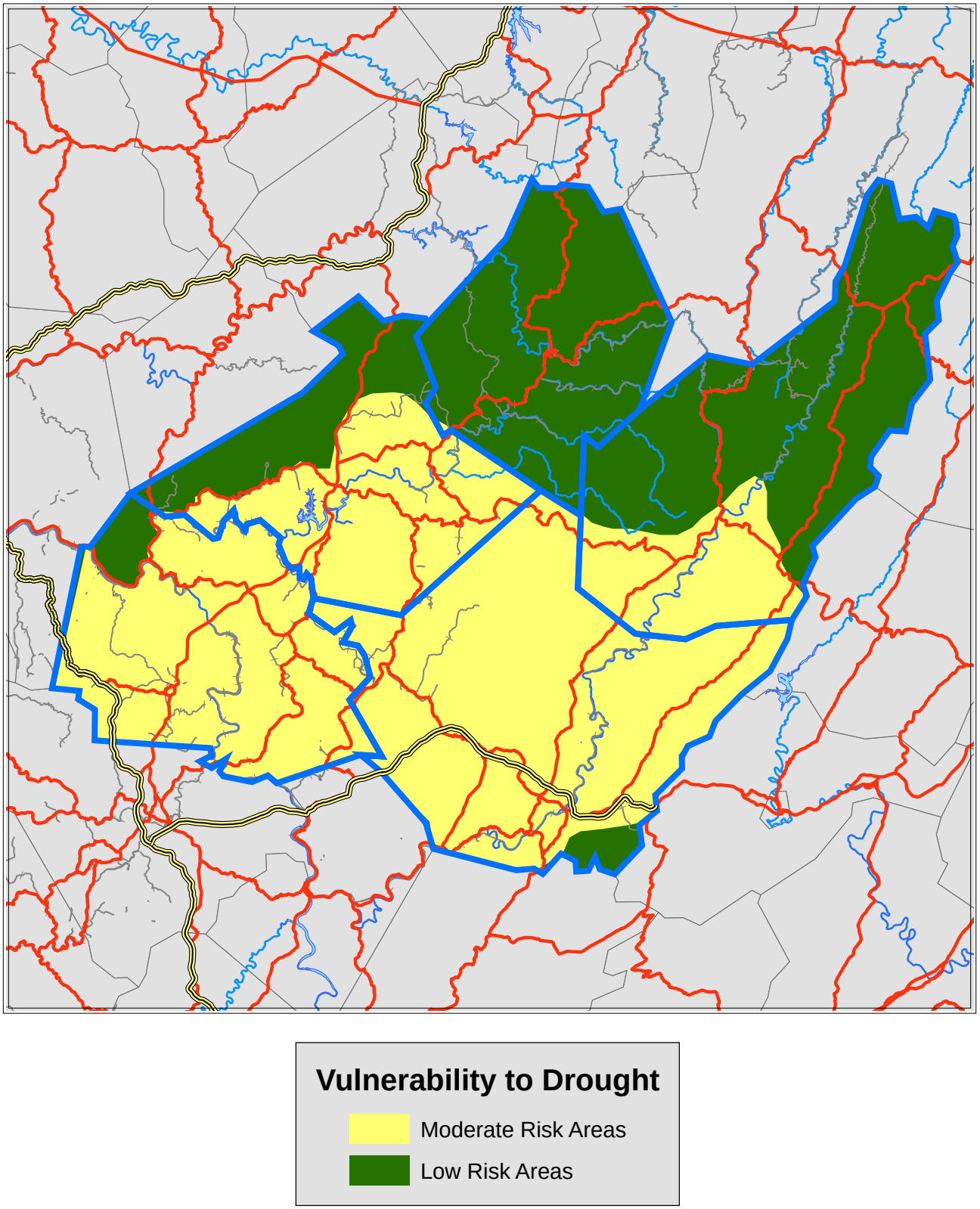
County	*Number of Farms*	*Market Value of Crops*	*Percent Change in Value from 2002*
Fayette	265	$1,724,000	+11
Greenbrier	881	$42,976,000	+23
Nicholas	434	$2,713,000	+9
Pocahontas	390	$8,165,000	+73
Webster	123	$242,000	+62
TOTALS	**2,093**	**$55,820,000**	

As with many hazards, determining specific risk and vulnerability areas for drought is difficult. Drought is an "overall" hydrologic condition; that is, if one small area was without precipitation but a nearby area was not, it would be difficult to classify the entire area as "in a drought" due to the eventual seepage of said precipitation to the overall groundwater supply. Consequently, drought is said to affect the entire region evenly.

LOSS ESTIMATES

To show drought's impact on the region, though, the following chart depicts historical drought losses (*Source: NCDC Event Records*) as well as each county's estimate of Worst-Case Scenario (WCS) drought losses.

Historical Drought Occurrences and Losses				
County	*Number of Droughts*	*Total Drought Losses*	*Estimated Losses*	
Fayette	9	N/A	$85,000,000	
Greenbrier	6	$346,000	$598,000,000	
Nicholas	8	N/A	$143,000,000	
Pocahontas	8	N/A	$0	
Webster	8	N/A	$94,000,000	
TOTALS	**39**	**$346,000**	**$920,000,000**	*Avg. per Incident: $8,800 (actual); $184,000,000 (estimated WCS)*


Vulnerability to Drought
Moderate Risk Areas
Low Risk Areas

2.2.3: Earthquake

An earthquake is a sudden motion or trembling that is caused by a release of strain accumulation within or along the edge of the Earth's tectonic plates.

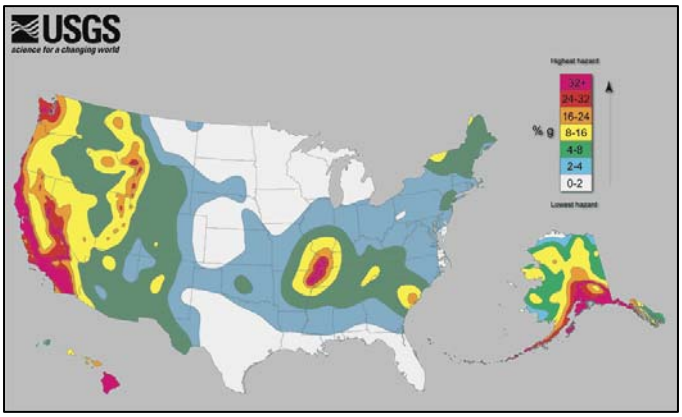
RESEARCH SOURCES

- US Geological Survey (USGS)
- Internet Research (http://www.earthquake.gov)

Period of Occurrence:	At any time
Number of Events to Date (1950 – 2010):	0 Epicenters
Probability of Event:	Infrequent
Warning Time:	None
Potential Impacts:	According to FEMA, areas with a PGA of 3 to 5 (0.03 to 0.05) will incur little to no damage with no function loss.
Cause Injury or Death:	Minor risk of injury
Potential Facility Shutdown:	None

HAZARD EFFECTS

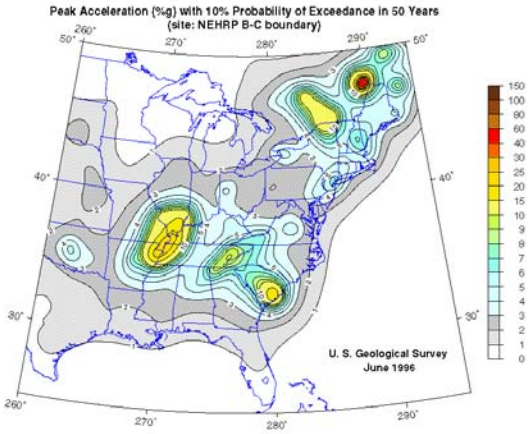
An earthquake's sudden release of stored energy may manifest itself by shaking or displacing the ground. The severity of these effects is dependent on the amount of energy released from the fault (or epicenter) of the quake. The effects of an earthquake can be felt far beyond the site of its occurrence. Earthquakes usually occur without warning and, after just a few seconds, can cause massive damage and extensive casualties. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure. Peak Ground Acceleration (PGA) is a measure of strength of ground movements. The PGA measures the rate in change of motion relative to the established rate of acceleration due to gravity.



HAZARD PROFILE

The map provided by the USGS (shown below) depicts the PGA values for areas with a 10% chance of being exceeded over the next 50 years. West Virginia does have

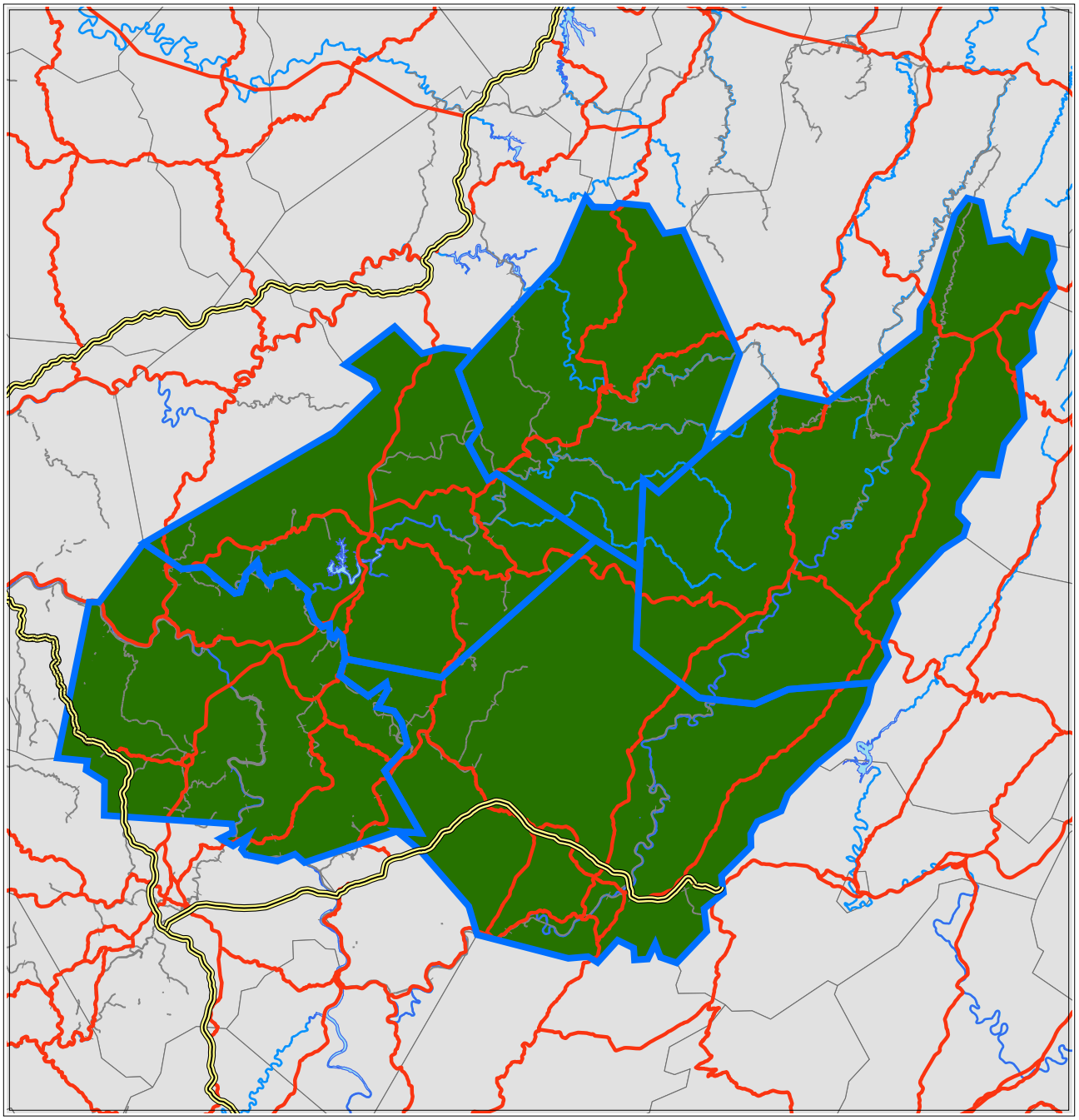
an earthquake risk as it is located in the 2 and 3%g area. All of the counties in Region 4 are located in the slightly higher-risk areas in southern and eastern West Virginia. PGA values for each of Region 4's counties are as follows: Fayette (3.5), Greenbrier (3.5), Nicholas (2), Pocahontas (4), and Webster (2.5). These approximate values were determined by averaging all of the PGA values shown by the figure below to be in each county. For instance, Pocahontas County has areas in the 3, 4, and 5 ranger according to the figure; consequently, the countywide value was estimated at "4". The Federal Emergency Management Agency (FEMA) states that areas with these PGAs are considered to have a low to moderate earthquake risk. As such, earthquake vulnerability is rated "low".



The Central and Southeast U.S. region covers a large area of relatively diffuse, low-rate seismicity. Principle areas of activity include the New Madrid Seismic Zone of the central Mississippi Valley and the Southern Appalachian Seismic Zone, extending from Virginia to Alabama. These areas of continued seismic activity increase the likelihood of Region 4's counties experiencing or being affected by an earthquake at some point in time even though there is no historical evidence of an earthquake occurring in the past. This assumption recently proved true, as a small earthquake (magnitude 2.9) occurred in April, 2010, near the Town of Man in Logan County (southwest of Region 4). A second small earthquake (magnitude 2.8) also occurred in April near Sutton in Braxton County, which lies just to the north of Nicholas County.

LOSS ESTIMATES

The somewhat random historical occurrences of earthquakes would indicate that all structures throughout Region 4's counties to be equally at risk from earthquakes. The severity of those earthquakes, though, is expected to be very low (according to FEMA's 386-2 document). Given this low severity, officials in all five (5) counties of Region 4 estimated earthquake losses to be zero.



Vulnerability to Earthquakes

Low Risk Areas

2.2.4: Flooding

Flooding is defined as a general temporary condition of partial or complete inundation of normally dry land areas from: overflow of inland or tidal waters; unusual and rapid accumulation of runoff of surface water from any source; mudflows; or the sudden collapse of shoreline land. A flash flood is a rapid flooding of low-lying areas, rivers, and streams that is caused by intense rainfall and is often associated with thunderstorms.

RESEARCH SOURCES

- National Climatic Data Center (NCDC) Event Records
- Interviews with Local Officials

Period of Occurrence:	Greenbrier River – Primarily January through May (history shows incidents occurring year-round) Flash Flood – At any time depending on recent weather conditions Result of Dam Failure – At any time
Number of Events to Date (1985 – 2010):	41
Probability of Event:	Frequent
Warning Time:	River Flood – 3 to 5 days Flash Flood – Minutes to hours Dam Failure – None
Potential Impacts:	Impacts to human life, health, and public safety. Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Can lead to economic losses such as unemployment, decreased land values, and agrobusiness losses. Floodwaters are a public safety issue due to contaminants and pollutants.
Cause Injury or Death:	Injury and moderate risk of death
Potential Facility Shutdown:	Days to Weeks

HAZARD EFFECTS

Flooding is arguably the highest priority hazard in all five (5) counties throughout the region (as is the case in most of West Virginia). The counties are susceptible to flooding largely due to physical geography, which includes several rivers and creeks as well as varied topography. The worst floods usually occur when a river overflows its

banks. Periodic floods occur naturally on most rivers, forming an area known as a "floodplain". With enough rainfall, the rivers and creeks will rise up to and over the floodplain, thus causing a flood.

Flash flooding is also a common concern throughout the region. Historical occurrences can indicate where flash flooding will strike, but it is somewhat more unpredictable than riverine flooding. Flash flooding can be a result of an overloaded storm water management system, a washed out creek bed, water rushing off of a hill or mountain, etc. In some cases, flash floods result in great damage because areas that are not in identified floodplains (and are thus not prepared for potential flooding) are affected.

DESCRIPTION OF EXISTING FLOOD HAZARD AND IDENTIFICATION OF FLOOD RISK

All of the Region 4 counties have an extensive history of flooding. The table below lists the number of flooding events faced in the counties since 1985 as well as the reported damage and any injury/death information.

Historical Flood Events in Region 4

County	*Number of Events*	*Reported Damage*	*Injuries*	*Deaths*
Fayette	20	$62,314,000	0	2
Greenbrier	39	$5,670,000	0	0
Nicholas	23	$32,063,000	0	3
Pocahontas	31	$18,733,000	0	2
Webster	32	$32,851,000	0	3
TOTALS	**145**	**$151,631,000**	**0**	**10**

To better profile the type of impact flooding events could have on the region, Hazus reports were generated for 10-year, 25-year, and 50-year flood events in each of the region's counties. (*NOTE: The full Hazus reports are included in Appendix 1.)

10-Year Flood Event

This type of flood event has a 10% chance of occurring in any single year (*Source: Wikipedia*). The following impacts, listed by county, are anticipated.

- Fayette
  - An estimated 285 buildings would have moderate damage (representing over 18% of the total number of buildings in the risk area).
  - An estimated 104 buildings would be completely destroyed.
  - It is estimated that only 74 hospital beds (out of a total of 173) would be available during the flooding event. (Hazus estimates that one [1] of the two [2] local hospitals would be moderately damaged, thus affecting its use.)
  - An estimated 22,260 tons of debris would be generated.
  - As many as 645 households could be displaced, which could result in approximately 951 people needing shelter.
  - The total building-related loss could exceed $137,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 45% of the estimate.

- Greenbrier
  - An estimated 346 buildings would have moderate damage.
  - An estimated 37 buildings would be completely destroyed.
  - An estimated 20,042 tons of debris would be generated.
  - As many as 826 households could be displaced, which could result in approximately 1,034 people needing shelter.
  - The total building-related loss could approach $129,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 47% of the estimate.
  - Economic losses could top $131,000,000.

- Nicholas
  - An estimated 72 buildings would have moderate damage.
  - An estimated 18 buildings would be completely destroyed.
  - An estimated 6,234 tons of debris would be generated.
  - As many as 277 households could be displaced, which could result in approximately 287 people needing shelter.
  - The total building-related loss could approach $27,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 79% of the estimate.
  - Economic losses could exceed $27,000,000.

- Pocahontas
  - An estimated 226 buildings would have moderate damage.
  - An estimated 32 buildings would be completely destroyed.
  - An estimated 9,720 tons of debris would be generated.
  - As many as 337 households could be displaced, which could result in approximately 400 people needing shelter.
  - The total building-related loss could exceed $57,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 52% of the estimate.
  - Economic losses could top $59,000,000.

- Webster
  - An estimated 105 buildings would have moderate damage.
  - An estimated 19 buildings would be completely destroyed.
  - An estimated 7,835 tons of debris would be generated.
  - As many as 264 households could be displaced, which could result in approximately 296 people needing shelter.
  - The total building-related loss could reach $28,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 75% of the estimate.
  - Economic losses could approach $28,000,000.

- Regionally, as many as 1,034 buildings could be moderately damaged, with another 210 being destroyed. An estimated 2,968 persons would be displaced from their homes and seek shelter in public shelters or with family or friends. Economic losses could total $384,000,000 and building-related losses could top $378,000,000.

25-Year Flood Event

Twenty-five (25)-year floods have a 4% chance of occurring in any single year. The following impacts, listed by county, are anticipated.

- Fayette
  - An estimated 359 buildings would have moderate damage.
  - An estimated 146 buildings would be completely destroyed.
  - It is estimated that no hospital beds would be available.
  - It is anticipated that one (1) each of the following would be moderately damaged: fire department (with potential loss of use), hospital, police station, and school.
  - As many as 742 households could be displaced, which could result in approximately 1,119 people needing shelter.
  - The total building-related loss could exceed $181,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 41% of the estimate.
  - Economic losses could total nearly $184,000,000.

- Greenbrier
  - An estimated 425 buildings would have moderate damage (representing over 31% of the total number of buildings in the risk area).
  - An estimated 47 buildings would be completely destroyed.
  - An estimated 20,629 tons of debris would be generated.
  - As many as 968 households could be displaced, which could result in approximately 1,348 people needing shelter.
  - The total building-related loss could reach $128,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 56% of the estimate.
  - Economic losses could exceed $130,000,000.

- Nicholas
  - An estimated 93 buildings would have moderate damage (representing over 25% of the total number of buildings in the risk area).
  - An estimated 14 buildings would be completely destroyed.
  - One (1) hospital and two (2) schools could be moderately damaged.
  - An estimated 7,462 tons of debris would be generated.
  - As many as 342 households could be displaced, which could result in approximately 433 people needing shelter.
  - The total building-related loss could exceed $32,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 74% of the estimate.
  - Economic losses could top $33,000,000.

- Pocahontas
  - An estimated 260 buildings would have moderate damage (representing over 23% of the total number of buildings in the risk area).
  - An estimated 42 buildings would be completely destroyed.
  - One (1) fire station, police station, and school could be moderately damaged.
  - An estimated 11,159 tons of debris would be generated.
  - As many as 438 households could be displaced, which could result in approximately 565 people needing shelter.
  - Economic losses could exceed $67,000,000.
  - The total building-related loss could exceed $65,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 53% of the estimate.

- Webster
  - An estimated 134 buildings would have moderate damage.
  - An estimated 27 buildings would be completely destroyed.
  - An estimated 9,657 tons of debris would be generated.
  - As many as 311 households could be displaced, which could result in approximately 361 people needing shelter.
  - The total building-related loss could approach $36,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 69% of the estimate.
  - Economic losses could reach $36,000,000.

- Regionally, as many as 1,271 buildings could be moderately damaged, with another 276 being destroyed. An estimated 3,826 persons would be displaced from their homes and seek shelter in public shelters or with family or friends. Economic losses could total $450,000,000 and building-related losses could top $442,000,000.

50-Year Flood Event

These types of events have a 2% chance of occurring in any single year. The following impacts, listed by county, are anticipated.

- Fayette
  - An estimated 430 buildings would have moderate damage (representing over 22% of the total number of buildings in the county).
  - An estimated 162 buildings would be completely destroyed.
  - The following critical facilities could be damaged.
    - Fire stations: 2
    - Hospitals: 1
    - Police Stations: 3
    - Schools: 1
  - As many as 878 households could be displaced, which could result in approximately 1,423 people needing shelter.

- The total building-related loss could exceed $215,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 39% of the estimate.
- Economic losses could exceed $219,000,000.

- Greenbrier
  - An estimated 496 buildings would have moderate damage (representing over 33% of the total number of buildings in the risk area).
  - An estimated 62 buildings would be completely destroyed.
  - One (1) fire station, police station, and school could be moderately damaged.
  - An estimated 22,591 tons of debris would be generated.
  - As many as 990 households could be displaced, which could result in approximately 1,380 people needing shelter.
  - The total building-related loss could exceed $138,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 56% of the estimate.
  - Economic losses could top $140,000,000.

- Nicholas
  - An estimated 125 buildings would have moderate damage (representing over 27% of the total number of buildings in the risk area).
  - An estimated 23 buildings would be completely destroyed.
  - One (1) hospital and two (2) schools could be moderately damaged.
  - An estimated 9,387 tons of debris would be generated.
  - As many as 415 households could be displaced, which could result in approximately 584 people needing shelter.
  - The total building-related loss could exceed $39,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 75% of the estimate.
  - Economic losses could exceed $40,000,000.

- Pocahontas
  - An estimated 277 buildings would have moderate damage (representing over 25% of the total number of buildings in the risk area).
  - An estimated 56 buildings would be completely destroyed.
  - One (1) each – fire station, police station, and school – could be moderately damaged.
  - An estimated 11,806 tons of debris would be generated.
  - As many as 440 households could be displaced, which could result in approximately 594 people needing shelter.
  - The total building-related loss could approach $69,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 53% of the estimate.
  - Economic losses could exceed $70,000,000.

- Webster
  - An estimated 136 buildings would have moderate damage (representing over 27% of the total number of buildings in the risk area).
  - An estimated 24 buildings would be completely destroyed.
  - An estimated 9,912 tons of debris would be generated.
  - As many as 322 households could be displaced, which could result in approximately 391 people needing shelter.
  - The total building-related loss could exceed $36,000,000. Approximately 1% of this loss would be related to business interruption. Residential losses comprise over 68% of the estimate.
  - Economic losses could approach $37,000,000.

- Regionally, as many as 1,464 buildings could be moderately damaged, with another 327 being destroyed. An estimated 4,372 persons would be displaced from their homes and seek shelter in public shelters or with family or friends. Economic losses could total $506,000,000 and building-related losses could top $497,000,000.

Hazus reports were also compiled for the 100-year flood event, which is a flood event with a 1% chance of being equaled or exceeded in any single year (*Source: Wikipedia*). If an event, though, were to be classified as a 100-year flood in any county, it is likely that the event itself would be regional and affect, at least minimally, other nearby counties. As such, the 100-year event is analyzed regionally by this profile. The following estimates apply to a 100-year flood.

- Buildings with Moderate Damage: 1,731
- Buildings Completely Destroyed: 401
- Critical Facilities Affected
    - Fire Stations: 3
    - Hospitals: 2
    - Police Stations: 5
    - Schools: 7

- Debris Generated: 98,512
- Economic Losses: $575,000,000
    - Fayette County: $242,000,000
    - Greenbrier County: $158,000,000
    - Nicholas County: $52,000,000
    - Pocahontas County: $77,000,000
    - Webster County: $46,000,000

- Building-Related Losses: $566,000,000
    - Fayette County: $239,000,000
    - Greenbrier County: $155,000,000
    - Nicholas County: $52,000,000
    - Pocahontas County: $75,000,000
    - Webster County: $45,000,000

REPETITVE LOSS PROPERTIES

Several communities see repeated flooding problems. Some even contain a number of properties that have been flooded and repaired multiple times. These properties are referred to as “Repetitive Loss” (RL) properties. Actual RL listings are protected by privacy laws because of the presence of names, addresses, losses, etc.

These properties, though, can be depicted in this document by type (i.e., single family, 2-4 family, etc.). To better illustrate areas with repeated flooding problems, the *general* areas where these properties are located is also listed.

- Alderson: 1 single family property
- Fayette County: 7 single family properties
- Greenbrier County: 6 single family properties (2 in Charmco, 3 in Hines, 1 miscellaneous unincorporated area)
- Marlinton: 72 total properties (43 single family, 24 non-resident, 4 assmd condo, 1 other residential)
- Mount Hope: 2 single family properties
- Nicholas County: 14 total properties (11 single family, 3 non-resident)
- Pax: 2 total properties (1 each single family and non-resident)
- Pocahontas County: 6 total properties near Seebert (5 single family, 1 non-resident)
- Rainelle: 2 single family properties
- Rupert: 3 single family properties
- Webster County: 19 total properties (17 single family, 2 non-resident)

NFIP COMPLIANCE

The following local governments in Region 4 are participants in the National Flood Insurance Program (NFIP). (The date the jurisdiction joined the NFIP is included in parentheses.)

- Town of Alderson (September, 1991)
- Town of Ansted (October, 1981)
- Town of Camden-on-Gauley (February, 1990)
- Town of Cowen (February, 1990)
- Town of Durbin (October, 1989)
- Fayette County (March, 1988)
- Town of Fayetteville (N/A)
- Town of Gauley Bridge (September, 1991)
- Greenbrier County (January, 1988)
- City of Lewisburg (N/A)
- Town of Marlinton (October, 1989)
- Tow of Meadow Bridge (January, 1991)
- City of Montgomery (June, 1982)
- City of Mount Hope (August, 1979)
- Nicholas County (November, 1991)
- City of Oak Hill (January, 1980)
- Town of Pax (March, 1988)
- Pocahontas County (October, 1989)
- Town of Quinwood (February, 1981)
- Town of Rainelle (November, 1987)
- City of Richwood (September, 1991)
- City of Ronceverte (May, 1990)
- Town of Rupert (August, 1984)
- Town of Smithers (April, 1982)
- Town of Summersville (August, 1984)
- Webster County (February, 1990)
- Town of Webster Springs (February, 1990)
- City of White Sulphur Springs (August, 1978)

Each jurisdiction has designated an “NFIP Coordinator”, sometimes referred to as the “Floodplain Manager”. This individual maintains the jurisdiction’s floodplain ordinance and ensures that development is compliant with that ordinance (and, consequently, the NFIP). The operations of the floodplain offices in Region 4 are similar from jurisdiction to jurisdiction (*Source:* Interviews with floodplain managers). Generally, all provide three (3) basic services: floodplain identification, floodplain management, and outreach.

Floodplain Identification

Throughout the region, the floodplain managers are the primary local contact for floodplain mapping. In many cases, they are responsible for using these maps to determine whether structures or proposed structures/developments are either in or out of the floodplain. Floodplain managers can provide information as to the "zone" (e.g., A, AE, etc.) a proposed development is located. Zone designations can affect insurance policies and rates.

Floodplain managers work with surveyors and engineers to assist the public with elevation certificates. This assistance includes putting those in need in contact with appropriate surveyors, providing access to certain forms (e.g., letter of map amendment, etc.), etc. Floodplain managers may also, as is the case in Webster County, serve as a liaison with the Federal Emergency Management Agency (FEMA) by collecting and submitting completed certificates.

Finally, on an as-needed basis, floodplain managers review updates to the flood maps themselves. This type of service is done to varying degrees throughout the region. For example, Fayette County's flood maps were updated in September, 2010; consequently the Fayette County coordinator recently completed a significant effort in this area. Webster County's coordinator, though, recently received updated maps in draft and has been asked to review them. As a follow up to map review, floodplain managers work with their governing body to update the floodplain ordinance appropriately.

Floodplain Management

In many ways, "floodplain management" is difficult to define. All floodplain managers work closely with their governing bodies to ensure that the floodplain ordinance is current and viable. Floodplain managers are responsible for enforcing the floodplain ordinance (usually through the floodplain identification tasks discussed above). Floodplain managers also keep records of all maps and certificates for their jurisdictions.

The coordinators for the five (5) counties in the region also often provide support to municipal floodplain coordinators. In many of the municipalities (i.e., Ansted, Fayetteville, Smithers, Quinwood, Rainelle, Renick, Ronceverte, and Rupert), the municipal floodplain coordinator is the Mayor. County and other municipal floodplain coordinators often support these municipalities with advice, technical assistance, quality control (i.e., a "second opinion"), etc. since Mayors frequently change. Further, many of

the municipal jurisdictions throughout the region are small with part-time or volunteer government staff. County coordinators can support these efforts as well. As reiterated by Webster County's floodplain manager, though, the municipalities themselves are responsible for providing the "ultimate say" for cases within their jurisdiction.

Municipal floodplain management is also closely related to the building permitting process. Many municipal coordinators indicated that determining whether a proposed project was in the floodplain was a part of their approval process.

Outreach

Finally, the floodplain coordinators serve as the Points of Contact (POCs) for their jurisdiction's residents regarding floodplain regulations. All coordinators indicated that they maintain the appropriate forms, contact lists for local surveyors and engineers, the most recent version of Flood Insurance Rate Map (FIRM) or D-FIRM information, etc. Educating the community about the value of flood insurance also falls under this category.

VULNERABLE STRUCTURES

Vulnerable Structures – Flooding								
County	*Residential*	*Commercial*	*Industrial*	*Agricultural*	*Religious*	*Government*	*Education*	*Utilities*
Fayette	2678	17	2	0	2	0	0	0
Greenbrier	3132	339	4	73	15	6	3	4
Nicholas	1543	12	1	0	3	0	0	1
Pocahontas	1500	100	0	100	20	5	1	3
Webster	1900	77	18	33	3	2	1	2
TOTALS	**10753**	**545**	**25**	**206**	**43**	**13**	**5**	**10**

LOSS ESTIMATES: See Hazus information above.

*NOTE: Detailed flood mapping for each county is maintained by each jurisdiction in Region 4. Identification of floodplain areas on those maps is based on Flood Insurance Rate Map (FIRM) data (D-FIRM, if available) produced by the National Flood Insurance

Program NFIP. Additional resources, such as the West Virginia Flood Hazard Determination Tool (http://www.mapwv.gov/flood/) can also be used. See the regional flood map that is appended to this document for a general, graphic depiction of flood risk in Region 4.

2.2.5: Hailstorm

Hail is a form of precipitation which occurs when freezing water in thunderstorm type clouds accumulates in layers around an icy core. When this event takes place, balls or irregular lumps of ice are created. On average, hail can be from 5mm to 50mm in diameter.

RESEARCH SOURCES

- National Climatic Data Center (NCDC) Event Records

Period of Occurrence:	At any time
Number of Events to Date (1971 – 2010):	196
Probability of Event:	Likely – Usually associated with severe thunderstorms
Warning Time:	Minutes to hours
Potential Impacts:	Large hail can minimally damage property (facilities) as well as crops
Cause Injury or Death:	Injury
Potential Facility Shutdown:	Minimal

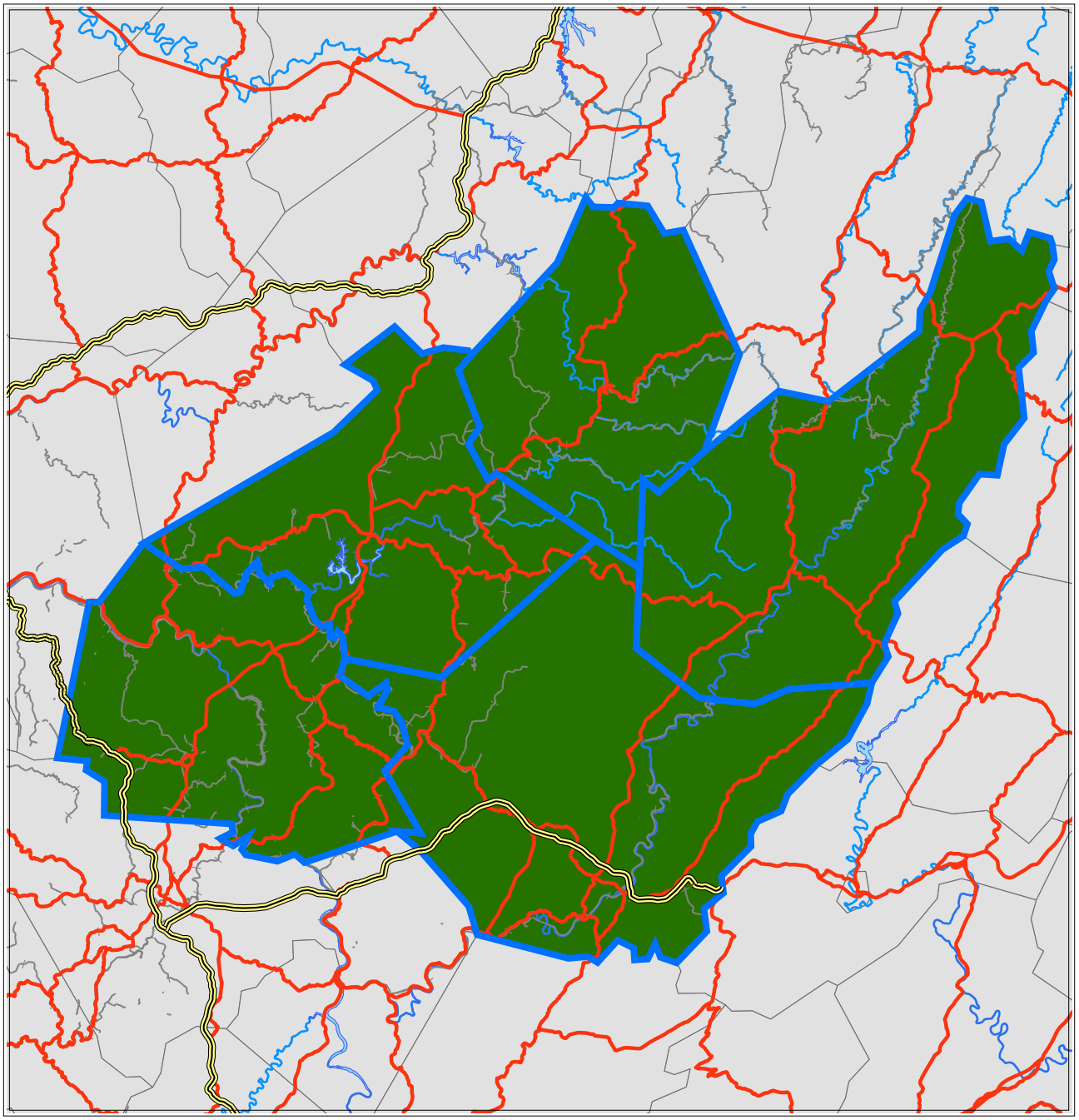
HAZARD EFFECTS

When hail occurs, it can cause damage by battering crops, structures, automobiles, and transportation systems. When hailstorms are large, especially when combined with high winds, damage can be somewhat extensive. Hailstorms are more common in elevated areas, such as the mountains, than tropical areas since locations such as mountains are closer to the bottom of thunderstorms. In mountainous areas, the falling hail has less time to melt before touching the ground. The counties in Region 4 are susceptible to hailstorms due to their proximity in the mountainous portions of eastern and southern West Virginia.

Hail is a relatively minor natural hazard in all parts of the region. It has been included in this plan by virtue of the frequent occurrences. All parts of the region are affected equally. Even with these frequent occurrences, losses are small, especially to critical facilities and other infrastructure. Much like minor thunderstorms, hailstorms rarely slow down the daily lives of the residents in the region. If their vehicles or homes are damaged, they usually claim those damages on their insurance policies or repair the damage themselves.

LOSS ESTIMATES

As a minor hazard, potential losses as a result of hail are small, even though all structures in the region can be said to be at risk of hail damage. The average losses per worst-case scenario hail event could total $10,000,000. If all counties were damaged to the “worst-case scenario” level, losses could be as much as $50,000,000. *NOTE: Loss estimates are listed at these levels because of the confusion usually results in damage from hailstorms (as directly from hail or as part of the thunderstorm producing hail).



Vulnerability to Hailstorms

Low Risk Areas

2.2.6: Hazardous Material Incident

A technological hazard refers to the origins of incidents that can arise from human activities such as the manufacture, transportation, storage, and use of hazardous materials.

RESEARCH SOURCES

- *Greenbrier Co. Commodity Flow Study* (CFS), 2009
- *Nicholas Co.* CFS, 2007
- *Nicholas Co. Vulnerability Assessment*, 2007
- *Webster Co.* CFS, 2009
- Interviews with Local Officials

Period of Occurrence:	At any time
Number of Events to Date (2003 – 2010):	0
Probability of Event:	Infrequent
Warning Time:	None
Potential Impacts:	Potential loss of human life, economic loss, environmental damage
Cause Injury or Death:	Injury and risk of multiple deaths
Potential Facility Shutdown:	Days to weeks

HAZARD EFFECTS

The manufacture, storage, transportation, and use of hazardous materials can become a hazard if an accident occurs. Hazardous material incidents typically happen in one (1) of two (2) ways: fixed facility releases and transportation accidents. The major difference between the two is that it is reasonably possible to identify and prepare for a fixed facility incident because laws require those facilities to notify state and local authorities of what materials are being used, stored, and/or produced at that facility.

Transportation incidents are substantially more difficult for which to prepare, however, because it is difficult to determine what material(s) could be involved until the accident actually happens. Information is routinely compiled on the locations of facilities that store hazardous materials. Further, the US Department of Transportation (USDOT) estimates that the vast majority of hazardous material incidents occur during the transport phase.

HAZARD PROFILE

All counties in Region 4 contain “covered facilities” that report the use and/or storage of hazardous materials to the appropriate county Local Emergency Planning Committee (LEPC). The following are approximate facility counts for each county (*Source: Local LEPCs*):

- Fayette: 22
- Greenbrier: 35
- Nicholas: 32
- Pocahontas: 10
- Webster: 10

It could be easy to predict the location of fixed facility hazardous material incidents. The probability of such occurrences, though, is relatively low. Should an event occur, many facilities have internal response protocols to contain the incident.

Three (3) of the five (5) counties in the region have recently completed commodity flow studies to analyze the transport of materials, primarily along highways. The region itself is traversed by two (2) major thoroughfares: US 19 (N/S) and Interstate 64 (E/W). Other routes, such as State Route (SR) 20, US 60, and US 219 also run through the area. All nine (9) of the USDOT’s hazard classes were sighted along US 19; seven (7) of the nine (9) were sighted along I-64. The implication is that responders in the region must prepare for an incident involving any class of material.

Some predictions, though, can be made. Of these three (3) flow studies, flammable liquids were the most frequently transported material, followed closely by flammable/non-flammable gases and corrosive materials. Such statements are intuitive. For example, gasoline is a Class III flammable liquid. Propane and oxygen are Class II gases and sodium hydroxide and chlorine carry corrosive placards. These materials are commonly used in transportation, water treatment, home heating, etc.

The map below depicts high and moderate risk areas for transportation hazardous material incidents throughout the region. The red bands roughly follow the paths of US 19 and Interstate 64 and represent high risk areas. The yellow bands following SR 20, SR 92, US 219, and US 250 represent moderate transportation hazmat hazards.

VULNERABLE STRUCTURES

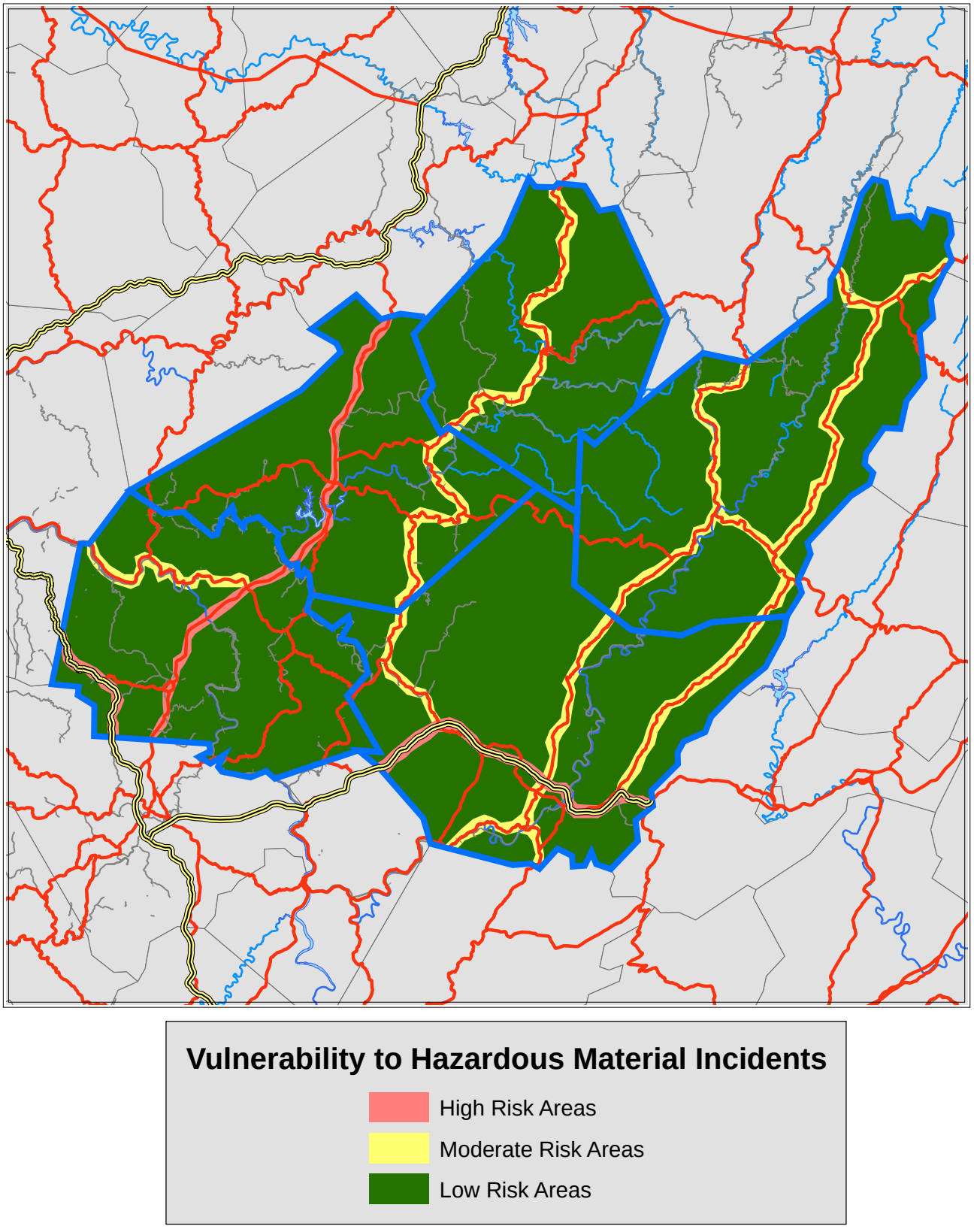
Vulnerable Structures – Hazardous Material Incident								
County	*Residential*	*Commercial*	*Industrial*	*Agricultural*	*Religious*	*Government*	*Education*	*Utilities*
Fayette	1562	428	20	40	6	8	1	2
Greenbrier	3685	150	4	145	19	4	5	6
Nicholas	900	299	14	46	8	2	4	4
Pocahontas	2000	50	0	75	10	2	2	3
Webster	760	103	114	19	6	6	3	2
TOTALS	**8907**	**1030**	**152**	**325**	**49**	**22**	**15**	**17**

LOSS ESTIMATES

In general, due to the higher number of covered facilities and the presence of major thoroughfares, Nicholas, Fayette, and Greenbrier Counties are at a higher risk from hazardous materials than Pocahontas and Webster Counties. Loss estimates, though, should be done for all five (5) counties given the presence of covered facilities (who will likely have materials shipped to or from their facility).

In an effort to assist jurisdictional understanding of risks and implementation of strategies, such estimates were done for each county; the following table reflects those efforts. These are Worst-Case Scenario (WCS) estimates and were organized by county because hazardous material incidents are site-specific hazards.

Estimated Hazardous Material Losses	
County	*Loss Estimate*
Fayette	$475,000,000
Greenbrier	$310,000,000
Nicholas	$393,000,000
Pocahontas	$5,600,000
Webster	$84,000,000
TOTALS	**$1,267,600,000**


Vulnerability to Hazardous Material Incidents
High Risk Areas
Moderate Risk Areas
Low Risk Areas

2.2.7: Land Subsidence

Land subsidence refers to any failures in the ground that cause collapses in the earth's surface.

RESEARCH SOURCES

- Interviews with Local Officials
- Internet Research (http://www.nationalatlas.gov)

Period of Occurrence:	At any time – Chance of occurrence increases following long periods of heavy rain, snowmelt, or near construction activity
Number of Events to Date (2003 – 2010):	6
Probability of Event:	Infrequent
Warning Time:	Weeks to months – Some instances of land subsidence can occur quickly without warning, but often in the context of other storm events.
Potential Impacts:	Economic losses such as decreased land values, agrobusiness losses, disruption of utility and transportation systems, and costs for any litigation. May cause geological movement, causing infrastructure damages ranging from minimal to severe.
Cause Injury or Death:	Injury
Potential Facility Shutdown:	Days to weeks

HAZARD EFFECTS

Land subsidence hazards include: landslides (a wide range of earth movement such as rock falls), debris flow (e.g., mudslides and avalanches), and expansive soils (which is the swelling and sinking of soil). Each of these hazards involves ground movement in or on the earth's surface. These hazards can be caused by natural processes such as the dissolving of limestone underground, earthquakes, or volcanic activity. Land subsidence hazards can also occur as a result of human actions such as the withdrawal of subsurface fluids or underground mining; unplanned commercial, residential or industrial developments; roadway construction; etc.

HAZARD PROFILE

Most of Region 4's counties lie on a geological formation containing evaporate rock such as salt and gypsum (The map below demonstrates the presence of "evaporite rocks" in West Virginia and roughly throughout the Region 4 area.) The eastern-most portions of the region also contain karst formations. These eastern-most portions contain

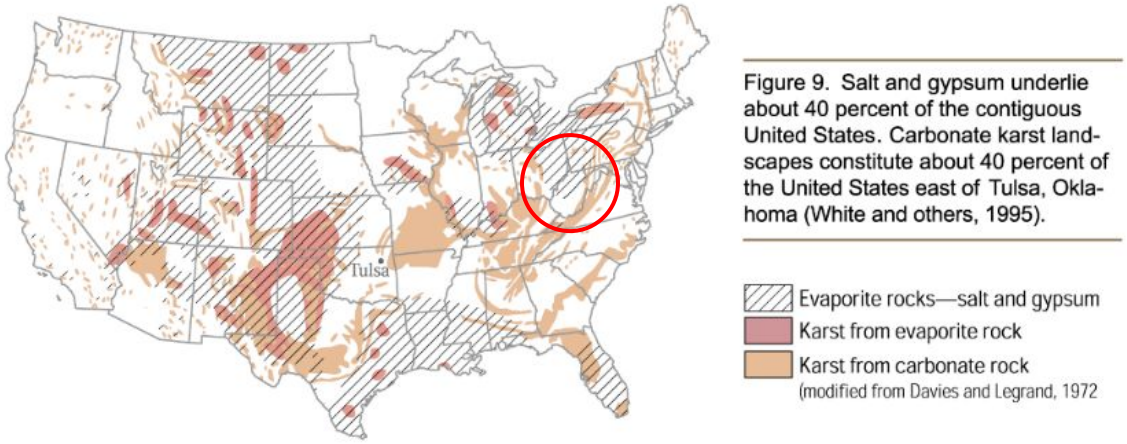


Figure 9. Salt and gypsum underlie about 40 percent of the contiguous United States. Carbonate karst landscapes constitute about 40 percent of the United States east of Tulsa, Oklahoma (White and others, 1995).

a number of underground caves that could collapse, causing subsidence on top of the ground. Much of the western portions of the region have been undermined, which could also result in subsidence. As a result, the entire region appears susceptible to subsidence, but it should be noted that the type of subsidence could vary. According to nationalatlas.gov, sink holes and other subsidence are not predicted to be extensive in the areas of West Virginia containing these formations. The map below illustrates the areas corresponding to these different types of subsidence.

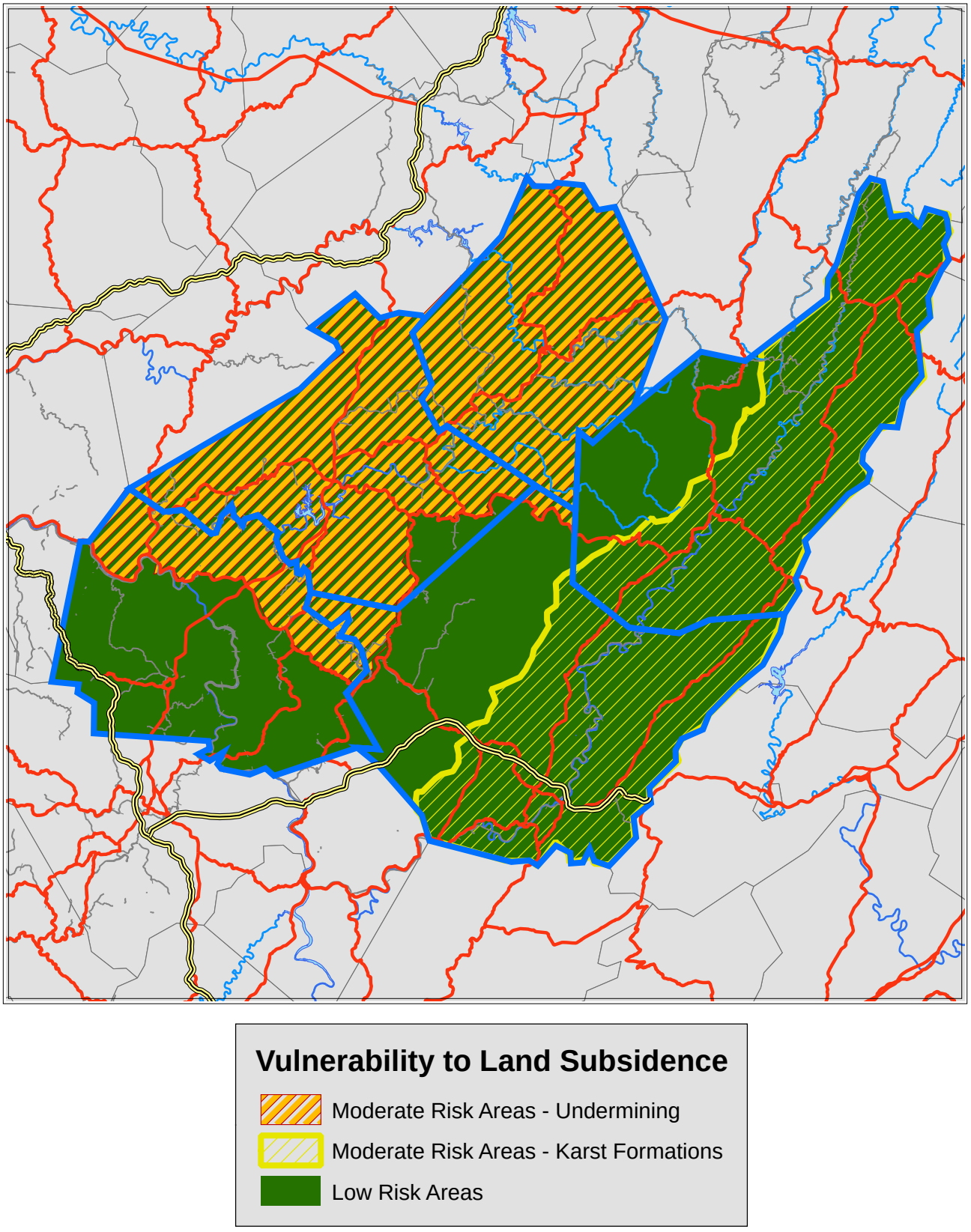
Fortunately, most counties in the region have not reported significant numbers of historical land subsidence occurrences. Most slippage is a result of other hazards, such as heavy rains. Other instances of landslides result from construction activities. Fayette County, however, has reported six (6) land subsidence events within its own boundaries. For example, heavy rains caused a slide approximately 500' in length near the Town of Smithers that affected seven (7) residents. The West Virginia Division of Highways (WVDOH) estimated the costs of debris removal to exceed $14,000.

VULNERABLE STRUCTURES

Vulnerable Structures – Land Subsidence								
County	*Residential*	*Commercial*	*Industrial*	*Agricultural*	*Religious*	*Government*	*Education*	*Utilities*
Fayette	16070	171	3	24	53	6	1	6
Greenbrier	13819	499	24	436	77	13	7	6
Nicholas	9256	120	2	27	63	2	2	10
Pocahontas	7874	262	0	328	63	15	5	6
Webster	1357	31	0	25	4	1	2	4
TOTALS	**48376**	**1083**	**29**	**840**	**260**	**37**	**17**	**32**

LOSS ESTIMATES

Land subsidence can be a gradually-occurring hazard or it can occur rapidly. In either case, repairing damages as a result of subsidence can be costly. Structural foundations can be damaged; transportation and other infrastructure can be damaged; etc. Consequently, subsidence-based loss estimates are somewhat high. The Worst-Case Scenario (WCS) average on a per county basis is $550,000,000. *NOTE: A region-wide estimate was not compiled since land subsidence is often considered a site-specific hazard.


Vulnerability to Land Subsidence
Moderate Risk Areas - Undermining
Moderate Risk Areas - Karst Formations
Low Risk Areas

2.2.8: Terrorism

Terrorism is the use of force or violence, including threats of force or violence, against persons or property in violation of the criminal laws of the United States for the purposes of intimidate, coercion, or ransom.

RESEARCH SOURCES

- Interviews with Local Officials

Period of Occurrence:	At any time
Number of Events to Date (2001 – 2010):	0
Probability of Event:	Infrequent
Warning Time:	Minimal – Depends on the presence of a threat
Potential Impacts:	Potential loss of human life, economic loss, environmental damage, disruption of lifeline facilities
Cause Injury or Death:	Injury and risk of multiple deaths
Potential Facility Shutdown:	Days to weeks or more

HAZARD EFFECTS

"Acts of terrorism include threats of terrorism; assassinations; kidnappings; hijackings; bomb scares and bombings; cyber attacks (computer-based); and the use of chemical, biological, nuclear and radiological weapons. High-risk targets for acts of terrorism include military and civilian government facilities, international airports, large cities, and high-profile landmarks. Terrorists might also target large public gatherings, water and food supplies, utilities, and corporate centers. Further, terrorists are capable of spreading fear by sending explosives or chemical and biological agents through the mail." (*Source: USDHS FEMA*)

NOTE: Throughout the remainder of this profile, terrorism will be discussed generally. This profile does not include any information on any threats that have been received, specific listings of potential targets in the region, etc.

HAZARD PROFILE

All of the counties in the region contain what could be considered "targets". In general, governmental, educational, and industrial facilities could be considered *targets*, but such a consideration usually has more to do with other circumstances surrounding the facility than the facility's identification as a governmental, educational, or industrial

facility. Four (4) of the five (5) counties contain significant targets due to the potential affect on infrastructure (both within and beyond the region), the population – either permanent or transient – that could be affected, the symbolic and/or historical influence of the site/facility, etc.

Terrorism is not always accomplished on a "grand scale", as is the case with international terrorists who are attempting to coerce the federal government. Such terrorism, while technically a hazard in throughout Region 4, is more unlikely than what is known as "domestic terrorism". Domestic terrorism can involve disgruntled employees (in the case of large industrial plants), angry parents (at schools), upset citizens (at government facilities), etc. Domestic terrorists may often only intend to harm a single individual or a small group of individuals, but the threat of their actions can be highly disruptive. Historical acts of domestic terrorism include such incidents as the Columbine High School shooting and the bombing of the Murrah Federal Building in Oklahoma City.

A terrorist event would, at a minimum, cripple the region. The effects of a terrorist incident are not only monetary; they are often emotional and symbolic. The communities throughout the region are rural and small. Any mass loss of life would take an emotional toll on the affected and nearby communities. Recent technological hazard incidents in West Virginia (e.g. the Sago and Upper Big Branch mine disasters) have shown how these losses of life impact the entire state.

Symbolically, an implemented act of terrorist would erode the feeling of security that the region enjoys. It would also likely result in a loss of faith in local decision makers and public safety officials. A loss of public support, especially in the public safety and emergency services sectors, could affect agency operating budgets, personnel recruitment, etc., thus adversely affecting the level of service that could be provided in subsequent years.

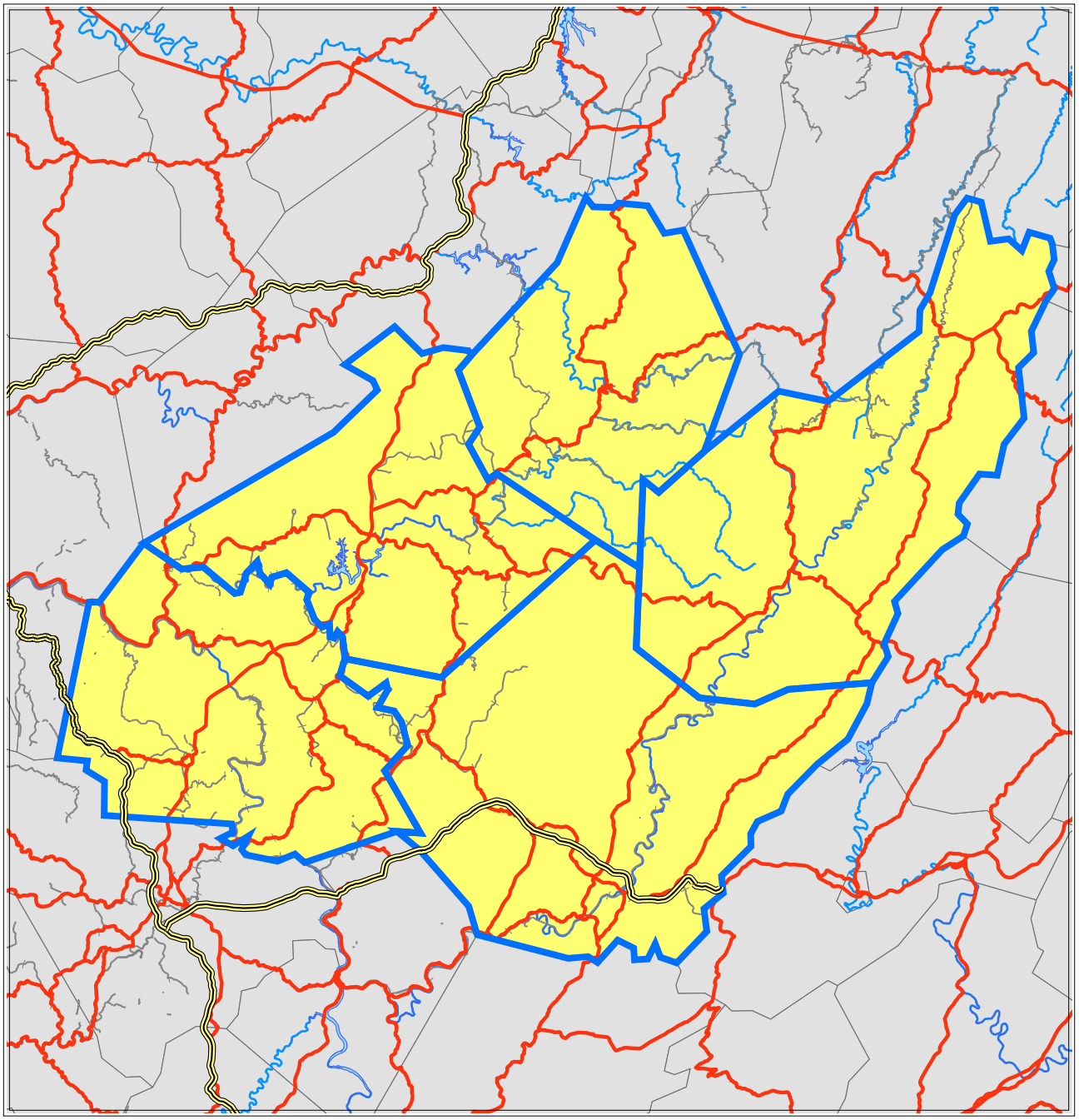
The most obvious effects of a terrorist incident would be economic. Infrastructure, including "hard" infrastructure such as facilities and systems, but also "soft" infrastructure such as people could be diminished or destroyed. Any loss of tax base and employment would be extremely hard for the communities throughout the region to overcome.

VULNERABLE STRUCTURES

Vulnerable Structures – Terrorism								
County	*Residential*	*Commercial*	*Industrial*	*Agricultural*	*Religious*	*Government*	*Education*	*Utilities*
Fayette	5133	462	7	19	35	14	2	5
Greenbrier	6449	648	12	73	15	11	6	5
Nicholas	2957	323	5	21	42	3	6	8
Pocahontas	3000	175	0	25	30	8	2	3
Webster	109	15	16	4	4	7	4	5
TOTALS	**17648**	**1623**	**40**	**142**	**116**	**43**	**20**	**26**

LOSS ESTIMATES

In an effort to assist jurisdictional understanding of risks and implementation of strategies, loss estimates were done for each county (see Appendix 2). By averaging those estimates, this plan assumes a total, regional loss estimate *per incident* to be as much as $257,000,000. If all counties in the region were affected to the “worst case scenario” level, as much as $1,300,000,000 could be lost.



Vulnerability to Terrorism

Moderate Risk Areas

2.2.9: Thunderstorm

A thunderstorm is considered severe when that storm produces a tornado, winds of at least 58 mph (50 knots), and/or hail at least ¾" in diameter. Structural wind damage may imply the occurrence of a severe thunderstorm. A thunderstorm wind equal to or greater than 40 mph (35 knots) and/or hail of at least ½" is defined as "approaching severe".

RESEARCH SOURCES

- National Climatic Data Center (NCDC) Event Records

Period of Occurrence:	Spring, summer, and fall
Number of Events to Date (1915 – 2010):	82
Probability of Event:	Frequent
Warning Time:	Minutes to hours
Potential Impacts:	Utility damage and outages, infrastructure damage (transportation and communication systems). Impacts human life, health, and public safety.
Cause Injury or Death:	Injury
Potential Facility Shutdown:	Days

HAZARD EFFECTS

The wind gusts associated with thunderstorms pose a threat to life and/or property. Severe thunderstorms also have the potential of producing a tornado with little or no advanced tornado warning. These storms may contain frequent cloud-to-ground lightning and heavy downpours which can lead to localized flooding. Generally, a weak thunderstorm which produces a wind gust of the required strength would be defined as "severe" whereas a very violent thunderstorm with continuous lightning and very heavy rain (but without the required wind gusts, hail, or tornado/funnel cloud) would not. For the purposes of this plan, though, these violent thunderstorms are also considered severe because they are more frequent and cause a significant amount of damage annually throughout the county.

HAZARD PROFILE

Thunderstorms are one of the most frequently-occurring hazards throughout the region (second only to winter storms). The following table illustrates the number of thunderstorm events in each of the region's counties as well as the damage caused by those storms (*Source: NCDC Event Records*).

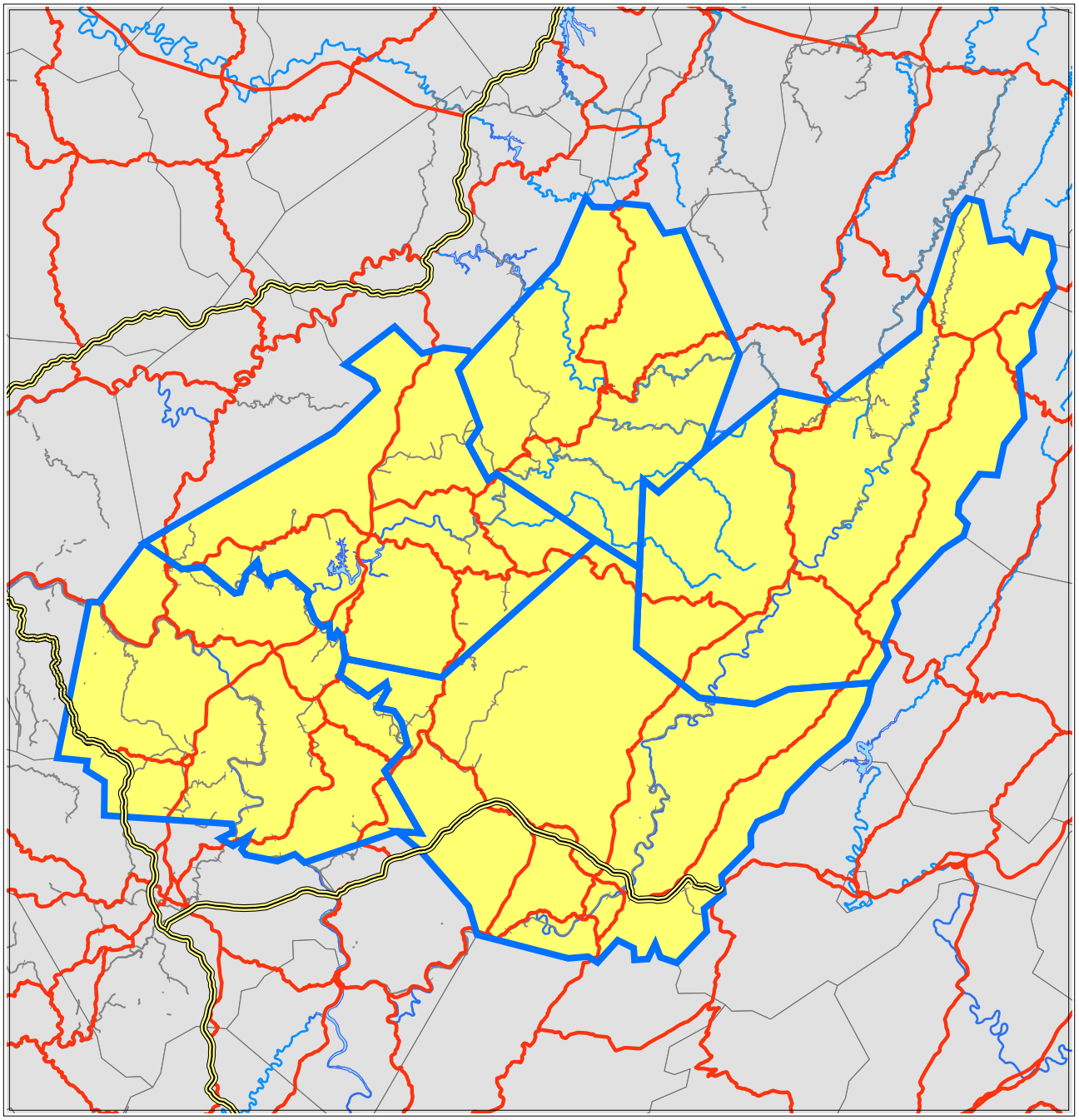
Thunderstorms Throughout Region 4		
County	*Number of Storms*	*Reported Damage*
Fayette	61	$125,000
Greenbrier	65	$647,000
Nicholas	37	$151,000
Pocahontas	15	$122,000
Webster	41	$490,000
TOTALS	**219**	**$1,535,000**

One (1) death and two (2) injuries directly related to these storms have been reported. (The death was reported in Greenbrier County; the injuries were reported in Greenbrier and Pocahontas Counties.) NCDC records reflect the most severe of thunderstorms. Storms, however, are common throughout the spring and summer months (although a thunderstorm can occur in any season) that cause downed trees and power lines. Residents and businesses are likely to incur more damage as a result of these "smaller" storms as individual houses and vehicles are damaged by fallen limbs and businesses are forced to close due to a lack of electricity.

LOSS ESTIMATES

Thunderstorm is another hazard that can be said to affect the entire region equally (i.e., all structures in the region are at risk). As part of the loss estimates completed by all of the region's counties, the average county-level Worst-Case Scenario (WCS) event could total $372,000,000 in losses. A region-wide WCS event could total as much as $1,861,000,000.

In many ways, the cascading effects of thunderstorms are more damaging than the storm itself. For example, as mentioned above, lightning strikes may cause power surges that result in damage. Thunderstorm winds may down trees that fall onto personal property. Tracking these types of damages is difficult as many people may not turn such claims into their insurance.



Vulnerability to Thunderstorms

Moderate Risk Areas

2.2.10: Wildfire

A wildfire is an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.

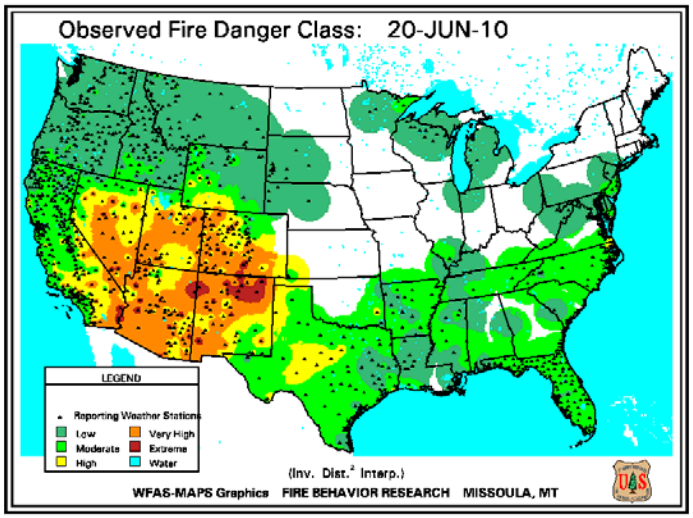
RESEARCH SOURCES

- National Climatic Data Center (NCDC) Event Records

Period of Occurrence:	At any time – Primarily summer
Number of Events to Date (1950 – 2010):	2
Probability of Event:	Infrequent
Warning Time:	Minimal
Potential Impacts:	Impacts human life, health, and public safety. Loss of wildlife habitat, increased soil erosion, and degraded water quality. Utility damage and outages, infrastructure damage (transportation and communication systems), and damaged or destroyed critical facilities.
Cause Injury or Death:	Injury and risk death
Potential Facility Shutdown:	Days to weeks or more

HAZARD EFFECTS

Wildfires often begin unnoticed and spread quickly. They are usually signaled by dense smoke that fills the area for miles around. Grasses, bushes, trees, and other vegetation supply fuel for the wildfire. The size of a wildfire is contingent on the amount of fuel available, weather conditions, and wind speed and direction. In a map from Wildland Fire Assessment System (WFAS)-Maps, Fire Behavior Research (see left), the majority of West Virginia was labeled as being at low risk for wildfires. The National Interagency Fire Center also indicates that Region 4's counties are at a low risk of wildfires. The NCDC reported two (2) wildfires in Fayette County.



HAZARD PROFILE

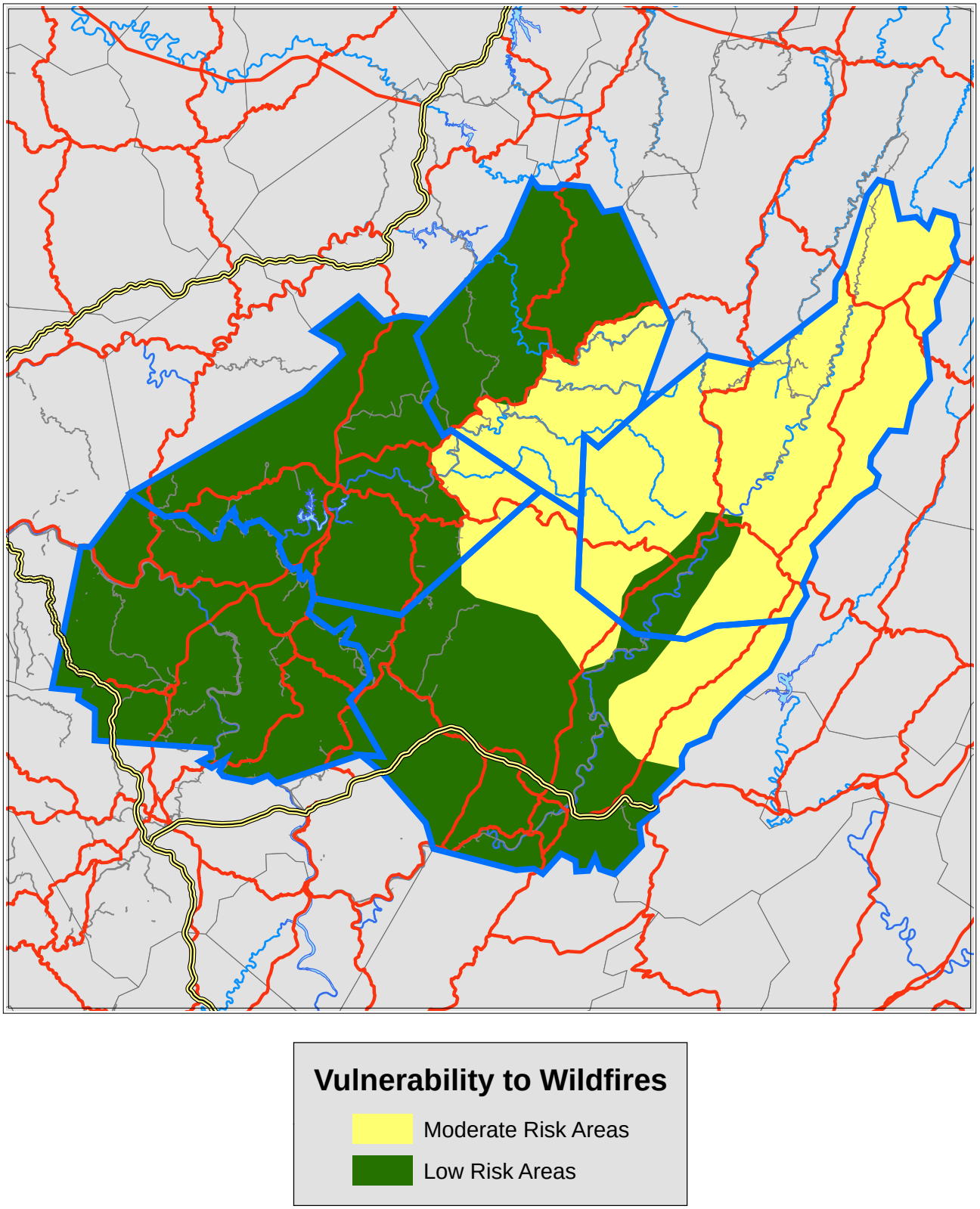
Just because only two (2) wildfires have been reported, one should not assume that vegetation fires do not occur frequently. Representatives from local fire departments throughout the region confirm that brush fires, ranging in size from a single acre to hundreds of acres occur each year. Many of these fires are extinguished before becoming a major problem. Additionally, most of these events occur in rural areas rather than in areas of urban-wildland interface.

VULNERABLE STRUCTURES

Vulnerable Structures – Wildfire								
County	*Residential*	*Commercial*	*Industrial*	*Agricultural*	*Religious*	*Government*	*Education*	*Utilities*
Fayette	15177	282	5	244	42	13	3	1
Greenbrier	3685	100	2	545	15	2	5	4
Nicholas	8742	197	3	280	50	3	10	1
Pocahontas	5354	86	0	302	33	7	3	3
Webster	3692	54	0	101	15	4	4	4
TOTALS	**36650**	**719**	**10**	**1472**	**155**	**29**	**25**	**13**

LOSS ESTIMATES

Individual county loss estimates were calculated on the assumption that a wildfire could occur in an area of urban-wildland interface; consequently, the estimates could be considered high when compared to historical occurrences. This document, however, estimates losses based on Worst-Case Scenario (WCS) events. The estimated WCS event for a single-county incident is $452,000,000, while the WCS estimate for a region-wide incident would be $2,259,000,000.


Vulnerability to Wildfires
Moderate Risk Areas
Low Risk Areas

2.2.11: Wind

Wind storms are destructive wind events that occur with or without the presence of other storm events, such as tornados or severe thunderstorms.

A tornado is a violently rotating column of air extending from a thunderstorm to the ground.

RESEARCH SOURCES

- National Climatic Data Center (NCDC) Event Records

Period of Occurrence:	At any time – Primarily during March through August
Number of Events to Date (1994 – 2010):	92 (11 tornado events)
Probability of Event:	Infrequent
Warning Time:	Minutes to hours
Potential Impacts:	Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, and damaged or destroyed critical facilities. Impacts human life, health, and public safety.
Cause Injury or Death:	Injury and risk of multiple deaths
Potential Facility Shutdown:	Days to weeks or more

HAZARD EFFECTS – WIND

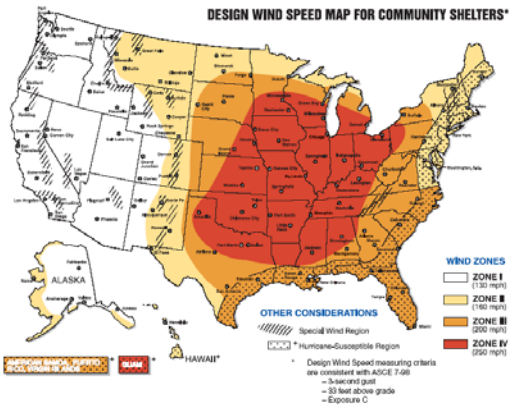
A wind storm is a severe weather condition indicated by high winds and with little or no rain. Localized geographical conditions can exacerbate the damages from high winds and cause increases in wind intensity. Since 1994, counties in Region 4 have experienced 29 high wind events.

HAZARD PROFILE – WIND

These events have resulted in significant damage as well as three (3) known injuries. The following table illustrates the high wind events, damages reported, and injuries known for each county.

High Wind Events in Region 4			
County	*Number of Events*	*Damages Reported*	*Known Injuries*
Fayette	5*	$173,000	1
Greenbrier	10	$80,000	0
Nicholas	4	$170,000	1
Pocahontas	5	$120,000	0
Webster	6	$190,000	1
TOTALS	**29**	**$730,000**	**3**

**NOTE: One of these was listed as "Strong Winds" by the NCDC.*



The "Design Wind Speed Map for Community Shelters" is one way of graphically analyzing wind risks. As can be seen, all of the counties in the region are in a "Zone III" with respect to design wind speeds, which means that shelters constructed for protective purposes should be designed to withstand up to 200 mph winds.

Severe wind events can cause a variety of secondary, or cascading, hazard events. For instance, wind may blow limbs from trees down knocking out electric power or blocking roadways. Wind often results in damages to roofs and other home finishings (such as siding, etc.).

HAZARD EFFECTS - TORNADO

The most violent tornadoes are capable of tremendous destruction with wind speeds of 250 mph or more. Damage paths can be in excess of one (1) mile wide and 50 miles long. Tornadoes are among the most unpredictable of weather phenomena. Tornadoes can occur in any state in the United States but are more frequent in the Midwest, Southeast, and Southwest.

The nature of tornadoes is that they strike at random. While it is known that some areas of the country experience tornadoes more than others, predicting exactly what parts of the region have a greater chance of being struck by a tornado is difficult. The best predictor of future tornadoes is the occurrence of previous tornadoes.

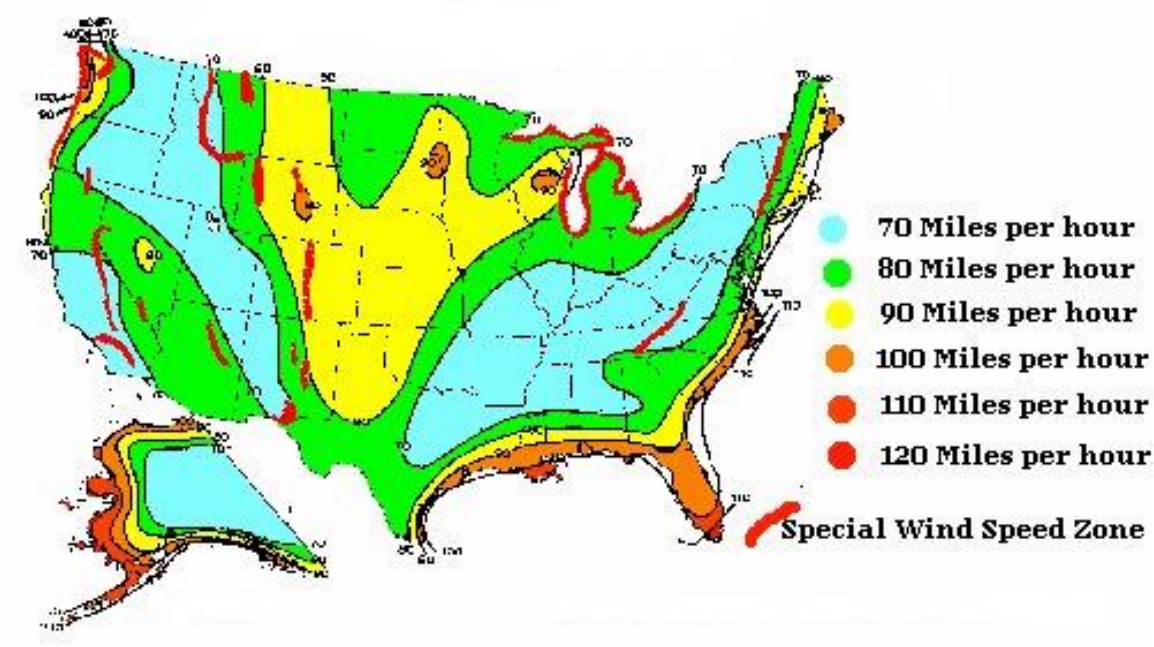
	Description	Wind Speeds
F0	***Gale Tornado***: Some damage to chimneys; break branches off of trees, pushes over shallow-rooted trees, damages signs.	40-70
F1	***Moderate Tornado***: The lower limit is the beginning of hurricane wind speed; peels surfaces off of roofs; mobile homes destroyed.	73-112
F2	***Significant Tornado***: Considerable damage; roofs torn off frame houses; mobile homes demolished; boxcars pushed over; larger trees snapped or uprooted; light object missiles generated.	113-157
F3	***Severe Tornado***: Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.	158-206
F4	***Devastating Tornado***: Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown; large missiles generated.	207-260
F5	***Incredible Tornado***: Strong frame houses lifted off foundations and carried considerable distances; automobile-sized missiles fly in excess of 100 meters.	261-318
F6	***Inconceivable Tornado***: The area of damage produced would be unrecognizable.	319-379

HAZARD PROFILE – TORNADO

According to NCDC records, there have been 11 tornadoes recorded in the region since 1961. Three (3) tornadoes have been recorded in Fayette County, totaling more than $2.7 million in damage, causing one (1) death and eight (8) injuries. Two (2) of these events were listed as F2; one (1) was listed as an F3 (see chart at right). Six (6) tornadoes have been reported in

Greenbrier County, causing in excess of $3 million in damage and three (3) known injuries. The remaining two (2) tornadoes were sighted in Nicholas County in 1967 and 1969. These events caused over $250,000 in damage and three (3) injuries.

For planning purposes, it is less important to map the tornado risk than it is to identify it. This is because it is so difficult to predict the path of future tornadoes. The Fujita scale provides us with an idea of the strength and extent of damages of tornadoes that can occur in the region. An additional resource to help understand the extent of tornado risks in the county is the "Design Wind Speed Map for Community Shelters" developed by the Disaster Center. The Disaster Center has also developed a map (shown below) that is similar to the "Design Wind Speed Map for Community Shelters" that suggests building standards with respect to wind speed.

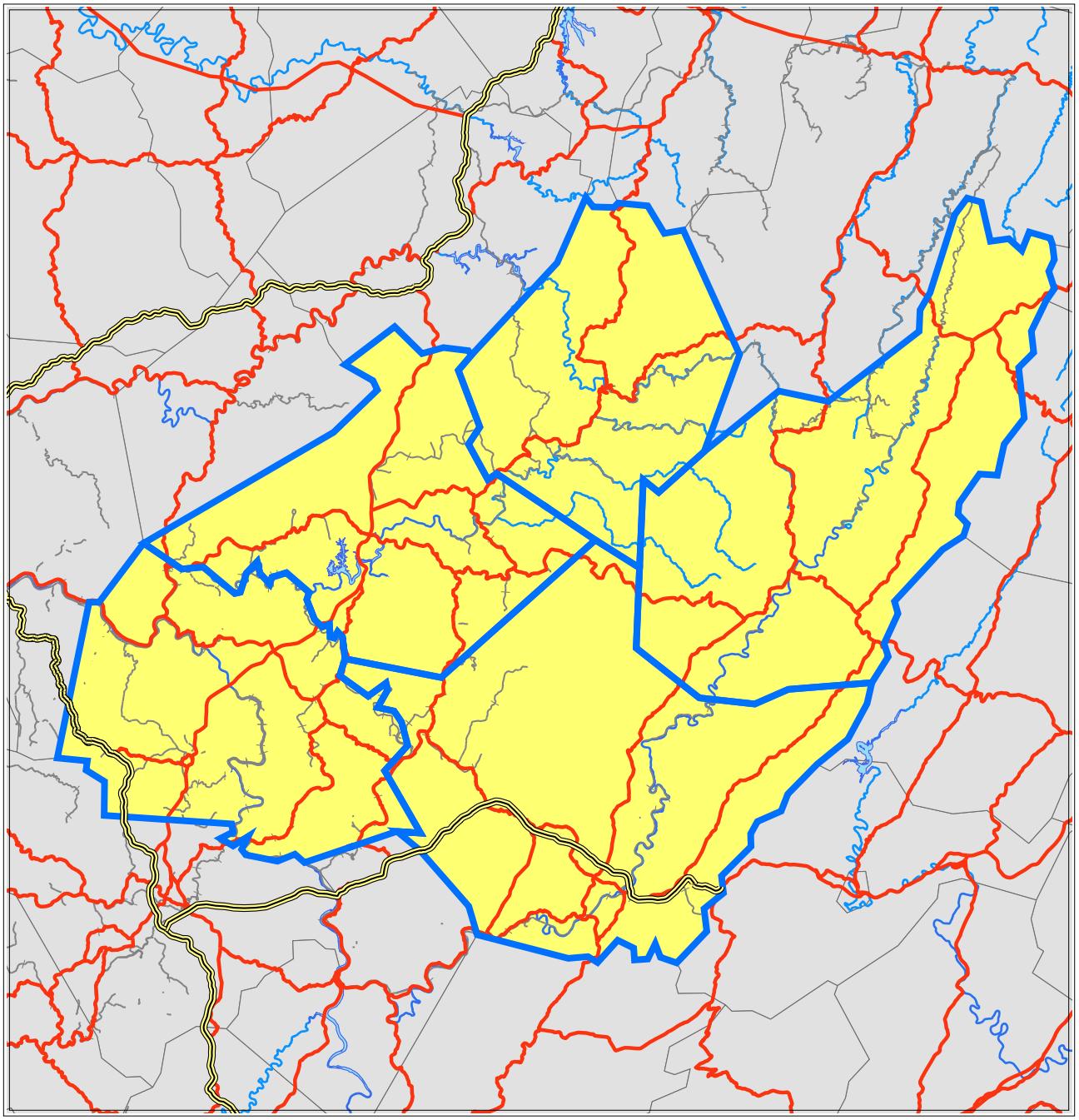


As can be seen, all of West Virginia is shown with the lowest wind speed (or the equivalent to a "gale tornado" as described above).

High wind, in general, is another of the hazards that can be said to affect the entire region. Tornadoes can also be said to affect the entire region due to their unpredictable nature. Tornadoes, however, appear to strike the least mountainous counties in Region 4; therefore, Nicholas, Fayette, and Greenbrier can be considered to have a *slightly* higher tornado risk than Pocahontas and Webster Counties.

LOSS ESTIMATES

Wind-related loss estimates are quite high because both high wind and tornado loss estimates are combined and because of the amount of damage that can be done by a single incident. As an example, consider the extremely high damage estimates from the tornado events versus just the high wind events. The average Worst-Case Scenario (WCS) wind event in a single county could result in as much as $484,000,000 in losses; a region-wide WCS event could tally $2,422,000,000 in losses.



Vulnerability to Severe Wind

Moderate Risk Areas

2.2.12: Winter Storm

A winter storm is a type of storm in which the dominant varieties of precipitation are forms that only occur at cold temperatures such as snow or sleet, or a rainstorm where ground temperatures are cold enough to allow ice to form.

RESEARCH SOURCES

- National Climatic Data Center (NCDC) Event Records

Period of Occurrence:	Winter
Number of Events to Date (1950 – 2010):	90
Probability of Event:	Likely
Warning Time:	Snow – Days Ice – Minutes to hours
Potential Impacts:	Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, damaged critical facilities. Can cause severe transportation problems and make travel extremely dangerous. Power outages, which result in loss of electrical power and potentially loss of heat. Extreme cold temperatures may lead to frozen water mains and pipes, damaged car engines, and prolonged exposure to cold resulting in frostbite.
Cause Injury or Death:	Injury
Potential Facility Shutdown:	Days

HAZARD EFFECTS

Winter storms vary in size and strength and can be accompanied by strong winds that create blizzard conditions and dangerous wind chill. There are three (3) categories of winter storms:

- **Blizzard:** A blizzard is the most dangerous of all winter storms. It combines low temperatures, heavy snowfall, and winds of at least 35 miles per hour (mph), reducing visibility to only a few yards.
- **Heavy Snowstorms:** A heavy snowstorm is one that drops four (4) or more inches of snow in a 12-hour period.

- **Ice Storm:** An ice storm occurs when moisture falls and freezes immediately upon impact.

Winter storms tend to encompass the entire county whereas flooding generally occurs within predictable boundaries along the regulatory Special Flood Hazard Area (SFHA) and its main branches and tributaries. Risks associated and identified with severe winter storms include but are not limited to the following:

- Emergency medical evacuation of the sick, elderly, and infirmed to shelters.
- Power outages to those on life support systems.
- Communications interruptions and/or outages.
- Loss of the ability to heat homes.
- Interruption of the delivery of home supplies and food.

These above-described events fall within two (2) general categories 1) road closures due to snow drifts and 2) utility failures (such as damaged supply lines). Additionally, data indicates that structural damage has occurred in several instances in the past as a result of extremely heavy snowfall. Structures damaged were usually buildings such as barns, garages, carports, etc. Additionally, severe winter storms, because of the county's mountainous terrain, frequently result in dangerous driving conditions.

HAZARD PROFILE

Winter storms are reported to be the most frequently-occurring hazard in the region. The following table illustrates the number of winter storm (i.e., snow, ice, and blizzard) events in each of the region's counties as well as the damage caused by those storms (*Source: NCDC Event Records*).

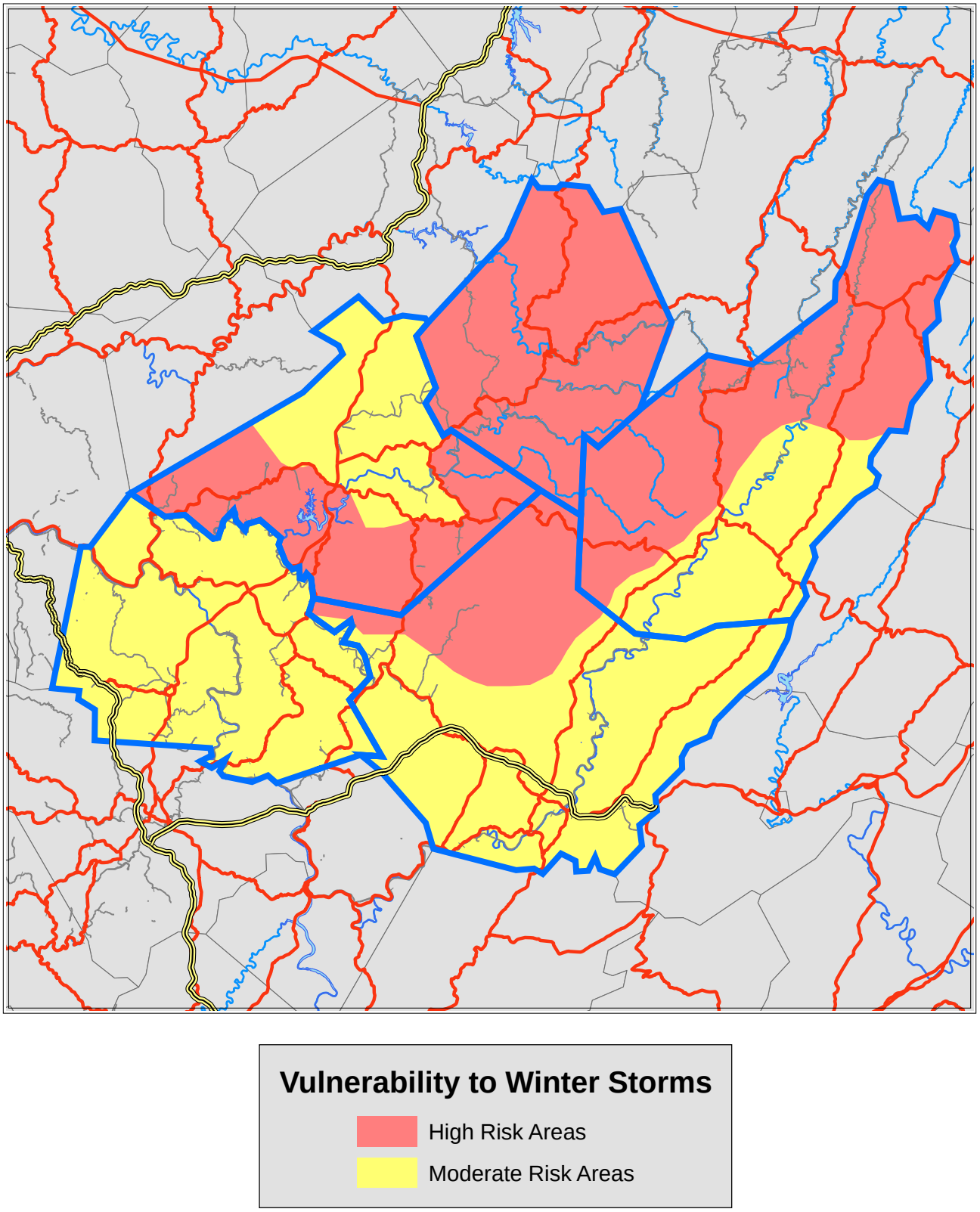
Winter Storms Throughout Region 4		
County	*Number of Storms*	*Reported Damage*
Fayette	60	$71,305,000
Greenbrier	74	$52,412,000
Nicholas	73	$73,305,000
Pocahontas	105	$64,175,000
Webster	77	$73,205,000
TOTALS	**389**	**$334,402,000**

At least four (4) deaths have resulting from winter storms have been reported in all counties (Fayette, Nicholas, Pocahontas, and Webster each report five [5] deaths). Over 30 injuries have been reported.

A winter storm is another hazard that can be said to affect the entire region equally (i.e., all structures in the region are at risk). One must realize, though, that the cascading hazards resulting from winter storms (e.g., slick roadways, drifts covering roadways, communities being isolated as a result of snow, etc.) can vary within the region – even within a single county – due to factors such as topography. Further, winter storms are often considered "just a way of life"; many residents do not report the losses from these storms. For instance, in Pocahontas County (which is one of the most mountainous counties in the region), local officials and residents alike recognize winter storms as a hazard, but do not feel that most winter storms significantly interrupt their daily activities. Such an attitude is likely shaped by the frequency with which residents face these events.

LOSS ESTIMATES

As part of the loss estimates completed by all of the region's counties, the average county-level Worst-Case Scenario (WCS) event could total $457,000,000 in losses. A region-wide WCS event, again according to the county's individual loss estimates, could total as much as $2,283,000,000.


Vulnerability to Winter Storms
High Risk Areas
Moderate Risk Areas

2.3 REGIONAL IMPLICATIONS

The hazard profiles above present, in a general sense, a regional hazard risk. This risk, though, is based off of individual county assessments of how risk *individual counties*. This section discusses how region-wide risks are realized.

Flooding, as one of the primary hazards addressed by this plan, does pose a risk regionally. Even flash flooding, which is widely considered to be a site-specific hazard, can contribute to a regional flooding impact. For example, heavy rains in Webster, Nicholas, and Pocahontas Counties may result in the flash flooding of small creeks and streams as well as municipal storm water collection systems. All of this water, though, during and after the flash flooding recedes, will likely collect in larger streams and other tributaries of rivers in Fayette and Greenbrier Counties. This extra water may contribute to riverine flooding in Fayette and Greenbrier Counties.

Riverine flooding can also be manifested in the same way. Local emergency managers indicate that flooding along the Greenbrier River near Durbin in Pocahontas County is likely to cause flooding in Marlinton, on through and into Greenbrier County, and south into Monroe and Summers Counties.

Flooding can be caused by a dam failure, which is another hazard that would have major regional implications should it occur. The Summersville Dam, in addition to providing hydroelectric power, provides flood control for a portion of the Kanawha Valley. As can be seen from the map image in the dam failure profile, a failure of the Summersville Dam would drastically affect southwestern Nicholas County and eastern Fayette County. The affects would likely be felt as far away as Charleston (since Kanawha River levels would likely rise) and along portions of the New River.

A failure of the Bluestone Dam near Hinton, West Virginia would have major effects on the southern portions of Region 4 as well. Areas along the New River watershed in Fayette County could see significant water. Water estimates for the downtown area of the City of Charleston in Kanawha County are as much as 8 feet. Consequently, estimates for upstream communities such as Montgomery, Smithers, Thurmond, and a number of unincorporated areas could be much higher.

If a catastrophic failure of either the Summersville or Bluestone Dams were to occur, the velocity of water flow would be as problematic as the volume of water released. Such velocity would result in a higher percentage of destroyed buildings along the floodway, adding to the economic loss.

The hazardous material risk also bears a regional implication, primarily in the planning function. Hazmat incidents are widely considered to be site-specific hazards, and this document would concur with such an assumption. The risk, though, is shared; risk areas can be predicted in one county based on facts and figures from a neighboring county. For instance, emergency preparedness officials in Fayette County can assume that materials observed on US 19 and I-64 (in studies conducted by Nicholas, Greenbrier, and Kanawha Counties) would pass through their county on those same routes. Pocahontas County can make similar assumptions based on flow studies done in Greenbrier, Randolph, and Webster Counties.

In other instances, commodity flow data can serve as quality control check or supplemental data from one county to another. The flow studies completed by Nicholas and Webster Counties serve as an example.

As Local Emergency Planning Committees (LEPCs) educate communities on the hazardous material risk, these efforts should extend beyond county lines. Further, the training and exercising often used to strengthen response agency capabilities can be coordinated throughout the region to strengthen the overall region's response capability.

SECTION 3.0

MITIGATION STRATEGY

Section 3.0 uses the risk assessment information from Section 2.0 to generate a list of action items that Region 4's member governments can consider to greatly lessen potential hazard losses. This section lists and prioritizes them.

It is significant to note that though this is the first version of the regional Hazard Mitigation Plan (HMP), member governments have maintained lists of projects since approximately 2003. The status indicators discussed below factor this time period into account. All status boxes in Section 3.1 read "New" since this plan itself is new; status descriptions in Section 3.2 represent what the locality has done to date.

3.1 GOALS, OBJECTIVES, AND STRATEGIES

§201.6(c)(3)(i)	[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Several hazard mitigation projects have been listed in this plan. It is significant to note that mitigation projects are developed in much the same way as other projects (i.e., community and economic development projects) considered and/or administered by the Region 4 Planning and Development Council (PDC). Member governments – in this case, their emergency management/preparedness representatives – are encouraged to compile lists of the projects they feel are most beneficial to their jurisdiction. These projects are submitted to the PDC for (consideration by and) inclusion into this plan.

Goals, objectives, and strategies are only listed in this section as a "quick reference guide" for users of the plan. Strategies – which are the mitigation projects under consideration – are organized both by hazard and jurisdiction. A simple status statement is also listed for each project. Projects can be classified as: New, Completed, Deleted, Deferred, Unchanged, or On-Going. Detailed discussions on the implementation and prioritization of mitigation projects, including an explanation of each status indicator, can be found in Sections 3.2 and 3.3 below.

ALDERSON, TOWN OF

Goal 1A: Reduce the negative effects of flooding in Alderson.

Objective 1A.1: Remove at-risk structures (both Repetitive Loss [RL] and non-RL) from Alderson's floodways and floodplains.

Project 1A.1.1: Continue to apply for Hazard Mitigation Grant Program (HMGP) funds for acquisitions, elevations, or relocations of the one (1) identified repetitive loss property in Alderson.

Status: New

ANSTED, TOWN OF

Goal 1B: Reduce the negative effects of flash flooding in Ansted.

Objective: 1B.1 Improve the drainage system.

Project 1B.1.1: Identify undersized and inadequate culverts and correct the problem.

Status: New

Goal 2B: Improve emergency response capability within Ansted.

Objective: 2B.1: Develop appropriate information from which to plan.

Project 2B.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Status: New

CAMDEN-ON-GAULEY, TOWN OF

Goal 1C: Lessen the negative effects of flooding in Camden-on-Gauley.

Objective: 1C.1: Better define the flooding risk in the town.

Project 1C.1.1: Identify culverts, storm drains, etc. that frequently back-up, causing flash flooding.

Status: New

COWEN, TOWN OF

Goal 1D: Reduce the negative effects of land subsidence in Cowen.

Objective: 1D.1: Develop a more effective response mechanism when landslides occur by identifying areas prone to landslides.

Project 1D.1.1: Coordinate with local agencies; the Webster County Office of Emergency Services (WCOES), West Virginia Division of Highways (WVDOH), and the County Commission, and develop a plan of action for the identified landslide prone areas.

Status: New

DURBIN, TOWN OF

Goal 1E: Lessen flood-related losses in Durbin.

Objective 1E.1: Review and update/revise local ordinances to better support mitigation efforts.

Project 1E.1.1: Review and update the floodplain ordinance to ensure full compliance with National Flood Insurance Program (NFIP) standards.

Status: New

Project 1E.1.2: Educate town council members and residents about the NFIP and its requirements. This project may include the facilitation of public forums to encourage questions regarding the NFIP.

Status: New

Project 1E.1.3: Coordinate with appropriate agencies to obtain updated NFIP policy-holder information within Durbin.

Status: New

Objective 1E.2: Undertake structural projects to lessen flood damage.

Project 1E.2.1: Design and construct a sewage treatment plant out of the floodplain.

Status: New

Objective: 1E.3: Coordinate with various agencies to ensure that the latest vulnerability data is available so as to effectively prioritize flood mitigation actions.

Project 1E.3.1: Coordinate with the Federal Emergency Management Agency (FEMA) to maintain an updated list of repetitive loss properties throughout Durbin.

Status: New

Goal 2E: Improve emergency response capability within Durbin.

Objective 2E.1: Plan for emergency incidents, thereby increasing preparedness.

Project 2E.1.1: Either adopt the county emergency operations plan or develop a town-specific operations plan that is fully consistent with the county plan.

Status: New

FAYETTE COUNTY

Goal 1F: Reduce the negative effects of drought

Objective 1F.1: Ensure availability & access to water.

Project 1F.1.1: Develop an education program on water conservation and the value of water-saving devices.

Status: New

Project 1F.1.2: Develop plan to have "watering points' in those areas of the county not served by public water (so citizens can obtain drinking water during droughts).

Status: New

Goal 2F: Reduce the potential effects of wildfire in Fayette County.

Objective 2F.1: Identify and reduce those factors contributing to wild fires.

Project 2F.1.1: Promote awareness and enforcement of fire season laws.

Status: New

Project 2F.1.2: Ensure public awareness of fire prevention practices, like safe clearing distance and debris maintenance for homes in wooded areas.

Status: New

Goal 3F: Reduce the negative effects of flooding in Fayette County.

Objective: 3F.1: Identify and reduce those factors contributing to floods.

Project 3F.1.1: Develop county wide storm water/drainage plan.

Status: New

Project 3F.1.2: Enforce the floodplain ordinance for all new construction.

Status: New

Project 3F.1.3: Work with the WVDOH, WV Division of Natural Resources (WVDNR), WV Department of Environmental Protection (WVDEP), Soil Conservation Services (SCS), etc. to develop a stream restoration, bank stabilization, and maintenance plan.

Status: New

Objective: 3F.2: Reduce debris and trash in our streams.

Project 3F.2.1: Inform the public about debris programs. Pursue recycling, even if hauled to Raleigh or Kanawha Counties. Coordinate with WVDOH to ensure proper permitting regarding debris removal. Work with the WVDOH to expand its tire amnesty program. Inform the public of the appliance pick-up ordinance.

Status: New

Objective: 3F.3: Improve the drainage systems.

Project 3F.3.1: Identify undersized and inadequate culverts and correct the problem.

Status: New

Project 3F.3.2: Study wastewater issue related to flooding, storm water, and public health.

Status: New

Objective: 3F.4: Remove structures from flood plains.

Project 3F.4.1: Continue to buy both repetitive and non-repetitive loss properties in flood prone areas.

Status: New

Project 3F.4.2: Work toward meeting the requirements for participation in the Community Rating System (CRS).

Status: New

Project 3F.4.3: Undertake buy-out projects in the Dunloup Watershed areas (i.e., the Dunloup Watershed Voluntary Buyout Program.

Status: New

Goal 4F: Reduce the negative effects of land subsidence in Fayette County.

Objective 4F.1: Identify and reduce those factors contributing to landslides.

Project 4F.1.1: Ensure enforcement and investigate possibility of enhancing Risk Management Plans (RMPs) for logging, mining and gas operations.

Status: New

Project 4F.1.2: Conduct regular inspection of earthen impoundments with required reporting. Doing so may require coordination with property owners.

Status: New

Project 4F.1.3: Work with the WVDOH to identify and prioritize areas prone to recurring slides. Develop plans to reduce risk and occurrence.

Status: New

Project 4F.1.4: Work with the WVDOH to develop Memorandum of Understanding (MOU) with mining companies and contractors to clear impacted roadways.

Status: New

Goal 5F: Reduce damage from severe storms in Fayette County.

Objective 5F.1: Improve preparedness, reduce power outages, improve communication & transport capabilities.

Project 5F.1.1: Reduce the impact to citizens due to power loss during severe storm events by investigating the feasibility of backup power for citizens in a special needs registry.

Status: New

Project 5F.1.2: Reduce the impact of loss of conventional communications by developing local radio network (Citizen Band [CBs] and amateur radio) and by prompting knowledge and training in this arena. Members can serve as contact points during hazard events.

Status: New

Goal 6F: Reduce potential for and impact of hazardous chemicals and cargo in Fayette County.

Objective 6F.1: Ensure public safety from hazardous chemicals.

Project 6F.1.1: Support the Local Emergency Planning Committee (LEPC) in the development of a commodity flow plan.

Status: New

Project 6F.1.2: Increase oversight of hazardous chemicals within used and stored in Fayette County.

Status: New

Project 6F.1.3: Enhance public awareness.

Status: New

Goal 7F: Improve emergency response capability within Fayette County.

Objective: 7F.1: Develop early alert system, special needs registry, and a well informed citizenry.

Project 7F.1.1: Develop early warning and alert system.

Status: New

Project 7F.1.2: Develop a special needs registry for home bound/non-ambulatory and citizens with special physical or medical needs. Entry on registry ensures check in during hazards and special attention.

Status: New

Project 7F.1.3: Develop more in-depth county asset list to better understand the value of structures within the county.

Status: New

FAYETTEVILLE, TOWN OF

Goal 1G: Reduce the negative effects of flash flooding in Fayetteville.

Objective: 1G.1: Improve the drainage system.

Project 1G.1.1: Identify undersized and inadequate culverts and correct the problem.

Status: New

Goal 2G: Improve emergency response capability within Fayetteville.

Objective: 2G.1: Develop appropriate information from which to plan.

Project 2G.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Status: New

GAULEY BRIDGE, TOWN OF

Goal 1H: Improve emergency response capability within Gauley Bridge.

Objective: 1H.1: Develop appropriate information from which to plan.

Project 1H.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Status: New

GREENBRIER COUNTY

Goal 1I: Reduce the negative effects of flooding in Greenbrier County.

Objective 1I.1: Continue working with the state to decrease future flood damage throughout the county via periodic culvert inspections.

Project 1I.1.1: Continue to work with the WVDOH to design road construction to be at the 100-year base flood elevation or higher.

Status: New

Objective 1I.2: Continue to minimize future flood damage throughout Greenbrier County by managing NFIP compliance.

Project 1I.2.1: Maintain a database of all at risk structures in floodways and floodplains; distribute information to homeowners and business on the importance of flood insurance and flood-proofing techniques to protect homes and businesses.

Status: New

Project 1I.2.2: Establish an on-going program of mitigation training for public officials and private business as well as the citizens of Greenbrier County.

Status: New

Project 1I.2.3: Continue to make informational pamphlets available to Greenbrier County citizens that promote buying flood insurance.

Status: New

Objective: 1I.3: Minimize damages by using a countywide permitting process.

Project 1I.3.1: Continue to make permitting necessary (that is consistent with local floodplain ordinances) before any new construction is allowed.

Status: New

Objective 1I.4: Provide uninterrupted water and wastewater service to customers during and after a flooding incident.

Project 1I.4.1: Determine feasibility of floodwalls or other structures to protect water treatment facilities from flooding.

Status: New

Project 1I.4.2: Determine feasibility of floodwalls or other structures to protect wastewater treatment facilities from flooding.

Status: New

Objective 1I.5: Better prepare Greenbrier County for disasters through existing programs.

Project 1I.5.1: Provide opportunities for the leaders in Greenbrier County to participate in FEMA (and/or other agency) proactive programs.

Status: New

Objective 1I.6: Remove at-risk structures (both RL and non-RL) from Greenbrier County's floodways and floodplains.

Project 1I.6.1: Continue to apply for HMGP funds for acquisitions, elevations, or relocations of identified at risk, repetitive loss, non-repetitive loss, or substantial damaged properties in Greenbrier County.

Status: New

Goal 2I: Reduce the negative effects of severe winter storms in Greenbrier County.

Objective 2I.1: Keep roadways clear of snow and ice for emergency services.

Project 2I.1.1: Continue to enhance and upgrade current snow removal capabilities throughout the county.

Status: New

Project 2I.1.2: Develop and implement programs to coordinate maintenance and mitigation activities to reduce risk to public infrastructure from severe storms.

Status: New

Project 2I.1.3: Develop and implement programs to keep trees from threatening lives, property, and public infrastructure during severe storm events.

Status: New

Objective 2I.2: Minimize long-term damages from severe storms.

Project 2I.2.1: Increase public awareness of the severe storm mitigation activities that they can undertake.

Status: New

Project 2I.2.2: Enhance weather monitoring to attain earlier severe storm warnings.

Status: New

Project 2I.2.3: Map and publicize locations around the county that have the highest incidences of extreme storms.

Status: New

Project 2I.2.4: Encourage/recommend electrical utilities to use underground construction methods where possible to reduce power outages from severe storms.

Status: New

Project 2I.2.5: Encourage/recommend improved building materials and techniques when rebuilding damaged property.

Status: New

Goal 3I: Reduce the amount of damage from severe thunderstorms in Greenbrier County.

Objective: 3I.1: Increase public knowledge and awareness as to safety procedures to follow in the event of a severe thunderstorm.

Project 3I.1.1: Support the development of and funding for an early warning mass notification system.

Status: New

Project 3I.1.2: Continue to coordinate with Blacksburg National Weather Service (NWS) office on a daily basis to improve readiness for imminent severe weather.

Status: New

Project 3I.1.3: Coordinate any warning system with the Greenbrier County Board of Education to enhance protection of students and faculty under threat of severe weather.

Status: New

Goal 4I: Reduce the effects of landslides in Greenbrier County.

Objective 4I.1: Minimize future damage from landslides throughout Greenbrier County by increasing knowledge.

Project 4I.1.1: Publicize the location of karst geologic formations along with the hazards associated with it.

Status: New

Goal 5I: Reduce the negative effects of land subsidence in Greenbrier County.

Objective 5I.1: Decrease the effects of land subsidence in Greenbrier County.

Project 5I.1.1: Continue to monitor identified areas in Greenbrier County that have limestone deposits or underground mining that may create sink holes. Update GIS databases as necessary.

Status: New

Goal 6I: Reduce the negative effects of drought in Greenbrier County.

Objective 6I.1: Decrease the effects of drought in rural areas.

Project 6I.1.1: Implement a water study and analyze the data to better help citizens during periods of drought.

Status: New

Project 6I.1.2: Identify and maintain backup water supplies to make water available to citizens.

Status: New

Goal 7I: Reduce the negative effects of other, miscellaneous hazards in Greenbrier County.

Objective 7I.1: Reduce future occurrences of power failures during disasters.

Project 7I.1.1: Coordinate with the power company to clear trees and other debris from electric lines throughout the county.

Status: New

Project 7I.1.2: Develop a database of special needs populations which require electric power for life support equipment.

Status: New

Objective 7I.2: Reduce future occurrences of communications failures during disasters.

Project 7I.2.1: Install repeaters, retro-fit generators at tower sites, and continue to work with amateur radio operators.

Status: New

Objective 7I.3: Identify the types and quantities of hazardous materials that are in the county.

Project 7I.3.1: Have commodity flow studies done to better analyze the types and quantities of materials could be present in the county.

Status: New

Project 7I.3.2: Continue to coordinate with the Regional Response Team and county response team(s) in order to provide a fast and effective response to an incident.

Status: New

Objective 7I.4: Lessen the impact of rural fires on the citizenry of Greenbrier County.

Project 7I.4.1: Find a water resource (e.g., dry hydrants) for volunteer fire departments that is strategically located for fast response. Make this resource known to fire departments.

Status: New

Objective 7I.5: Update asset inventories to better reflect critical facilities in Greenbrier County.

Project 7I.5.1: Coordinate with assets in the county to more effectively estimate losses from a disaster.

Status: New

Goal 8I: Monitor the potential for dam failures in and around Greenbrier County.

Objective 8I.1: Lessen the probability of loss of life and property damage as the result of a dam failure.

Project 8I.1.1: Develop a partnership with appropriate parties that are stakeholders in the monitoring and general condition of dams throughout Greenbrier County. Provide technical and manpower support to evaluate the status of these dams and report to the Core Planning Team on a yearly basis.

Status: New

HILLSBORO, TOWN OF

Goal 1J: Reduce the negative effects of high winds in Hillsboro.

Objective 1J.1: Consider developing countywide building codes which will regulate the materials used in buildings that are constructed with respect to design wind speed. (State building codes are rated to 90 mph winds.)

Project 1J.1.1: Promote any new construction and/or roof remodeling at the municipal level to be designed to withstand 90 mph winds.

Status: New

Goal 2J: Improve emergency response capability within Hillsboro.

Objective 2J.1: Plan for emergency incidents, thereby increasing preparedness.

Project 2J.1.1: Either adopt the county emergency operations plan or develop a town-specific operations plan that is fully consistent with the county plan.

Status: New

LEWISBURG, CITY OF

Goal 1K: Reduce the negative effects flooding in Lewisburg.

Objective: 1K.1: Provide uninterrupted water and wastewater service to customers during and after a flooding incident.

Project 1K.1.1: Design and construct an inter-connect between Lewisburg and Ronceverte to help provide water if one plant is shut down due to contamination/damages from flooding.

Status: New

Goal 2K: Lessen the negative effects of droughts that may affect Lewisburg.

Objective: 2K.1: Decrease the effects of drought.

Project 2K.1.1: Identify and maintain backup water supplies to make water available to citizens.

Status: New

MARLINTON, TOWN OF

Goal 1L: Lessen flood-related losses in Marlinton.

Objective 1L.1: Review and update/revise local ordinances to better support mitigation efforts.

Project 1L.1.1: Review and update the floodplain ordinance to ensure full compliance with NFIP standards.

Status: New

Project 1L.1.2: Educate town council members and residents about the NFIP and its requirements. This project may include the facilitation of public forums to encourage questions regarding the NFIP.

Status: New

Project 1L.1.3: Coordinate with appropriate agencies to obtain updated NFIP policy-holder information within Marlinton.

Status: New

Objective 1L.2: Undertake structural projects to lessen flood damage.

Project 1L.2.1: Construct flood levees along the Greenbrier River in Marlinton.

Status: New

Objective: 1L.3: Coordinate with various agencies to ensure that the latest vulnerability data is available so as to effectively prioritize flood mitigation actions.

Project 1L.3.1: Coordinate with FEMA to maintain an updated list of repetitive loss properties throughout Marlinton.

Status: New

Goal 2L: Improve emergency response capability within Marlinton.

Objective 2L.1: Plan for emergency incidents, thereby increasing preparedness.

Project 2L.1.1: Either adopt the county emergency operations plan or develop a town-specific operations plan that is fully consistent with the county plan.

Status: New

MEADOW BRIDGE, TOWN OF

Goal 1M: Improve emergency response capability within Meadow Bridge.

Objective: 1M.1: Develop appropriate information from which to plan.

Project 1M.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Status: New

MONTGOMERY, CITY OF

Goal 1N: Reduce the negative effects of flash flooding in Montgomery.

Objective: 1N.1: Improve the drainage system.

Project 1N.1.1: Identify undersized and inadequate culverts and correct the problem.

Status: New

Goal 2N: Improve emergency response capability within Montgomery.

Objective: 2N.1: Develop appropriate information from which to plan.

Project 2N.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Status: New

MOUNT HOPE, CITY OF

Goal 1O: Reduce the negative effects of flash flooding in Mount Hope.

Objective: 1O.1: Improve the drainage system.

Project 1O.1.1: Identify undersized and inadequate culverts and correct the problem.

Status: New

Goal 2O: Improve emergency response capability within Mount Hope.

Objective: 2O.1: Develop appropriate information from which to plan.

Project 2O.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Status: New

NICHOLAS COUNTY

Goal 1P: Increase public awareness of hazard mitigation activities and strategies.

Objective 1P.1: Continue to help families in Nicholas County be more informed about what to do before, during, and after an emergency incident.

Project 1P.1.1: Purchase and re-distribute the booklet *Getting Ready: A Family Emergency Guide* prepared by the State of West Virginia.

Status: New

Goal 2P: Minimize loss of life or property damage posed by flooding.

Objective 2P.1: Ensure that information is available specific to the flooding risk in Nicholas County.

Project 2P.1.1: Continue to review and update floodplain ordinances to regulate development within the 100-year floodplain. Make sure the public is aware of requirements in the ordinance.

Status: New

Project 2P.1.2: Continue to train and re-certify the county Floodplain Coordinator to assist citizens in complying with the floodplain ordinance.

Status: New

Project 2P.1.3: Continue to update the Geographic Information System (GIS) data layer of flood maps on the county mapping database to identify floodplain areas of Nicholas County.

Status: New

Project 2P.1.4: Continue working with municipalities to update floodplain ordinances adopted prior to 1987.

Status: New

Project 2P.1.5: Continue training the county and municipal development officials on NFIP requirements.

Status: New

Project 2P.1.6: As funds become available, undertake buyout and/or elevation projects to lessen the number of repetitive loss properties. This project also includes non-RL properties.

Status: New

Goal 3P: Reduce the current and future risks from hazards in Nicholas County.

Objective 3P.1: Direct new development away from known high-hazard areas.

Project 3P.1.1: Continue to review all comprehensive plans to ensure that designated growth areas are not in hazard areas. If they are, build mitigation measures into development plans.

Status: New

Project 3P.1.2: Continue to review all capital improvement plans to ensure that infrastructure improvements are not directed toward hazardous areas. If they are, build mitigation measures into plans.

Status: New

Goal 4P: Undertake mitigation and preparedness projects for the emergency services sector.

Objective: 4P.1: Provide local emergency responders with training opportunities related to the hazards faced by Nicholas County.

Project 4P.1.1: Coordinate with county emergency services personnel to participate in exercises of simulated biological and hazardous material incidents to practice response efforts.

Status: New

Goal 5P: Develop written policies to define goals, mitigate impacts of natural disasters, and establish long term objectives.

Objective 5P.1: Clarify the responses to natural disasters.

Project 5P.1.1: Maintain updates to plans that detail specific actions to be taken when weather events such as ice, snow, and flooding, etc. strike. Plans should include who is responsible for such actions.

Status: New

OAK HILL, CITY OF

Goal 1Q: Reduce the negative effects of flash flooding in Oak Hill.

Objective: 1Q.1: Improve the drainage system.

Project 1Q.1.1: Identify undersized and inadequate culverts and correct the problem.

Status: New

Goal 2Q: Improve emergency response capability within Oak Hill.

Objective: 2Q.1: Develop appropriate information from which to plan.

Project 2Q.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Status: New

PAX, TOWN OF

Goal 1R: Improve emergency response capability within Pax.

Objective: 1R.1: Develop appropriate information from which to plan.

Project 1R.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Status: New

POCAHONTAS COUNTY

Goal 1S: Lessen flood-related losses.

Objective 1S.1: Review, update/revise ordinances to better support mitigation efforts.

Project 1S.1.1: Review and update floodplain ordinances to ensure full compliance with NFIP standards.

Status: New

Project 1S.1.2: Educate local government representatives about the NFIP and its requirements. This project may include the facilitation of public forums to encourage questions regarding the NFIP.

Status: New

Project 1S.1.3: Coordinate with appropriate agencies to obtain updated NFIP policy-holder information within Pocahontas County.

Status: New

Objective: 1S.2: Coordinate with various agencies to ensure that the latest vulnerability data is available so as to effectively prioritize flood mitigation actions.

Project 1S.2.1: Coordinate with FEMA to maintain an updated list of repetitive loss properties throughout Pocahontas County and the municipalities therein.

Status: New

Project 1S.2.2: Input repetitive loss properties into a GIS database for use in future mitigation activities.

Status: New

Project 1S.2.3: As funds become available, undertake buyout and/or elevation projects to lessen the number of repetitive loss properties. This project also includes non-RL properties. As part of this process, hold a series of public meetings with property owners to identify specific project areas and to gauge interest in project participation.

Status: New

Objective 1S.3: Coordinate with higher levels of government regarding potential flood mitigation activities.

Project 1S.3.1: Coordinate with the WVDOH to repair or install culverts in an effort to alleviate water backup onto roads during high-volume rain incidents.

Status: New

Goal 2S: Lessen the negative effects of a drought.

Objective 2S.1: Provide water to countywide citizenry by providing a portable bulk water storage tanker that can be taken to locations where water shortage is the greatest. Make certain that backup water resources for municipalities are working.

Project 2S.1.1: Develop a portable bulk water system that can be moved where it is needed during severe drought conditions.

Status: New

Project 2S.1.2: Coordinate with local fire departments to haul water upon request to county residents and facilities.

Status: New

Goal 3S: Lessen losses from wind (and tornado) events.

Objective 3S.1: Coordinate with the NWS to prepare for severe wind or tornado conditions.

Project 3S.1.1: Promote the NWS "Storm Ready" program.

Status: New

Goal 4S: Lessen the potential damage from wildfires and/or large structure fires.

Objective 4S.1: Undertake a variety of projects aimed at improving fire protection throughout the county.

Project 4S.1.1: Determine suitable locations for and consider the installation of dry hydrants throughout the county.

Status: New

Goal 5S: Lessen opportunities for land subsidence to cause problems.

Objective 5S.1: Coordinate with partner agencies to mitigate land subsidence.

Project 5S.1.1: Work with the WV Division of Forestry to coordinate efforts to promote re-seeding after extraction occurs in the timber industry.

Status: New

Goal 6S: Lessen inconveniences due to winter storm events.

Objective: 6S.1: Ensure continued access to critical facilities and other community assets during winter storms.

Project 6S.1.1: Coordinate with the WVDOH and/or private contractors to ensure that snow can be quickly cleared from major thoroughfares.

Status: New

Goal 7S: Protect populations against hazardous material incidents.

Objective: 7S.1: Make the public aware of hazardous materials, what to do during a spill, and of evacuation plans throughout Pocahontas County. Continue to support training for first responders.

Project 7S.1.1: Coordinate with local officials and organizations filing Tier II reports to produce more detailed plans regarding spills and public protective measures.

Status: New

Goal 8S: Protect potentially-affected populations from domestic and/or international terrorist threats (to include the implementation of protective measures).

Objective 8S.1: Identify potential targets and coordinate with appropriate officials as to readiness.

Project 8S.1.1: Compile a list of potential targets for international terrorism throughout Pocahontas County. This list should include not only sites, but also scenarios. Further, the list should be kept secure.

Status: New

Project 8S.1.2: Coordinate with local law enforcement providers (and potentially representatives from community assets) to monitor for suspicious persons or groups throughout the county.

Status: New

Goal 9S: Limit, to the extent possible, damages caused by miscellaneous hazards.

Objective 9S.1: Undertake aggressive planning projects to ensure that appropriate organizations within the county can respond to a widespread communications failure.

Project 9S.1.1: Develop an alternate communications plan that utilizes local fire departments and their ability to communicate by radio should telephone service be interrupted.

Status: New

Project 9S.1.2: Coordinate with Frontier Communications as they update their emergency planning to ensure common expectations between the company and local resources during emergency incidents.

Status: New

Objective 9S.2: Identify potential hazards in existing public utility systems.

Project 9S.2.1: Inventory residences and businesses throughout the county utilizing propane for heating. Explain the potential for propane leaks and/or explosions and educate residents/business owners on how to safeguard their assets from damage.

Status: New

Objective 9S.3: Gauge the risk for mass casualty incidents in Pocahontas County.

Project 9S.3.1: Compile a general list of the types of incidents that could occur in Pocahontas County and result in mass casualties.

Status: New

Objective 9S.4: Create displays for use at public events (e.g. health fairs, civic meetings, festivals, etc.).

Project 9S.4.1: Enlist local civic organizations to assist in the creation of emergency preparedness displays for use at libraries, during festivals or other gatherings, civic group meetings, etc. Examples include the following.

- Basic hazard awareness
- Animals in disaster
- Business continuity planning
- Children's safety
- Hazard information targeting tourists

Status: New

Project 9S.4.2: Update and maintain a call list to alert business owners and critical facilities of potential threats so that appropriate preventive actions can be taken.

Status: New

Project 9S.4.3: Send pre-canned news releases to media outlets for more rapid dissemination during emergency incidents. Include enough media outlets to ensure coverage of the majority of the county.

Status: New

Project 9S.4.4: Coordinate with the Pocahontas Times, Allegheny Mountain Radio, and other county organizations with Internet websites to include links to such emergency sources as the NWS (for information about rain and river gauges and weather warnings), etc.

Status: New

Objective 9S.5: Plan for emergency incidents, thereby increasing preparedness.

Project 9S.5.1: Review and update the *Pocahontas County Emergency Operations Plan* and include participation from municipalities in the planning process.

Status: New

Project 9S.5.2: Encourage municipalities to either adopt the county emergency operations plan or develop their own plan that is fully consistent with the county plan.

Status: New

Objective 9S.6: Coordinate with a variety of agencies regarding potential mitigation activities.

Project 9S.6.1: Encourage local shipping companies and critical facilities to develop "critical supply transportation plans" to ensure that the necessary supplies and/or materials they need to operate can be delivered during emergency incidents.

Status: New

Objective 9S.7: Coordinate with appropriate agencies to continue protection of the population during the recovery and post-incident phases of an emergency response.

Project 9S.7.1: Coordinate with the American Red Cross to determine suitable shelter sites and create agreements for the use of those facilities during emergencies.

Status: New

Project 9S.7.2: Coordinate with the American Red Cross, WV Division of Homeland Security and Emergency Management (WVDHSEM), US Department of Homeland Security (USDHS), etc. to discuss post-incident relocation and recovery.

Status: New

QUINWOOD, TOWN OF

Goal 1T: Reduce the effects of man-made hazards in Quinwood.

Objective: 1T.1: Ensure that residents, business owners, etc. are aware of how to respond during certain man-made incidents.

Project 1T.1.1: Develop and distribute information to the town's critical facilities describing the proper policies and procedures to be conducted in the event of a bomb threat.

Status: New

RAINELLE, TOWN OF

Goal 1U: Lessen the negative effects of droughts that may affect Rainelle.

Objective: 1U.1: Decrease the effects of drought.

Project 1U.1.1: Identify and maintain backup water supplies to make water available to citizens.

Status: New

RENICK, TOWN OF

Goal 1V: Lessen the negative effects of wildfires that may affect Renick.

Objective 1V.1: Continue to educate the public on measures to take to avoid starting wildfires and awareness of fire season.

Project 1V.1.1: Distribute an informational brochure including information on the burning ban and the leading causes of wildfires, as well as steps the general public can take to avoid starting wildfire.

Status: New

RICHWOOD, TOWN OF

Goal 1W: Mitigate the negative effects of hazards in Richwood.

Objective 1W.1: Direct new development away from known high-hazard areas.

Project 1W.1.1: Continue to review all community and economic development plans to ensure that designated growth areas are not in hazard areas. If they are, build mitigation measures into plans.

Status: New

RONCEVERTE, CITY OF

Goal 1X: Reduce the negative effects flooding in Ronceverte.

Objective: 1X.1: Provide uninterrupted water and wastewater service to customers during and after a flooding incident.

Project 1X.1.1: Design and construct an inter-connect between Lewisburg and Ronceverte to help provide water if one plant is shut down due to contamination/damages from flooding.

Status: New

RUPERT, TOWN OF

Goal 1Y: Reduce the negative effects of flooding in Rupert.

Objective 1Y.1: Remove at-risk structures (both RL and non-RL) from Rupert's floodways and floodplains.

Project 1Y.1.1: Continue to apply for HMGP funds for acquisitions, elevations, or relocations of the three (3) identified repetitive loss properties in Rupert.

Status: New

SMITHERS, CITY OF

Goal 1Z: Reduce the negative effects of flash flooding in Smithers.

Objective: 1Z.1: Improve the drainage system.

Project 1Z.1.1: Identify undersized and inadequate culverts and correct the problem.

Status: New

Goal 2Z: Improve emergency response capability within Smithers.

Objective: 2Z.1: Develop appropriate information from which to plan.

Project 2Z.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Status: New

SUMMERSVILLE, CITY OF

Goal 1AA: Reduce the negative effects of flooding in Summersville.

Objective: 1AA.1: Ensure continued compliance with the NFIP.

Project 1AA.1.1: Continue to train and re-certify the city's Floodplain Coordinator to assist citizens in complying with the floodplain ordinance.

Status: New

THURMOND, TOWN OF

Goal 1AB: Improve emergency response capability within Thurmond.

Objective: 1AB.1: Develop appropriate information from which to plan.

Project 1AB.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Status: New

WEBSTER COUNTY

Goal 1AC: Lessen the effects of flooding.

Objective 1AC.1: Develop a floodplain management program.

Project 1AC.1.1: Institute stricter floodplain enforcement.

Status: New

Project 1AC.1.2: Identify all RL and flood-prone non-RL properties within the county and coordinate with owners who would like to participate in future elevation, buyout, and retrofitting projects.

Status: New

Objective 1AC.2: Develop public information materials to advise the citizens of impending floods.

Project 1AC.2.1: Supply schools, municipal agencies, and other critical facilities with informational products on the meaning of announcements and advice on what actions to take.

Status: New

Objective 1AC.3: Determine how and if a dam failure in neighboring counties would affect Webster County.

Project 1AC.3.1: Coordinate with the SCS to develop a map showing areas that could be affected by a dam failure.

Status: New

Objective: 1AC.4: Participate in the Community Rating System (CRS) to help monitor hazard mitigation efforts and to improve the affordability of flood insurance for citizens.

Project 1AC.4.1: Coordinate county efforts to meet the requirements of becoming a participant in the CRS.

Status: New

Project 1AC.4.2: Coordinate with USDHS/FEMA and the WVDHSEM to complete the flood map modernization project

Status: New

Objective 1AC.5: Remove debris from waterways to prevent future flooding.

Project 1AC.5.1: Clean waterways to prevent water from backing up and possibly flooding certain areas.

Status: New

Goal 2AC: Reduce the negative effects of landslides in Webster County.

Objective 2AC.1: Establish procedures to clean-up materials from landslides quickly, causing minor disruption to traffic.

Project 2AC.1.1: Coordinate with WVDOH implementing a plan of action to take when coordinating clean-up efforts.

Status: New

Goal 3AC: Generally lessen the effects of disasters in Webster County.

Objective 3AC.1: Undertake general mitigation projects to address a variety of hazards.

Project 3AC.1.1: Identify assets within the county for more accurate loss estimates and work with the private sector to make resources available in concert with the LEPC's resource manual.

Status: New

WEBSTER SPRINGS, TOWN OF

Goal 1AD: Reduce the negative effects of flooding in Webster Springs.

Objective 1AD.1: Remove debris from waterways to prevent future flooding.

Project 1AD.1.1: Clean waterways to prevent water from backing up and possibly flooding certain areas.

Status: New

WHITE SULPHUR SPRINGS, CITY OF

Goal 1AE: Protect the population of White Sulphur Springs from hazardous materials incidents along Interstate 64.

Objective 1AE.1: Identify the types and quantities of hazardous materials that are transported through the city.

Project 1AE.1.1: Make the public aware of the hazardous material risk, what they can do if a spill occurs, and stress the importance of evacuation planning.

Status: New

3.2 IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS

§201.6(c)(3)(ii)	[The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

This portion of the plan builds on the strategies list presented in Section 3.1. Whereas Section 3.1 simply lists the mitigation goals, objectives, and strategies, this section analyzes those strategies as projects and discusses how they should be implemented. (*NOTE: “Strategies” are considered mitigation “projects”.) Each strategy is listed along with a timeframe, primary coordinator, support agencies, potential funding source (and cost estimate), and its current status. Strategies are also categorized by six (6) different types of mitigation projects:

1. Prevention,
2. Property protection,
3. Natural resource protection,
4. Structural projects,
5. Emergency services, and
6. Public education and awareness.

It is important to note that the cost estimates are tentative and meant as a starting point for research on project feasibility. More specifically, these cost estimates are only ranges of probable project costs; all figures are approximations. At the time the implementation of any strategy is considered, a full cost estimate should be sought prior to securing funding. The Benefit-Cost Review was emphasized in the prioritization process. Mitigation actions were evaluated by their pros and cons, which are represented as costs and benefits.

Finally, as a navigational note, this section only contains current mitigation projects (organized by jurisdiction). If the status indicator in Section 3.1 classified as project as “Completed”, “Deleted”, or “Deferred”, it will not be listed below (unless the Hazard Mitigation Core Planning Committee chose to re-list the project because of a future benefit). As a result (especially during future updates), the strategy numbers may not run consecutively (e.g., Strategy X.1.5 may follow Strategy X.1.3).

ALDERSON, TOWN OF

Project 1A.1.1: Continue to apply for Hazard Mitigation Grant Program (HMGP) funds for acquisitions, elevations, or relocations of the one (1) identified repetitive loss property in Alderson.

Timeframe:	On-going (contingent upon funding availability)
Cost Estimate (*Funding*):	Approximately $71,300. (HMGP)
Coordinating Agency:	Alderson Floodplain Manager
Support Agencies:	Greenbrier County Floodplain Manager, Greenbrier County Emergency Management Agency (GCEMA)
Mitigation Type:	Structural Projects
Status:	This project is considered when HMGP funds become available.

ANSTED, TOWN OF

Project 1B.1.1: Identify undersized and inadequate culverts and correct the problem.

Timeframe:	On-going
Cost Estimate (*Funding*):	Simply identifying problem areas would require little to no additional funding; fixing problems, though, could require up to and in excess of $1,000,000. (Community Development Block Grant [CDBG])
Coordinating Agency:	Municipal Council
Support Agencies:	Engineering Consultants, Town Employees, Region 4 Planning and Development Council (PDC)
Mitigation Type:	Structural Projects
Status:	Analyses are on-going; smaller projects to correct problems are completed as maintenance projects.

Project 2B.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Timeframe: 5 years
Cost Estimate (*Funding*): This project can be done as a part of regular operations. (N/A)
Coordinating Agency: Municipal Council
Support Agencies: Fayette County Office of Emergency Services (FCOES)
Mitigation Type: Emergency Services
Status: This new project was added as part of this planning cycle.

CAMDEN-ON-GAULEY, TOWN OF

Project 1C.1.1: Identify culverts, storm drains, etc. that frequently back-up, causing flash flooding.

Timeframe: On-going
Cost Estimate (*Funding*): Identification of problem areas should require little to no funding. (N/A)
Coordinating Agency: Town Council
Support Agencies: WV Division of Highways (WVDOH)
Mitigation Type: Prevention
Status: New

COWEN, TOWN OF

Project 1D.1.1: Coordinate with local agencies; the Webster County Office of Emergency Services (WCOES), WVDOH, and the County Commission, and develop a plan of action for the identified landslide prone areas.

Timeframe:	5 years
Cost Estimate (*Funding*):	Up to $10,000 if a contractor is used; little to no additional funding is town and/or agency personnel are used. (Pre-Disaster Mitigation [PDM], Local Funding)
Coordinating Agency:	Town Council
Support Agencies:	Webster County Commission, WCOES, WVDOH
Mitigation Type:	Emergency Services
Status:	This strategy represents an on-going process.

DURBIN, TOWN OF

Project 1E.1.1: Review and update the floodplain ordinance to ensure full compliance with National Flood Insurance Program (NFIP) standards.

Timeframe:	On-going
Cost Estimate (*Funding*):	Reviewing and updating ordinances should not require additional funding; enforcement, however, may require funding. (Local Funding)
Coordinating Agency:	Durbin Floodplain Manager
Support Agencies:	N/A
Mitigation Type:	Prevention
Status:	This project represents an on-going effort of the Durbin Floodplain Manager.

Project 1E.1.2: Educate town council members and residents about the NFIP and its requirements. This project may include the facilitation of public forums to encourage questions regarding the NFIP.

Timeframe: On-going
Cost Estimate (*Funding*): Education should require little to no additional funding based on materials distributed by the Federal Emergency Management Agency (FEMA). (N/A)
Coordinating Agency: Durbin Floodplain Manager
Support Agencies: N/A
Mitigation Type: Public Education and Awareness
Status: This project represents an on-going effort of the Durbin Floodplain Manager.

Project 1E.1.3: Coordinate with appropriate agencies to obtain updated NFIP policy-holder information within Durbin.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination should require little to no additional funding. (N/A)
Coordinating Agency: Durbin Floodplain Manager
Support Agencies: N/A
Mitigation Type: Prevention
Status: This project represents an on-going effort of Floodplain Manager.

Project 1E.2.1: Design and construct a sewage treatment plant out of the floodplain.

Timeframe: 5 years
Cost Estimate (*Funding*): $500,000 to $2,500,000 (CDBG, WV Infrastructure & Jobs Development Council [WVIJDC], United States Department of Agriculture [USDA], HMGP)
Coordinating Agency: Durbin Town Council
Support Agencies: Region 4 PDC
Mitigation Type: Structural Projects
Status: This project is included as a part of a regional project prioritization list and is reviewed annually.

Project 1E.3.1: Coordinate with FEMA to maintain an updated list of repetitive loss properties throughout Durbin.

Timeframe: On-going

Cost Estimate (*Funding*): Coordination should require little to no additional funding. (N/A)

Coordinating Agency: Durbin Floodplain Manager

Support Agencies: Pocahontas County Office of Emergency Management (PCOEM)

Mitigation Type: Prevention

Status: This project was originally completed during Pocahontas County's most recent mitigation planning project. Local officials elected to keep it in the plan to demonstrate the importance of maintaining current information.

Project 2E.1.1: Either adopt the county emergency operations plan or develop a town-specific operations plan that is fully consistent with the county plan.

Timeframe: 5 years

Cost Estimate (*Funding*): Up to $5,000 if a contractor is used. (Emergency Management Performance Grant [EMPG], Homeland Security Grant Program [HSGP], Local Funding)

Coordinating Agency: PCOEM

Support Agencies: Durbin Town Council

Mitigation Type: Emergency Services

Status: This project was added as part of Pocahontas County's most recent mitigation planning project.

FAYETTE COUNTY

Project 1F.1.1: Develop an education program on water conservation and the value of water-saving devices.

Timeframe: 3 years
Cost Estimate (*Funding*): Development of an outreach program should not require significant funding. (N/A)
Coordinating Agency: Public Service Districts (PSDs)
Support Agencies: FCOES
Mitigation Type: Public Education and Awareness
Status: This project was completed during the first hazard mitigation planning cycle. Fayette County officials elected to keep it on the project list because of the positive impact it can continue to have.

Project 1F.1.2: Develop a plan to have "watering points" in those areas of the county not served by public water (so citizens can obtain drinking water during droughts).

Timeframe: On-going
Cost Estimate (*Funding*): No additional funding necessary for planning. (N/A)
Coordinating Agency: FCOES
Support Agencies: PSDs
Mitigation Type: Emergency Services
Status: Fayette County's committee elected to have this project deferred to future planning cycles.

Project 2F.1.1: Promote awareness and enforcement of fire season laws.

Timeframe: On-going
Cost Estimate (*Funding*): Use of existing materials through the state Division of Forestry can cut costs. (N/A)
Coordinating Agency: County Commission
Support Agencies: FCOES, West Virginia Division of Forestry (WVDOF)
Mitigation Type: Public Education and Awareness
Status: This project was completed during the first hazard mitigation planning cycle. Fayette County officials elected to keep it on the project list because of the positive impact it can continue to have.

Project 2F.1.2: Ensure public awareness of fire prevention practices, like safe clearing distance and debris maintenance for homes in wooded areas.

Timeframe: On-going
Cost Estimate (*Funding*): Use of existing materials through the state Division of Forestry can cut costs. (N/A)
Coordinating Agency: County Commission
Support Agencies: FCOES, WVDOF
Mitigation Type: Public Education and Awareness
Status: This project was completed during the first hazard mitigation planning cycle. Fayette County officials elected to keep it on the project list because of the positive impact it can continue to have.

Project 3F.1.1: Develop a countywide storm water/drainage plan.

Timeframe: 5 years
Cost Estimate (*Funding*): $1,500 to $8,000 (CDBG, West Virginia Disaster Recovery Board)
Coordinating Agency: County Commission
Support Agencies: Municipal Councils
Mitigation Type: Property Protection
Status: The Wolf Creek plan was completed in September, 2003, and can serve as a model for the completion of other plans.

Project 3F.1.2: Enforce the floodplain ordinance for all new construction.

Timeframe:	In place, on-going
Cost Estimate (*Funding*):	Administrative costs may be associated with code enforcement, but should be a part of existing budget items. (Local Funds)
Coordinating Agency:	County Commission
Support Agencies:	Fayette County Floodplain Coordinator
Mitigation Type:	Prevention
Status:	This project was completed during the first hazard mitigation planning cycle. Fayette County officials elected to keep it on the project list because of the positive impact it can continue to have.

Project 3F.1.3: Work with the WVDOH, WV Division of Natural Resources (WVDNR), WV Department of Environmental Protection (WVDEP), Soil Conservation Services (SCS), etc. to develop a stream restoration, bank stabilization, and maintenance plan.

Timeframe:	5 years
Cost Estimate (*Funding*):	Coordination with these agencies about future steps to take should not require funding. (N/A)
Coordinating Agency:	County Commission
Support Agencies:	Fayette County Floodplain Coordinator, SCS, WVDOH, WVDNR, WVDEP
Mitigation Type:	Natural Resource Protection
Status:	This project was partially completed during the first mitigation planning cycle; Fayette County officials decided to leave it on the list as a way of showing its progress.

Project 3F.2.1: Inform the public about debris programs. Pursue recycling, even if hauled to Raleigh or Kanawha Counties. Coordinate with WVDOH to ensure proper permitting regarding debris removal. Work with the WVDOH to expand its tire amnesty program. Inform the public of appliance pick-up ordinance.

Timeframe: On-going
Cost Estimate (*Funding*): No additional funding necessary; however, code enforcement may require some administrative costs (N/A)
Coordinating Agency: County Commission
Support Agencies: FCOES
Mitigation Type: Public Education and Awareness
Status: This new project was added during this planning cycle.

Project 3F.3.1: Identify undersized and inadequate culverts and correct the problem.

Timeframe: On-going
Cost Estimate (*Funding*): No additional funding necessary (N/A)
Coordinating Agency: County Commission
Support Agencies: Municipal Councils
Mitigation Type: Structural Projects
Status: Analyses are on-going; smaller projects to correct problems are completed as maintenance projects.

Project 3F.3.2: Study wastewater issues related to flooding, storm water, and public health.

Timeframe: On-going
Cost Estimate (*Funding*): $5,000 to $8,000, contingent on the use of consultants. (CDBG, PDM)
Coordinating Agency: Fayette County Health Department
Support Agencies: FCOES
Mitigation Type: Prevention
Status: This project was completed during the first hazard mitigation planning cycle. Fayette County officials elected to keep it on the project list because of the positive impact it can continue to have.

Project 3F.4.1: Continue to buy both repetitive and non-repetitive loss properties in flood prone areas.

Timeframe: On-going
Cost Estimate (*Funding*): Approximately $50,800 per structure. (HMGP, NRCS)
Coordinating Agency: County Commission
Support Agencies: Fayette County Floodplain Coordinator
Mitigation Type: Prevention
Status: This new project was added during this planning cycle.

Project 3F.4.2: Work toward meeting the requirements for participation in the Community Rating System (CRS).

Timeframe: 5 years
Cost Estimate (*Funding*): Planning and other requirements are being met with currently-budgeted funds. (N/A)
Coordinating Agency: FCOES
Support Agencies: Local Government
Mitigation Type: Public Education and Awareness
Status: This project was added during this planning cycle.

Project 3F.4.3: Undertake buy-out projects in the Dunloup Watershed areas (i.e., the Dunloup Watershed Voluntary Buyout Program.

Timeframe: 3 years
Cost Estimate (*Funding*): Up to $50,800 per house purchased – up to 50 properties – i.e., $2,540,000 (HMGP, NRCS)
Coordinating Agency: FCOES
Support Agencies: WVDHSEM, NRCS
Mitigation Type: Prevention
Status: This project was added during this planning cycle. Applications for the program have been received; implementation should begin in 2011 or 2012.

Project 4F.1.1: Ensure enforcement and investigate possibility of enhancing Risk Management Plans (RMPs) for logging, mining and gas operations.

Timeframe:	5 years
Cost Estimate (*Funding*):	Costs will be absorbed by the private sector agencies involved. (N/A)
Coordinating Agency:	County Commission
Support Agencies:	FCOES, West Virginia State Fire Marshal (WVSFM), WVDEP, Private Entities
Mitigation Type:	Emergency Services
Status:	This project was completed during the first hazard mitigation planning cycle. Fayette County officials elected to keep it on the project list because of the positive impact it can continue to have.

Project 4F.1.2: Conduct regular inspection of earthen impoundments with required reporting. Doing so may require coordination with property owners.

Timeframe:	On-going
Cost Estimate (*Funding*):	No additional funding necessary as inspections are already regular budget line items. (N/A)
Coordinating Agency:	WVDEP
Support Agencies:	N/A
Mitigation Type:	Prevention
Status:	This project was completed during the first hazard mitigation planning cycle. Fayette County officials elected to keep it on the project list because of the positive impact it can continue to have.

Project 4F.1.3: Work with the WVDOH to identify and prioritize areas prone to recurring slides. Develop plans to reduce risk and occurrence.

Timeframe:	On-going
Cost Estimate (*Funding*):	$1,000 to $3,000 each, contingent on the use of consultants. (WVDOH, Local Funding)
Coordinating Agency:	County Commission
Support Agencies:	WVDOH
Mitigation Type:	Structural Projects
Status:	This project was completed during the first hazard mitigation planning cycle. Fayette County officials elected to keep it on the project list because of the positive impact it can continue to have.

Project 4F.1.4: Work with the WVDOH to develop Memorandum of Understanding (MOU) with mining companies and contractors to clear impacted roadways.

Timeframe:	On-going
Cost Estimate (*Funding*):	No additional funding would be necessary to develop the MOU. (N/A)
Coordinating Agency:	County Commission (as Fayette Co. Point of Contact [POC] only)
Support Agencies:	WVDOH, Private Entities
Mitigation Type:	Emergency Services
Status:	Fayette County officials elected to defer this project to future planning cycles.

Project 5F.1.1: Reduce the impact to citizens due to power loss during severe storm events by investigating the feasibility of backup power for citizens in a special needs registry.

Timeframe:	Contingent on the completion of a registry.
Cost Estimate (*Funding*):	Unknown. (N/A)
Coordinating Agency:	N/A
Support Agencies:	N/A
Mitigation Type:	Emergency Services
Status:	This project was completed during the first hazard mitigation planning cycle. Fayette County officials elected to keep it on the project list because of the positive impact it can continue to have.

Project 5F.1.2: Reduce the impact of loss of conventional communications by developing a local radio network (Citizen Band [CBs] and amateur radio) and by prompting knowledge and training in this arena. Members can serve as contact points during hazard events.

Timeframe:	On-going
Cost Estimate (*Funding*):	Creation of a list of local resources would require up to $5,000. (HMEP, Local Funding)
Coordinating Agency:	FCOES
Support Agencies:	Local Emergency Planning Committee (LEPC)
Mitigation Type:	Emergency Services
Status:	Fayette County officials elected to defer this project to future planning cycles and concurrently monitor the development of the West Virginia Interoperable Radio Project (WVIRP).

Project 6F.1.1: Support the LEPC in the development of a commodity flow plan.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $7,000. (Hazardous Materials Emergency Planning [HMEP])
Coordinating Agency: LEPC
Support Agencies: FCOES
Mitigation Type: Emergency Services
Status: Fayette County officials elected to defer this project to future planning cycles.

Project 6F.1.2: Increase oversight of hazardous chemicals within used and stored in Fayette County.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination with other agencies should require little to no additional funding. (N/A)
Coordinating Agency: LEPC
Support Agencies: FCOES, WV Division of Homeland Security and Emergency Management (WVDHSEM)
Mitigation Type: Emergency Services
Status: Fayette County officials elected to defer this project to future planning cycles and agreed to coordinate with the West Virginia State Emergency Response Commission (SERC) on this issue.

Project 6F.1.3: Enhance public awareness.

Timeframe: On-going
Cost Estimate (*Funding*): Up to $2,500 for the production of materials and purchase of ad space. (PDM, HMEP, EMPG, Local Funding)
Coordinating Agency: FCOES
Support Agencies: LEPC
Mitigation Type: Public Education and Awareness
Status: This project was completed during the first hazard mitigation planning cycle. Fayette County officials elected to keep it on the project list because of the positive impact it can continue to have.

Project 7F.1.1: Develop early warning and alert system.

Timeframe: On-going
Cost Estimate (*Funding*): Up to $100,000. (HSGP)
Coordinating Agency: FCOES
Support Agencies: LEPC
Mitigation Type: Emergency Services
Status: This project was not completed per funding availability.

Project 7F.1.2: Develop a special needs registry for home bound/non-ambulatory and citizens with special physical or medical needs. Entry on registry ensures check in during hazards and special attention.

Timeframe: 5 years
Cost Estimate (*Funding*): Unknown. (N/A)
Coordinating Agency: FCOES
Support Agencies: WVDHSEM, WV 2-1-1
Mitigation Type: Emergency Services
Status: Fayette County officials elected to defer this project to future planning cycles and coordinate with such agencies as West Virginia 2-1-1 regarding statewide registry initiatives.

Project 7F.1.3: Develop a more in-depth county asset list to better understand the value of structures within the county.

Timeframe: 5 years
Cost Estimate (*Funding*): This project can be done as a part of regular operations. (N/A)
Coordinating Agency: County Commission
Support Agencies: FCOES
Mitigation Type: Emergency Services
Status: This new project was added as part of this planning cycle.

FAYETTEVILLE, TOWN OF

Project 1G.1.1: Identify undersized and inadequate culverts and correct the problem.

Timeframe:	On-going
Cost Estimate (*Funding*):	Simply identifying problem areas would require little to no additional funding; fixing problems, though, could require up to and in excess of $1,000,000. (CDBG)
Coordinating Agency:	Municipal Council
Support Agencies:	Engineering Consultants, Town Employees, Region 4 PDC
Mitigation Type:	Structural Projects
Status:	Analyses are on-going; smaller projects to correct problems are completed as maintenance projects.

Project 2G.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Timeframe:	5 years
Cost Estimate (*Funding*):	This project can be done as a part of regular operations. (N/A)
Coordinating Agency:	Municipal Council
Support Agencies:	FCOES
Mitigation Type:	Emergency Services
Status:	This new project was added as part of this planning cycle.

GAULEY BRIDGE, TOWN OF

Project 1H.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Timeframe: 5 years
Cost Estimate (*Funding*): This project can be done as a part of regular operations. (N/A)
Coordinating Agency: Municipal Council
Support Agencies: FCOES
Mitigation Type: Emergency Services
Status: This new project was added as part of this planning cycle.

GREENBRIER COUNTY

Project 1I.1.1: Continue to work with the WVDOH to design road construction to be at the 100-year base flood elevation or higher.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $5,000,000 per project. (WVDOH)
Coordinating Agency: WVDOH, Local Division
Support Agencies: WVDOH
Mitigation Type: Structural Projects
Status: This project

Project 1I.2.1: Maintain a database of all at risk structures in floodways and floodplains and distribute information to homeowners and business on the importance of purchasing flood insurance and flood-proofing techniques to protect their homes and business.

Timeframe: 2 years
Cost Estimate (*Funding*): The creation of a database should not require significant additional funding. (N/A)
Coordinating Agency: Greenbrier County Floodplain Manager
Support Agencies: Municipal Public Works Departments, GCEMA
Mitigation Type: Prevention
Status: This is an on-going initiative to determine hazard areas in county.

Project 1I.2.2: Establish an on-going program of mitigation training for public officials and private business as well as the citizens of Greenbrier County.

Timeframe: On-going
Cost Estimate (*Funding*): By using materials that are already available from such sources as FEMA, this project should require little to no additional funding. (N/A)
Coordinating Agency: Greenbrier County Floodplain Manager
Support Agencies: Municipal Floodplain Managers, GCEMA
Mitigation Type: Public Education and Awareness
Status: This project is an on-going effort coordinated by the GCEMA and county floodplain coordinator.

Project 1I.2.3: Continue to make informational pamphlets available to Greenbrier County citizens that promote buying flood insurance.

Timeframe: On-going
Cost Estimate (*Funding*): This project should require no additional funding based on the use of existing materials. (N/A)
Coordinating Agency: Greenbrier County Floodplain Manager
Support Agencies: N/A
Mitigation Type: Prevention
Status: This project is an on-going effort coordinated by the floodplain manager.

Project 1I.3.1: Continue to make permitting necessary (that is consistent with local floodplain ordinances) before any new construction is allowed.

Timeframe: On-going
Cost Estimate (*Funding*): This project is already budgeted. (N/A)
Coordinating Agency: Greenbrier County Floodplain Manager
Support Agencies: Greenbrier County Commission
Mitigation Type: Prevention
Status: This project represents an existing, on-going partnership between the floodplain manager, commission, & other county departments.

Project 1I.4.1: Determine feasibility of floodwalls or other structures to protect water treatment facilities from flooding.

Timeframe: 5 years
Cost Estimate (*Funding*): Approximately $1,000 to $50,000 (HMGP, US Army Corps of Engineers [USACE], CDBG, Local Funding)
Coordinating Agency: Municipal Public Works Departments, PSDs
Support Agencies: Municipal Councils, County Commission, Region 4 PDC
Mitigation Type: Structural Projects
Status: This project was added as a part of Greenbrier County's most recent mitigation plan update.

Project 1I.4.2: Determine feasibility of floodwalls or other structures to protect wastewater treatment facilities from flooding.

Timeframe: 5 years
Cost Estimate (*Funding*): Approximately $1,000 to $50,000 (HMGP, USACE, CDBG, Local Funding)
Coordinating Agency: Municipal Public Works Departments, PSDs
Support Agencies: Municipal Councils, County Commission, Region 4 PDC
Mitigation Type: Structural Projects
Status: This project was added as a part of Greenbrier County's most recent mitigation plan update.

Project 1I.5.1: Provide opportunities for the leaders in Greenbrier County to participate in FEMA (and/or other agency) proactive programs.

Timeframe: On-going
Cost Estimate (*Funding*): As an on-going effort, this project should not require significant additional funding. (N/A)
Coordinating Agency: Greenbrier County Floodplain Manager
Support Agencies: GCEMA
Mitigation Type: Public Education and Awareness
Status: This project represents an on-going effort within the floodplain manager's office.

Project 1I.6.1: Continue to apply for HMGP funds for acquisitions, elevations, or relocations of identified at risk, repetitive loss, non-repetitive loss, or substantial damaged properties in Greenbrier County.

Timeframe: 5 years (contingent on availability of funding)
Cost Estimate (*Funding*): Approximately $71,300 per purchase. (HMGP)
Coordinating Agency: Greenbrier County Floodplain Manager
Support Agencies: Greenbrier County Commission, GCEMA
Mitigation Type: Prevention
Status: This project is considered when funding becomes available.

Project 2I.1.1: Continue to enhance and upgrade current snow removal capabilities throughout the county.

Timeframe: On-going
Cost Estimate (*Funding*): Up to $50,000 per equipment purchase. (Local Funding)
Coordinating Agency: Greenbrier County Commission
Support Agencies: County Maintenance Personnel
Mitigation Type: Emergency Services
Status: This project was added as part of Greenbrier County's most recent mitigation planning project.

Project 2I.1.2: Develop and implement programs to coordinate maintenance and mitigation activities to reduce risk to public infrastructure from severe storms.

Timeframe: On-going
Cost Estimate (*Funding*): Development of programs should require little to no additional funding. (N/A)
Coordinating Agency: Greenbrier County Commission
Support Agencies: County Maintenance Personnel, PSDs, GCEMA
Mitigation Type: Prevention
Status: This project was added as part of Greenbrier County's most recent mitigation planning project.

Project 2I.1.3: Develop and implement programs to keep trees from threatening lives, property, and public infrastructure during severe storm events.

Timeframe: 5 years
Cost Estimate (*Funding*): Implementation of a program managed as part of existing maintenance efforts should require little to no additional funding. (N/A)
Coordinating Agency: Greenbrier County Commission
Support Agencies: County Maintenance Personnel
Mitigation Type: Prevention
Status: This project was added as part of Greenbrier County's most recent mitigation planning project.

Project 2I.2.1: Increase public awareness of the severe storm mitigation activities that they can undertake.

Timeframe: On-going
Cost Estimate (*Funding*): Up to $2,500 for the production and development of materials. (PDM, EMPG, SERC, Local Funding)
Coordinating Agency: GCEMA
Support Agencies: Greenbrier County LEPC
Mitigation Type: Public Education and Awareness
Status: This project represents an on-going effort of the GCEMA.

Project 2I.2.2: Enhance weather monitoring to attain earlier severe storm warnings.

Timeframe: On-going

Cost Estimate (*Funding*): This project should require little to no funding based on existing capabilities. (N/A)

Coordinating Agency: GCEMA

Support Agencies: National Weather Service (NWS)

Mitigation Type: Public Education and Awareness

Status: Greenbrier County officials elected to include this project to building consistency between this and other preparedness efforts. It represents an on-going effort.

Project 2I.2.3: Map and publicize locations around the county that have the highest incidences of extreme storms.

Timeframe: On-going

Cost Estimate (*Funding*): This project should require little to no additional funding based on materials developed as part of this project. (N/A)

Coordinating Agency: GCEMA, Greenbrier County Planning

Support Agencies: Greenbrier County LEPC

Mitigation Type: Public Education and Awareness

Status: This project was added as part of Greenbrier County's most recent mitigation planning project. It represents an on-going cooperation between the GCEMA and Greenbrier County Planning.

Project 2I.2.4: Encourage/recommend electrical utilities to use underground construction methods where possible to reduce power outages from severe storms.

Timeframe: On-going

Cost Estimate (*Funding*): Coordination with utilities should require little to no additional funding. (N/A)

Coordinating Agency: GCEMA

Support Agencies: Utility Companies

Mitigation Type: Prevention

Status: This project is an on-going cooperative effort between local emergency officials and utility providers. It is considered as utility upgrades are planned and implemented.

Project 2I.2.5: Encourage/recommend improved building materials and techniques when rebuilding damaged property.

Timeframe: On-going

Cost Estimate (*Funding*): Encouraging such materials and techniques should require little to no additional funding. (N/A)

Coordinating Agency: Greenbrier County Commission

Support Agencies: Greenbrier County Planning, Region 4 PDC

Mitigation Type: Prevention

Status: This project was added as part of Greenbrier County's most recent mitigation planning project.

Project 3I.1.1: Support the development of and funding for an early warning mass notification system.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $50,000 to initially implement. (HSGP, EMPG, Local Funding)
Coordinating Agency: GCEMA
Support Agencies: Greenbrier County Commission, WVDMAPS, WVDHSEM
Mitigation Type: Emergency Services
Status: This project is planned as a part of Greenbrier County's on-going homeland security strategy. It was added in an effort to coordinate mitigation efforts with other preparedness efforts.

Project 3I.1.2: Continue to coordinate with Blacksburg NWS office on a daily basis to improve readiness for imminent severe weather.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination requires little to no funding. (N/A)
Coordinating Agency: GCEMA
Support Agencies: NWS
Mitigation Type: Public Education and Awareness
Status: This project represents an on-going effort of the GCEMA.

Project 3I.1.3: Coordinate any warning system with the Greenbrier County Board of Education to enhance protection of students and faculty under threat of severe weather.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $5,000 for the purchase of a unique system; little to no additional funding under the NOAA radio program. (Local Funding)
Coordinating Agency: GCEMA
Support Agencies: Greenbrier County Board of Education
Mitigation Type: Public Education and Awareness
Status: This project was added as part of Greenbrier County's most recent mitigation planning project.

Project 4I.1.1: Publicize the location of karst geologic formations along with the hazards associated with it.

Timeframe: On-going

Cost Estimate (*Funding*): This project requires no additional funding based on existing efforts by Greenbrier County Planning. (N/A)

Coordinating Agency: Greenbrier County Planning

Support Agencies: GCEMA

Mitigation Type: Public Education and Awareness

Status: Greenbrier County Planning already publicizes the presence of karst formations in its comprehensive plan. This project was added to reiterate the importance of that information sharing.

Project 5I.1.1: Continue to monitor identified areas in Greenbrier County that have limestone deposits or underground mining that may create sink holes. Update Geographic Information System (GIS) databases as necessary.

Timeframe: On-going

Cost Estimate (*Funding*): This project requires no additional funding based on existing efforts by Greenbrier County Planning, the GCEMA, and the county assessor. (N/A)

Coordinating Agency: GCEMA

Support Agencies: Greenbrier County Planning, Greenbrier County Assessor

Mitigation Type: Public Education and Awareness

Status: Greenbrier County Planning already publicizes the presence of karst formations in its comprehensive plan. This project encourages an extension of those efforts.

Project 6I.1.1: Implement a water study and analyze the data to better help citizens during periods of drought.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $50,000 if a contractor is used. (CDBG, PDM, Local Funding)
Coordinating Agency: Greenbrier County Planning
Support Agencies: GCEMA, Region 4 PDC
Mitigation Type: Natural Resource Protection
Status: This project was added as part of Greenbrier County's most recent mitigation planning project.

Project 6I.1.2: Identify and maintain backup water supplies for citizens.

Timeframe: On-going
Cost Estimate (*Funding*): Identification of supplies should require little to no additional funding. (N/A)
Coordinating Agency: PSDs
Support Agencies: GCEMA
Mitigation Type: Prevention
Status: This project is an on-going effort; local officials elected to keep this project on the list in an effort to integrate mitigation efforts with other preparedness efforts.

Project 7I.1.1: Coordinate with the power company to clear trees and other debris from electric lines throughout the county.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination with utilities should require little to no additional funding. (N/A)
Coordinating Agency: GCEMA
Support Agencies: American Electric Power (AEP)
Mitigation Type: Prevention
Status: This project is an on-going cooperative effort between local emergency officials and utility providers. It is considered as utility upgrades are planned and implemented.

Project 7I.1.2: Develop a database of special needs populations which require electric power for life support equipment.

Timeframe: 5 years
Cost Estimate (*Funding*): Development of a database should require little to no additional funding. (N/A)
Coordinating Agency: GCEMA
Support Agencies: Greenbrier County Assessor, PSDs, Municipal Public Works
Mitigation Type: Emergency Services
Status: This project was added as part of Greenbrier County's most recent mitigation planning project.

Project 7I.2.1: Install repeaters, retro-fit generators at tower sites, and continue to work with amateur radio operators.

Timeframe: On-going
Cost Estimate (*Funding*): Up to $50,000 depending on the size of the generator that is purchased. (HSGP, Local Funding)
Coordinating Agency: GCEMA
Support Agencies: N/A
Mitigation Type: Emergency Services
Status: This project represents an on-going effort to strengthen communications capabilities throughout the county.

Project 7I.3.1: Have commodity flow studies done to better analyze the types and quantities of materials could be present in the county.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $5,000 if a contractor is used. (HMEP)
Coordinating Agency: Greenbrier County LEPC
Support Agencies: GCEMA
Mitigation Type: Emergency Services
Status: A flow study was recently updated by the LEPC; Greenbrier County officials elected to include this project to demonstrate the importance of periodically updating the study.

Project 7I.3.2: Continue to coordinate with the Regional Response Team and county response team(s) in order to provide a fast and effective response to an incident.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination should require little to no additional funding. (N/A)
Coordinating Agency: GCEMA
Support Agencies: WV State Fire Marshal
Mitigation Type: Emergency Services
Status: This project represents an on-going effort of the GCEMA.

Project7I.4.1: Find a water resource (e.g., dry hydrants) for volunteer fire departments that is strategically located for fast response. Make this resource known to fire departments.

Timeframe: On-going
Cost Estimate (*Funding*): Identifying these resources should require little to no additional funding. (N/A)
Coordinating Agency: Local Volunteer Fire Departments (VFDs)
Support Agencies: GCEMA
Mitigation Type: Emergency Services
Status: This project represents on-going efforts of VFDs to supplement their capabilities and to lower insurance premiums for residents.

Project 7I.5.1: Coordinate with assets in the county to more effectively estimate losses from a disaster.

Timeframe: On-going
Cost Estimate (*Funding*): This project can be integrated into existing planning efforts and should require little to no additional funding. (N/A)
Coordinating Agency: GCEMA
Support Agencies: Critical Facilities
Mitigation Type: Prevention
Status: This project was added as part of Greenbrier County's most recent mitigation planning project.

Project 8I.1.1: Develop a partnership with appropriate parties that are stakeholders in the monitoring and general condition of dams throughout Greenbrier County. Provide technical and manpower support to evaluate the status of these dams and report to the Core Planning Team on a yearly basis.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination should require little to no additional funding. (N/A)
Coordinating Agency: GCEMA
Support Agencies: WVDEP
Mitigation Type: Prevention
Status: This project was added as part of Greenbrier County's most recent mitigation planning project.

HILLSBORO, TOWN OF

Project 1J.1.1: Promote any new construction and/or roof remodeling at the municipal level to be designed to withstand 90 mph winds.

Timeframe: On-going
Cost Estimate (*Funding*): Promotion of the concept can be done as municipal building permits are issued. (N/A)
Coordinating Agency: Hillsboro Town Council
Support Agencies: N/A
Mitigation Type: Prevention
Status: This project was added as part of Pocahontas County's most recent mitigation planning project.

Project 2J.1.1: Either adopt the county emergency operations plan or develop a town-specific operations plan that is fully consistent with the county plan.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $5,000 if a contractor is used. (EMPG, HSGP, Local Funding)
Coordinating Agency: PCOEM
Support Agencies: Hillsboro Town Council
Mitigation Type: Emergency Services
Status: This project was added as part of Pocahontas County's most recent mitigation planning project.

LEWISBURG, CITY OF

Project 1K.1.1: Design and construct an inter-connect between Lewisburg and Ronceverte to help provide water if one plant is shut down due to contamination/damages from flooding.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $500,000 (CDBG, Local Funding)
Coordinating Agency: Lewisburg Public Works
Support Agencies: Ronceverte Public Works, Region 4 PDC
Mitigation Type: Structural Projects
Status: This project is on the regional project prioritization list for CDBG and/or other funds. It is reviewed annually.

Project 2K.1.1: Identify and maintain backup water supplies to make water available to citizens.

Timeframe: On-going
Cost Estimate (*Funding*): Identification of supplies should require little to no additional funding. (N/A)
Coordinating Agency: Lewisburg Public Works
Support Agencies: GCEMA
Mitigation Type: Prevention
Status: This project is an on-going effort; local officials elected to keep this project on the list in an effort to integrate mitigation efforts with other preparedness efforts.

MARLINTON, TOWN OF

Project 1L.1.1: Review and update the floodplain ordinance to ensure full compliance with NFIP standards.

Timeframe: On-going
Cost Estimate (*Funding*): Reviewing and updating ordinances should not require additional funding; enforcement, however, may require funding. (Local Funding)
Coordinating Agency: Marlinton Floodplain Manager
Support Agencies: N/A
Mitigation Type: Prevention
Status: This project represents an on-going effort of the Marlinton Floodplain Manager.

Project 1L.1.2: Educate town council members and residents about the NFIP and its requirements. This project may include the facilitation of public forums to encourage questions regarding the NFIP.

Timeframe: On-going
Cost Estimate (*Funding*): Education should require little to no additional funding based on materials distributed by FEMA. (N/A)
Coordinating Agency: Marlinton Floodplain Manager
Support Agencies: N/A
Mitigation Type: Public Education and Awareness
Status: This project represents an on-going effort of the Marlinton Floodplain Manager.

Project 1L.1.3: Coordinate with appropriate agencies to obtain updated NFIP policy-holder information within Marlinton.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination should require little to no additional funding. (N/A)
Coordinating Agency: Marlinton Floodplain Manager
Support Agencies: N/A
Mitigation Type: Prevention
Status: This project represents an on-going effort of the Marlinton Floodplain Manager.

Project 1L.2.1: Construct flood levees along the Greenbrier River in Marlinton.

Timeframe: 5 years
Cost Estimate (*Funding*): Approximately $1,000,000 (Project has been funded by a match of federal and state funds.)
Coordinating Agency: Marlinton Town Council
Support Agencies: USACE
Mitigation Type: Structural Projects
Status: This project has been in the planning stages for several years and is waiting funding.

Project 1L.3.1: Coordinate with FEMA to maintain an updated list of repetitive loss properties throughout Marlinton.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination should require little to no additional funding. (N/A)
Coordinating Agency: Marlinton Floodplain Manager
Support Agencies: PCOEM
Mitigation Type: Prevention
Status: This project was originally completed during Pocahontas County's most recent mitigation planning project. Local officials elected to keep it in the plan to demonstrate the importance of maintaining current information.

Project 2L.1.1: Either adopt the county emergency operations plan or develop a town-specific operations plan that is fully consistent with the county plan.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $5,000 if a contractor is used. (EMPG, HSGP, Local Funding)
Coordinating Agency: PCOEM
Support Agencies: Marlinton Town Council
Mitigation Type: Emergency Services
Status: This project was added as part of Pocahontas County's most recent mitigation planning project.

MEADOW BRIDGE, TOWN OF

Project 1M.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Timeframe: 5 years
Cost Estimate (*Funding*): This project can be done as a part of regular operations. (N/A)
Coordinating Agency: Municipal Council
Support Agencies: FCOES
Mitigation Type: Emergency Services
Status: This new project was added as part of this planning cycle.

MONTGOMERY, CITY OF

Project 1N.1.1: Identify undersized and inadequate culverts and correct the problem.

Timeframe: On-going

Cost Estimate (*Funding*): Simply identifying problem areas would require little to no additional funding; fixing problems, though, could require up to and in excess of $1,000,000. (CDBG)

Coordinating Agency: Municipal Council

Support Agencies: Engineering Consultants, Town Employees, Region 4 PDC

Mitigation Type: Structural Projects

Status: Analyses are on-going; smaller projects to correct problems are completed as maintenance projects.

Project 2N.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Timeframe: 5 years

Cost Estimate (*Funding*): This project can be done as a part of regular operations. (N/A)

Coordinating Agency: Municipal Council

Support Agencies: FCOES

Mitigation Type: Emergency Services

Status: This new project was added as part of this planning cycle.

MOUNT HOPE, CITY OF

Project 1O.1.1: Identify undersized and inadequate culverts and correct the problem.

Timeframe: On-going

Cost Estimate (*Funding*): Simply identifying problem areas would require little to no additional funding; fixing problems, though, could require up to and in excess of $1,000,000. (CDBG)

Coordinating Agency: Municipal Council

Support Agencies: Engineering Consultants, Town Employees, Region 4 PDC

Mitigation Type: Structural Projects

Status: Analyses are on-going; smaller projects to correct problems are completed as maintenance projects.

Project 2O.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Timeframe: 5 years

Cost Estimate (*Funding*): This project can be done as a part of regular operations. (N/A)

Coordinating Agency: Municipal Council

Support Agencies: FCOES

Mitigation Type: Emergency Services

Status: This new project was added as part of this planning cycle.

NICHOLAS COUNTY

Project 1P.1.1: Purchase and re-distribute the booklet *Getting Ready: A Family Emergency Guide* prepared by the State of West Virginia.

Timeframe: 2 years

Cost Estimate (*Funding*): The state paid to have the booklets printed; distribution would require little to no funding. (N/A)

Coordinating Agency: Nicholas County Office of Emergency Services (NCOES)

Support Agencies: N/A

Mitigation Type: Public Education and Awareness

Status: The NCOES distributes this information as it is provided to the county; Nicholas County officials opted to keep this project on the list to show a commitment to on-going public information.

Project 2P.1.1: Continue to review and update floodplain ordinances to regulate development within the 100-year floodplain. Make sure the public is aware of requirements in the ordinance.

Timeframe: On-going

Cost Estimate (*Funding*): No additional funds would be necessary per existing budget items related to floodplain management. (N/A)

Coordinating Agency: NCOES

Support Agencies: Nicholas County Commission

Mitigation Type: Prevention

Status: The NCOES Director also serves as the floodplain manager for the county; these efforts are a part of that position's description and are on-going.

Project 2P.1.2: Continue to train and re-certify the county Floodplain Coordinator to assist citizens in complying with the floodplain ordinance.

Timeframe: On-going
Cost Estimate (*Funding*): No significant additional funding would be necessary per existing training line items. (N/A)
Coordinating Agency: NCOES
Support Agencies: N/A
Mitigation Type: Public Education and Awareness
Status: This project is completed as training or re-certification opportunities are necessary and/or available.

Project 2P.1.3: Continue to update the GIS data layer of flood maps on the county mapping database to identify floodplain areas of Nicholas County.

Timeframe: On-going
Cost Estimate (*Funding*): The bulk of the initial data generation is complete; standard maintenance would require little to no funding. (N/A)
Coordinating Agency: NCOES
Support Agencies: Nicholas County Assessor
Mitigation Type: Public Education and Awareness
Status: This project is in a "maintenance mode"; the NCOES and assessor coordinator if new information is available.

Project 2P.1.4: Continue working with municipalities to update floodplain ordinances adopted prior to 1987.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination requires little to no additional funding. (N/A)
Coordinating Agency: NCOES
Support Agencies: N/A
Mitigation Type: Prevention
Status: This is an on-going strategy in support of municipal floodplain management efforts.

Project 2P.1.5: Continue training the county and municipal development officials on NFIP requirements.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination requires little to no additional funding. (N/A)
Coordinating Agency: NCOES
Support Agencies: N/A
Mitigation Type: Prevention
Status: This is an on-going strategy in support of municipal floodplain management efforts.

Project 2P.1.6: As funds become available, undertake buyout and/or elevation projects to lessen the number of repetitive loss properties. This project also includes non-RL properties

Timeframe: On-going
Cost Estimate (*Funding*): Coordination requires little to no additional funding. (N/A)
Coordinating Agency: NCOES
Support Agencies: N/A
Mitigation Type: Prevention
Status: This project was added as part of this update.

Project 3P.1.1: Continue to review all comprehensive plans to ensure that designated growth areas are not in hazard areas. If they are, build mitigation measures into development plans.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination requires little to no additional funding. (N/A)
Coordinating Agency: NCOES
Support Agencies: Nicholas County Economic Development, Region 4 PDC
Mitigation Type: Prevention
Status: This is an on-going strategy in support of municipal floodplain management efforts.

Project 3P.1.2: Continue to review all capital improvement plans to ensure that infrastructure improvements are not directed toward hazardous areas. If they are, build mitigation measures into plans.

Timeframe:	On-going
Cost Estimate (*Funding*):	Coordination requires little to no additional funding. (N/A)
Coordinating Agency:	NCOES
Support Agencies:	Nicholas County Economic Development, Region 4 PDC
Mitigation Type:	Prevention
Status:	This is an on-going strategy in support of municipal floodplain management efforts.

Project 4P.1.1: Coordinate with county emergency services personnel to participate in exercises of simulated biological and hazardous material incidents to practice response efforts.

Timeframe:	On-going
Cost Estimate (*Funding*):	Up to $10,000 if a contractor is used. (EMPG, SHSG, HMEP, SERC, Local Funding)
Coordinating Agency:	NCOES
Support Agencies:	Nicholas County LEPC
Mitigation Type:	Emergency Services
Status:	The LEPC is required to sponsor at least one (1) exercise per year.

Project 5P.1.1: Maintain updates to plans that detail specific actions to be taken when weather events such as ice, snow, and flooding, etc. strike. Plans should include who is responsible for such actions.

Timeframe: On-going
Cost Estimate (*Funding*): Up to $5,000 apiece if a contractor is used. (EMPG, SHSG, HMEP, SERC, Local Funding)
Coordinating Agency: NCOES
Support Agencies: Nicholas County LEPC, Emergency Services Providers
Mitigation Type: Emergency Services
Status: Plan maintenance is an on-going initiative coordinated by the NCOES; it was included in this plan to support those other planning efforts through all four (4) phases of emergency management.

OAK HILL, CITY OF

Project 1Q.1.1: Identify undersized and inadequate culverts and correct the problem.

Timeframe: On-going
Cost Estimate (*Funding*): Simply identifying problem areas would require little to no additional funding; fixing problems, though, could require up to and in excess of $1,000,000. (CDBG)
Coordinating Agency: Municipal Council
Support Agencies: Engineering Consultants, Town Employees, Region 4 PDC
Mitigation Type: Structural Projects
Status: Analyses are on-going; smaller projects to correct problems are completed as maintenance projects.

Project 2Q.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Timeframe: 5 years
Cost Estimate (*Funding*): This project can be done as a part of regular operations. (N/A)
Coordinating Agency: Municipal Council
Support Agencies: FCOES
Mitigation Type: Emergency Services
Status: This new project was added as part of this planning cycle.

PAX, TOWN OF

Project 1R.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Timeframe: 5 years
Cost Estimate (*Funding*): This project can be done as a part of regular operations. (N/A)
Coordinating Agency: Municipal Council
Support Agencies: FCOES
Mitigation Type: Emergency Services
Status: This new project was added as part of this planning cycle.

POCAHONTAS COUNTY

Project 1S.1.1: Review and update floodplain ordinances to ensure full compliance with National Flood Insurance Program (NFIP) standards.

Timeframe: On-going

Cost Estimate (*Funding*): Reviewing and updating ordinances should not require additional funding; enforcement, however, may require funding. (Local Funding)

Coordinating Agency: Pocahontas County Floodplain Manager

Support Agencies: Pocahontas County Commission, PCOEM

Mitigation Type: Prevention

Status: This project represents an on-going effort of the Pocahontas County Floodplain Manager.

Project 1S.1.2: Educate local government representatives about the NFIP and its requirements. This project may include the facilitation of public forums to encourage questions regarding the NFIP.

Timeframe: On-going

Cost Estimate (*Funding*): Education should require little to no additional funding based on materials distributed by FEMA. (N/A)

Coordinating Agency: Pocahontas County Floodplain Manager

Support Agencies: Pocahontas County Commission, PCOEM

Mitigation Type: Public Education and Awareness

Status: This project represents an on-going effort of the Pocahontas County Floodplain Manager.

Project 1S.1.3: Coordinate with appropriate agencies to obtain updated NFIP policy-holder information within Pocahontas County.

Timeframe: On-going

Cost Estimate (*Funding*): Coordination should require little to no additional funding. (N/A)

Coordinating Agency: Pocahontas County Floodplain Manager

Support Agencies: Pocahontas County Commission, PCOEM

Mitigation Type: Prevention

Status: This project represents an on-going effort of the Pocahontas County Floodplain Manager.

Project 1S.2.1: Coordinate with FEMA to maintain an updated list of repetitive loss properties throughout Pocahontas County and the municipalities therein.

Timeframe: On-going

Cost Estimate (*Funding*): Coordination should require little to no additional funding. (N/A)

Coordinating Agency: Pocahontas County Floodplain Manager

Support Agencies: PCOEM

Mitigation Type: Prevention

Status: This project was originally completed during Pocahontas County's most recent mitigation planning project. Local officials elected to keep it in the plan to demonstrate the importance of maintaining current information.

Project 1S.2.2: Input repetitive loss properties into a GIS database for use in future mitigation activities.

Timeframe: On-going

Cost Estimate (*Funding*): This project was originally developed as part of the county's most recent mitigation planning project; as such it should not require significant additional funding. (N/A)

Coordinating Agency: PCOEM

Support Agencies: WVDHSEM, FEMA

Mitigation Type: Prevention

Status: This project was originally developed as part of the county's most recent mitigation planning project; Pocahontas County officials elected to include it to demonstrate the importance of maintaining current information.

Project 1S.2.3: As funds become available, undertake buyout and/or elevation projects to lessen the number of repetitive loss properties. This project also includes non-RL properties. As part of this process, hold a series of public meetings with property owners to identify specific project areas and to gauge interest in project participation.

Timeframe: 5 years (contingent on availability of funding)

Cost Estimate (*Funding*): Approximately $64,000 per purchase. (HMGP)

Coordinating Agency: Pocahontas County Floodplain Manager

Support Agencies: Pocahontas County Commission, PCOEM

Mitigation Type: Prevention

Status: This project is considered at times when mitigation funding is available.

Project 1S.3.1: Coordinate with the WVDOH to repair or install culverts in an effort to alleviate water backup onto roads during high-volume rain incidents.

Timeframe: On-going

Cost Estimate (*Funding*): Coordination requires little to no additional funding (N/A)

Coordinating Agency: PCOEM

Support Agencies: Municipal Town Councils

Mitigation Type: Emergency Services

Status: This project represents an on-going coordinating effort between local emergency personnel and the WVDOH.

Project 2S.1.1: Develop a portable bulk water system that can be moved where it is needed during severe drought conditions.

Timeframe: 5 years

Cost Estimate (*Funding*): This project could be accomplished through coordination with the WVDOH and/or local fire departments, which would require little to no additional funding. Further, residents ordering water from the bulk system could be invoiced for the water taken, thus offsetting operational costs. (N/A)

Coordinating Agency: PCOEM

Support Agencies: WVDOH

Mitigation Type: Emergency Services

Status: This project was added as part of Pocahontas County's most recent mitigation planning project.

Project 2S.1.2: Coordinate with local fire departments to haul water upon request to county residents and facilities.

Timeframe: On-Going

Cost Estimate (*Funding*): Fire departments could charge those receiving the water to offset the costs of purchasing the water and other expenses. As such, no public funding is required to implement this strategy. (N/A)

Coordinating Agency: PCOEM

Support Agencies: Local VFDs

Mitigation Type: Emergency Services

Status: This project has been completed in the past; Pocahontas County officials elected to re-list it since there is a regular need to update agreements.

Project 3S.1.1: Promote the NWS "Storm Ready" program.

Timeframe: 5 years

Cost Estimate (*Funding*): The PCOEM can work to achieve the criteria necessary for a "Storm Ready" designation. Costs may be reimbursable. (NWS)

Coordinating Agency: PCOEM

Support Agencies: Pocahontas County Commission, NWS

Mitigation Type: Prevention

Status: Local officials have diligently worked to complete the requirements of being certified "storm ready"; these efforts are on-going.

Project 4S.1.1: Determine suitable locations for and consider the installation of dry hydrants throughout the county.

Timeframe: On-going

Cost Estimate (*Funding*): Up to $750 per hydrant (US Forest Service)

Coordinating Agency: PCOEM

Support Agencies: Local VFDs

Mitigation Type: Emergency Services

Status: This project represents an on-going effort by emergency personnel to determine suitable back-up and supplemental capabilities.

Project 5S.1.1: Work with the WV Division of Forestry to coordinate efforts to promote re-seeding after extraction occurs in the timber industry.

Timeframe: On-going

Cost Estimate (*Funding*): Coordination should not require additional funding; if new regulations are developed, then enforcement may require funding. (WVDOF)

Coordinating Agency: Pocahontas County Commission

Support Agencies: WV Division of Forestry

Mitigation Type: Prevention

Status: This project represents an on-going effort to coordinate with a variety of preparedness partners.

Project 6S.1.1: Coordinate with the WVDOH and/or private contractors to ensure that snow can be quickly cleared from major thoroughfares.

Timeframe: On-going

Cost Estimate (*Funding*): Coordination with the WVDOH should not require additional funding. (N/A)

Coordinating Agency: PCOEM

Support Agencies: WVDOH

Mitigation Type: Emergency Services

Status: This project is completed on a regular basis; Pocahontas County officials elected to re-list it because of the probability of the winter weather hazard.

Project 7S.1.1: Coordinate with local officials and representatives from organizations filing Tier II reports to produce more detailed plans regarding spills and public protective measures.

Timeframe: 5 years
Cost Estimate (*Funding*): The Pocahontas County LEPC may provide technical assistance, which may be a source of revenue for the LEPC. (N/A)
Coordinating Agency: Local VFDs
Support Agencies: Pocahontas County LEPC
Mitigation Type: Emergency Services
Status: This project is completed on an annual basis as Tier II reports are filed; it was re-listed because of the likelihood that these facilities would change.

Project 8S.1.1: Compile a list of potential targets for international terrorism throughout Pocahontas County. This list should include not only sites, but also scenarios. Further, the list should be kept secure.

Timeframe: On-going
Cost Estimate (*Funding*): Compilation of a list will not require additional funding. (N/A)
Coordinating Agency: PCOEM
Support Agencies: Pocahontas County LEPC
Mitigation Type: Emergency Services
Status: This project has been completed. It was re-listed to encourage local emergency personnel to continue these efforts based on new facilities, changing threats, etc.

Project 8S.1.2: Coordinate with local law enforcement providers (and potentially representatives from community assets) to monitor for suspicious persons or groups throughout the county.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination will not require additional funding. (N/A)
Coordinating Agency: Pocahontas County Sheriff
Support Agencies: PCOEM, Municipal Police Departments, WV State Police (WVSP)
Mitigation Type: Emergency Services
Status: This project has been completed. It was re-listed to encourage local emergency personnel to continue these efforts based on new facilities, changing threats, etc.

Project 9S.1.1: Develop an alternate communications plan that utilizes local fire departments and their ability to communicate by radio should telephone service be interrupted.

Timeframe: On-going
Cost Estimate (*Funding*): Planning by coordination among principle agencies should require little to no additional funding. (N/A)
Coordinating Agency: Frontier Communications
Support Agencies: Local VFDs, Pocahontas County 911, PCOEM
Mitigation Type: Emergency Services
Status: This project has been completed. It was re-listed to encourage local emergency personnel to continue these efforts based on new capabilities and technologies.

Project 9S.1.2: Coordinate with Frontier Communications as they update their emergency planning to ensure common expectations between the company and local resources during emergency incidents.

Timeframe: On-going

Cost Estimate (*Funding*): Frontier representatives indicate that planning is an on-going endeavor accomplished with their own operating funds; as such, no other local funding would be necessary. (N/A)

Coordinating Agency: Frontier Communications

Support Agencies: PCOEM

Mitigation Type: Emergency Services

Status: This project represents an effort by Frontier and local officials to continue frequent coordination.

Project 9S.2.1: Inventory residences and businesses throughout the county utilizing propane for heating. Explain the potential for propane leaks and/or explosions and educate residents/business owners on how to safeguard their assets from damage.

Timeframe: On-going

Cost Estimate (*Funding*): Compiling the inventory can be done as time allows and as emergency managers travel throughout the county; as such, no significant additional funding should be necessary. (N/A)

Coordinating Agency: PCOEM

Support Agencies: Pocahontas County LEPC

Mitigation Type: Public Education and Awareness

Status: This project is done on a regular basis by the PCOEM; it was re-listed to demonstrate its importance and because of the likelihood of new residences, etc.

Project 9S.3.1: Compile a general list of the types of incidents that could occur in Pocahontas County and result in mass casualties.

Timeframe: 1 year
Cost Estimate (*Funding*): A general list is included in the risk assessment portion of this document; consequently, no additional funds will be required. (N/A)
Coordinating Agency: Pocahontas Memorial Hospital
Support Agencies: PCOEM, Local VFDs
Mitigation Type: Emergency Services
Status: This project is completed as a part of periodic planning updates. It represents an on-going effort.

Project 9S.4.1: Enlist local civic organizations to assist in the creation of emergency preparedness displays for use at libraries, during festivals or other gatherings, civic group meetings, etc. Examples include the following.

- Basic hazard awareness
- Animals in disaster
- Business continuity planning
- Children's safety
- Hazard information targeting tourists

Timeframe: 2 years
Cost Estimate (*Funding*): Up to $200 apiece (Local Funding)
Coordinating Agency: PCOEM
Support Agencies: Local 4-H Clubs, Pocahontas County Convention and Visitors Bureau (CVB), Local Businesses, Various Civic Organizations, Farm Bureau, Pocahontas County LEPC
Mitigation Type: Public Education and Awareness
Status: This project was originally rescinded per participation in regional initiatives; local officials, however, opted to generalize the strategy to ensure a more "all-hazards" approach and re-list it.

Project 9S.4.2: Update and maintain a call list to alert business owners and critical facilities of potential threats so that appropriate preventive actions can be taken.

Timeframe: On-going
Cost Estimate (*Funding*): N/A (N/A)
Coordinating Agency: PCOEM
Support Agencies: Pocahontas County 911
Mitigation Type: Emergency Services
Status: This project has been completed. It has been re-listed to encourage local officials to keep such a list current.

Project 9S.4.3: Send pre-canned news releases to media outlets for more rapid dissemination during emergency incidents. Include enough media outlets to ensure coverage of the majority of the county.

Timeframe: On-going
Cost Estimate (*Funding*): N/A (N/A)
Coordinating Agency: PCOEM
Support Agencies: Pocahontas County LEPC, Local Media Outlets
Mitigation Type: Public Education and Awareness
Status: The creation of information has been done; this project was re-listed to encourage local officials to develop and maintain relationships with media outlets.

Project 9S.4.4: Coordinate with the Pocahontas Times, Allegheny Mountain Radio, and other county organizations with Internet websites to include links to such emergency sources as the NWS (for information about rain and river gauges and weather warnings), etc.

Timeframe: On-going
Cost Estimate (*Funding*): N/A (N/A)
Coordinating Agency: PCOEM
Support Agencies: Pocahontas Times
Mitigation Type: Public Education and Awareness
Status: This project has been done; it was re-listed to encourage local officials to develop and maintain relationships with media outlets.

Project 9S.5.1: Review and update the Pocahontas County Emergency Operations Plan and include participation from municipalities in the planning process.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $5,000 if a contractor is used (EMPG, HSGP, HMEP, Local Funding)
Coordinating Agency: PCOEM
Support Agencies: Local First Responders
Mitigation Type: Emergency Services
Status: This project was added as part of Pocahontas County's most recent mitigation planning project.

Project 9S.5.2: Encourage municipalities to either adopt the county emergency operations plan or develop their own plan that is fully consistent with the county plan.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $5,000 if a contractor is used. (EMPG, HSGP, Local Funding)
Coordinating Agency: PCOEM
Support Agencies: N/A
Mitigation Type: Emergency Services
Status: This project was added as part of Pocahontas County's most recent mitigation planning project.

Project 9S.6.1: Encourage local shipping companies and critical facilities to develop "critical supply transportation plans" to ensure that the necessary supplies and/or materials they need to operate can be delivered during emergency incidents.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination will require no additional funding. (N/A)
Coordinating Agency: Pocahontas County LEPC
Support Agencies: PCOEM
Mitigation Type: Emergency Services
Status: This project was added as part of Pocahontas County's most recent mitigation planning project.

Project 9S.7.1: Coordinate with the American Red Cross (ARC) to determine suitable shelter sites and create agreements for the use of those facilities during emergencies.

Timeframe: 2 years
Cost Estimate (*Funding*): Such tasks are part of the ARC's regular mission. (N/A)
Coordinating Agency: Local Chapter of ARC
Support Agencies: PCOEM
Mitigation Type: Emergency Services
Status: This project was added as part of Pocahontas County's most recent mitigation planning project.

Project 9S.7.2: Coordinate with such agencies as the American Red Cross, WVDHSEM, US Department of Homeland Security (USDHS), etc. to discuss post-incident relocation and recovery.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination will require no additional funding. (N/A)
Coordinating Agency: PCOEM
Support Agencies: Local Chapter of ARC, WVDHSEM, USDHS
Mitigation Type: Emergency Services
Status: This project was added as part of Pocahontas County's most recent mitigation planning project.

QUINWOOD, TOWN OF

Project 1T.1.1: Develop and distribute information to the town's critical facilities describing the proper policies and procedures to be conducted in the event of a bomb threat.

Timeframe: On-going
Cost Estimate (*Funding*): Information has been developed; therefore, no additional funds should be necessary. (N/A)
Coordinating Agency: Quinwood Town Council
Support Agencies: GCEMA
Mitigation Type: Public Education and Awareness
Status: This project has been completed for existing critical facilities; town officials periodically meet with officials from these facilities for on-going planning.

RAINELLE, TOWN OF

Project 1U.1.1: Identify and maintain backup water supplies to make water available to citizens.

Timeframe: On-going
Cost Estimate (*Funding*): Identification of supplies should require little to no additional funding. (N/A)
Coordinating Agency: Greenbrier County PSD #2
Support Agencies: Rainelle Town Council, GCEMA
Mitigation Type: Prevention
Status: This project is an on-going effort; local officials elected to keep this project on the list in an effort to integrate mitigation efforts with other preparedness efforts.

RENICK, TOWN OF

Project 1V.1.1: Distribute an informational brochure including information on the burning ban and the leading causes of wildfires, as well as steps the general public can take to avoid starting wildfire.

Timeframe: On-going
Cost Estimate (*Funding*): Up to $2,500 for the production and distribution of information. (PDM, Local Funding)
Coordinating Agency: Renick Town Council
Support Agencies: GCEMA, Greenbrier County LEPC
Mitigation Type: Public Education and Awareness
Status: Local officials periodically disseminate public information on emergency preparedness and applicable local codes.

RICHWOOD, TOWN OF

Project 1W.1.1: Continue to review all community and economic development plans to ensure that designated growth areas are not in hazard areas. If they are, build mitigation measures into plans.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination requires little to no additional funding. (N/A)
Coordinating Agency: Town Council
Support Agencies: Region 4 PDC, Nicholas County Economic Development, Nicholas County Commission
Mitigation Type: Prevention
Status: This is an on-going strategy in support of municipal floodplain management efforts.

RONCEVERTE, CITY OF

Project 1X.1.1: Design and construct an inter-connect between Lewisburg and Ronceverte to help provide water if one plant is shut down due to contamination/damages from flooding.

Timeframe: 5 years
Cost Estimate (*Funding*): Up to $500,000 (CDBG, Local Funding)
Coordinating Agency: Ronceverte Public Works
Support Agencies: Lewisburg Public Works, Region 4 PDC
Mitigation Type: Structural Projects
Status: This project is on the regional project prioritization list for CDBG and/or other funds. It is reviewed annually.

RUPERT, TOWN OF

Project 1Y.1.1: Continue to apply for HMGP funds for acquisitions, elevations, or relocations of the three (3) identified repetitive loss properties in Rupert.

Timeframe: On-going (contingent upon funding availability)
Cost Estimate (*Funding*): Approximately $71,300. (HMGP)
Coordinating Agency: Rupert Floodplain Manager
Support Agencies: Greenbrier County Floodplain Manager, Greenbrier County Emergency Management Agency (GCEMA)
Mitigation Type: Structural Projects
Status: This project is considered when HMGP funds become available.

SMITHERS, CITY OF

Project 1Z.1.1: Identify undersized and inadequate culverts and correct the problem.

Timeframe:	On-going
Cost Estimate (*Funding*):	Simply identifying problem areas would require little to no additional funding; fixing problems, though, could require up to and in excess of $1,000,000. (CDBG)
Coordinating Agency:	Municipal Council
Support Agencies:	Engineering Consultants, Town Employees, Region 4 PDC
Mitigation Type:	Structural Projects
Status:	Analyses are on-going; smaller projects to correct problems are completed as maintenance projects.

Project 2Z.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Timeframe:	5 years
Cost Estimate (*Funding*):	This project can be done as a part of regular operations. (N/A)
Coordinating Agency:	Municipal Council
Support Agencies:	FCOES
Mitigation Type:	Emergency Services
Status:	This new project was added as part of this planning cycle.

SUMMERSVILLE, CITY OF

Project 1AA.1.1: Continue to train and re-certify the city's Floodplain Coordinator to assist citizens in complying with the floodplain ordinance.

Timeframe: On-going
Cost Estimate (*Funding*): No significant additional funding would be necessary per existing training line items. (N/A)
Coordinating Agency: Summersville Floodplain Manager
Support Agencies NCOES
Mitigation Type: Public Education and Awareness
Status: This project is completed as training or re-certification opportunities are necessary and/or available.

THURMOND, TOWN OF

Project 1AB.1.1: Develop more in depth municipal asset list to better understand the value of structures within the town.

Timeframe: 5 years
Cost Estimate (*Funding*): This project can be done as a part of regular operations. (N/A)
Coordinating Agency: Municipal Council
Support Agencies: FCOES
Mitigation Type: Emergency Services
Status: This new project was added as part of this planning cycle.

WEBSTER COUNTY

Project 1AC.1.1: Institute stricter floodplain enforcement.

Timeframe: 2 years

Cost Estimate (*Funding*): Floodplain enforcement is also provided; thus, continued enforcement should require no additional funding. (N/A)

Coordinating Agency: Webster County Floodplain Coordinator

Support Agencies: WCOES, Webster County Commission, FEMA

Mitigation Type: Prevention

Status: The county's floodplain manager is currently reviewing updated flood maps; revisions to the ordinance will follow that process within 12 months.

Project 1AC.1.2: Identify all Repetitive Loss (RL) and flood-prone non-RL properties within the county and coordinate with owners who would like to participate in future elevation, buyout, and retrofitting projects.

Timeframe: On-going (contingent on availability of funds)

Cost Estimate (*Funding*): Identification of these properties would require little to no additional funding; should a project be implemented, costs would be approximately $47,500 per structure purchased. (HMGP)

Coordinating Agency: Webster County Floodplain Coordinator

Support Agencies: WCOES, Webster County Commission

Mitigation Type: Prevention

Status: This is an on-going project; a buy-out or similar project has not been completed in several years.

Project 1AC.2.1: Supply schools, municipal agencies, and other critical facilities with informational products on the meaning of announcements and advice on what actions to take.

Timeframe: 5 yeas
Cost Estimate (*Funding*): Up to $2,500 for the production and distribution of materials. (PDM, EMPG, SERC, HMEP, Local Funding)
Coordinating Agency: WCOES
Support Agencies: Webster County LEPC
Mitigation Type: Public Education and Awareness
Status: The WCOES frequently partners with these types of agencies to share emergency (or potential emergency) information; Webster County officials elected to keep this project on its list because of continued potential positive impacts.

Project 1AC.3.1: Coordinate with the SCS to develop a map showing areas that could be affected by a dam failure.

Timeframe: On-going
Cost Estimate (*Funding*): Partner agencies, such as the SCS or WVDEP would likely have access to these maps; no additional local funding would be necessary. (N/A)
Coordinating Agency: WCOES
Support Agencies: SCS, WVDEP
Mitigation Type: Emergency Services
Status: This project had been deferred from Webster County's original mitigation planning process. It is considered on-going.

Project 1AC.4.1: Coordinate county efforts to meet the requirements of becoming a participant in the Community Rating System (CRS).

Timeframe: On-going

Cost Estimate (*Funding*): Compilation of materials necessary would no additional funding. (N/A)

Coordinating Agency: Webster County Floodplain Coordinator

Support Agencies: WCOES, Webster County Commission

Mitigation Type: Property Protection

Status: This project had been deferred from Webster County's original mitigation planning process. It is considered on-going.

Project 1AC.4.2: Coordinate with USDHS/FEMA and the WVDHSEM to complete the flood map modernization project.

Timeframe: 1 year

Cost Estimate (*Funding*): Participation would require little to no additional funding. (N/A)

Coordinating Agency: Webster County Floodplain Coordinator

Support Agencies: FEMA

Mitigation Type: Property Protection

Status: The county's floodplain manager recently received updated versions of the floodplain maps for review.

Project 1AC.5.1: Clean waterways to prevent water from backing up and possibly flooding certain areas.

Timeframe: 5 years
Cost Estimate (*Funding*): Unknown. (N/A)
Coordinating Agency: N/A
Support Agencies: WCOES, Municipal Public Works Partners, WVDOH,
Mitigation Type: Natural Resource Protection
Status: The county and its partners continue to coordinate with a variety of agencies to determine what would be necessary to start such a project.

Project 2AC.1.1: Coordinate with WVDOH implementing a plan of action to take when coordinating clean-up efforts.

Timeframe: On-going
Cost Estimate (*Funding*): Coordination requires little to no additional funding. (N/A)
Coordinating Agency: WCOES (primarily as a county POC)
Support Agencies: WVDOH, Municipal Public Works Partners
Mitigation Type: Emergency Services
Status: The WCOES cooperates with the WVDOH on a frequent basis. The county LEPC is considering a resource inventorying project which could touch on this topic.

Project 3AC.1.1: Identify assets within the county for more accurate loss estimates and work with the private sector to make resources available in concert with the LEPC's resource manual.

Timeframe: 2 years
Cost Estimate (*Funding*): Up to $5,000 if a contractor is used. (HMEP, Local Funding)
Coordinating Agency: Webster County LEPC
Support Agencies: WCOES
Mitigation Type: Emergency Services
Status: This project was listed as "new" during the county's most recent individual mitigation planning effort. The LEPC plans to undertake the resource manual project in 2011.

WEBSTER SPRINGS, TOWN OF

Project 1AD.1.1: Clean waterways to prevent water from backing up and possibly flooding certain areas.

Timeframe: 5 years
Cost Estimate (*Funding*): Unknown. (N/A)
Coordinating Agency: N/A
Support Agencies: WCOES, Municipal Public Works Partners, WVDOH,
Mitigation Type: Natural Resource Protection
Status: The town and its partners continue to coordinate with a variety of agencies to determine what would be necessary to start such a project.

WHITE SULPHUR SPRINGS, CITY OF

Project 1AE.1.1: Make the public aware of the hazardous material risk, what they can do if a spill occurs, and stress the importance of evacuation planning.

Timeframe:	On-going
Cost Estimate (*Funding*):	Up to $2,500 for the production and distribution of information. (PDM, Local Funding)
Coordinating Agency:	Greenbrier County LEPC
Support Agencies:	White Sulphur Springs Fire Department, GCEMA
Mitigation Type:	Public Education and Awareness
Status:	Local officials periodically disseminate public information on emergency preparedness and applicable local codes.

3.3 IMPLEMENTATION OF MITIGATION ACTIONS

§201.6(c)(3)(iii)	[The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

This section identifies the priority for implementing the projects identified in Sections 3.1 and 3.2. Each current project is listed with a "primary coordinator" in Section 3.2 that should be responsible for the overall implementation of the project.

Project (i.e., strategy) prioritization occurred in three (3) phases. First, the core planning committee ranked the 12 hazards considered by this plan, with "1" being the one to which they felt the region (or their county) was most vulnerable and "12" being the hazard to which they felt the county to be least vulnerable. The hazard priorities are as follows:

1. Flooding,
2. Winter storms,
3. Thunderstorms,
4. Wind,
5. Hazardous material incidents,
6. Hailstorms,
7. Wildfires,
8. Land subsidence,
9. Dam failure,
10. Terrorism,
11. Drought, and
12. Earthquake.

Second, the committee ranked the projects under each hazard by priority. Projects receiving a rank of "1" were considered to be the highest priority project for that particular hazard. The following criteria (roughly corresponding to the STAPLEE method) were used as considerations when prioritizing projects.

- **Social Impacts:** Consider whether the public would support implementation of the project. If so, priority likely rises.

- **Technical Feasibility:** Consider whether the project can be done and if it will yield the intended outcomes. If yes, priority would likely rise.
- **Administrative Requirements:** Consider the staffing, funding, and maintenance requirements of the project. If current capabilities can successfully manage and sustain the project, priority would be strengthened.
- **Political Impacts:** Consider the acceptability of the project from the political frame. If it is likely to cause political upheaval, it would receive a lower priority.
- **Legal Ramifications:** Consider whether the project can be lawfully implemented. If not, the project cannot be listed.
- **Environmental Impacts:** Consider whether there would be negative consequences to environmental assets should the project be implemented. If assets are impact, priority would be likely to fall.
- **Economic Impacts/Cost Benefit:** A brief "benefit cost review" per Federal Emergency Management Agency (FEMA) Publication 386-5: Using Benefit Cost Review in Mitigation Planning was conducted for each project to determine the "pros" and "cons" of each project as it related to project prioritization. Maximizing the use of available funds would positively affect a project's priority.

ALDERSON, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1A.1.1	Continue to apply for Hazard Mitigation Grant Program (HMGP) funds for acquisitions, elevations, or relocations of the one (1) identified repetitive loss property in Alderson.	**1**

ANSTED, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1B.1.1	Identify undersized and inadequate culverts and correct the problem.	**2**
2B.1.1	Develop more in depth municipal asset list to better understand the value of structures within the town.	**1**

CAMDEN-ON-GAULEY, TOWN OF

HAZARD PROJECTS *Project Number*	*Mitigation Project*	*Priority*
1C.1.1	Identify culverts, storm drains, etc. that frequently back-up, causing flash flooding.	**1**

COWEN, TOWN OF

HAZARD PROJECTS *Project Number*	*Mitigation Project*	*Priority*
1D.1.1	Coordinate with local agencies; the Webster County Office of Emergency Services (WCOES), WV Division of Highways (WVDOH), and the County Commission, and develop a plan of action for the identified landslide prone areas.	**1**

DURBIN, TOWN OF

HAZARD PROJECTS *Project Number*	*Mitigation Project*	*Priority*
1E.1.1	Review and update the floodplain ordinance to ensure full compliance with National Flood Insurance Program (NFIP) standards.	**6**
1E.1.2	Educate town council members and residents about the NFIP and its requirements. This project may include the facilitation of public forums to encourage questions regarding the NFIP.	**1**
1E.1.3	Coordinate with appropriate agencies to obtain updated NFIP policy-holder information within Durbin.	**3**
1E.2.1	Design and construct a sewage treatment plant out of the floodplain.	**5**
1E.3.1	Coordinate with FEMA to maintain an updated list of repetitive loss properties throughout Durbin.	**4**
2E.1.1	Either adopt the county emergency operations plan or develop a town-specific operations plan that is fully consistent with the county plan.	**2**

FAYETTE COUNTY

HAZARD PROJECTS *Project Number*	*Mitigation Project*	*Priority*
1F.1.1	Develop an education program on water conservation and the value of water-saving devices.	**9**
1F.1.2	Develop plan to have "watering points' in those areas of the county not served by public water (so citizens can obtain drinking water during droughts).	**9**
2F.1.1	Promote awareness and enforcement of fire season laws.	**7**
2F.1.2	Ensure public awareness of fire prevention practices, like safe clearing distance and debris maintenance for homes in wooded areas.	**7**
3F.1.1	Develop county wide storm water/drainage plan.	**10**
3F.1.2	Enforce the floodplain ordinance for all new construction.	**6**
3F.1.3	Work with the WVDOH, WV Division of Natural Resources (WVDNR), WV Department of Environmental Protection (WVDEP), Soil Conservation Services (SCS), etc. to develop a stream restoration, bank stabilization, and maintenance plan.	**8**
3F.2.1	Inform the public about debris programs. Pursue recycling, even if hauled to Raleigh or Kanawha Counties. Coordinate with WVDOH to ensure proper permitting regarding debris removal. Work with the WVDOH to expand its tire amnesty program. Inform the public of the appliance pick-up ordinance.	**12**
3F.3.1	Identify undersized and inadequate culverts and correct the problem.	**5**
3F.3.2	Study wastewater issue related to flooding, storm water, and public health.	**4**
3F.4.1	Continue to buy both repetitive and non-repetitive loss properties in flood prone areas.	**1**
3F.4.2	Work toward meeting the requirements for participation in the Community Rating System (CRS).	**1**
3F.4.3	Undertake buy-out projects in the Dunloup Watershed areas (i.e., the Dunloup Watershed Voluntary Buyout Program.	**1**
4F.1.1	Ensure enforcement and investigate possibility of enhancing Risk Management Plans (RMPs) for logging, mining and gas operations.	**11**
4F.1.2	Conduct regular inspection of earthen impoundments with required reporting. Doing so may require coordination with property owners.	**13**
4F.1.3	Work with the WVDOH to identify and prioritize areas prone to recurring slides. Develop plans to reduce risk and occurrence.	**12**
4F.1.4	Work with the WVDOH to develop Memorandum of Understanding (MOU) with mining companies and contractors to clear impacted roadways.	**14**

Project Number	*Mitigation Project*	*Priority*
5F.1.1	Reduce the impact to citizens due to power loss during severe storm events by investigating the feasibility of backup power for citizens in a special needs registry.	**6**
5F.1.2	Reduce the impact of loss of conventional communications by developing local radio network (Citizen Band [CBs] and amateur radio) and by prompting knowledge and training in this arena. Members can serve as contact points during hazard events.	**14**
6F.1.1	Support the Local Emergency Planning Committee (LEPC) in the development of a commodity flow plan.	**16**
6F.1.2	Increase oversight of hazardous chemicals within used and stored in Fayette County.	**16**
6F.1.3	Enhance public awareness for hazmat incidents.	**16**
7F.1.1	Develop early alert system, special needs registry, and a well informed citizenry.	**2**
7F.1.2	Develop early warning and alert system.	**3**
7F.1.3	Develop a special needs registry for home bound/non-ambulatory and citizens with special physical or medical needs. Entry on registry ensures check in during hazards and special attention.	**1**

FAYETTEVILLE, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1G.1.1	Identify undersized and inadequate culverts and correct the problem.	**2**
2G.1.1	Develop more in depth municipal asset list to better understand the value of structures within the town.	**1**

GAULEY BRIDGE, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1H.1.1	Develop more in depth municipal asset list to better understand the value of structures within the town.	**1**

GREENBRIER COUNTY

HAZARD PROJECTS *Project Number*	*Mitigation Project*	*Priority*
1I.1.1	Continue to work with the WVDOH to design road construction to be at the 100-year base flood elevation or higher.	**7**
1I.2.1	Maintain a database of all at risk structures in floodways and floodplains and distribute information to homeowners and 1I.2.2business on the importance of purchasing flood insurance and flood-proofing techniques to protect their homes and business.	**5**
1I.2.2	Establish an on-going program of mitigation training for public officials and private business as well as the citizens of Greenbrier County.	**6**
1I.2.3	Continue to make informational pamphlets available to Greenbrier County citizens that promote buying flood insurance.	**12**
1I.3.1	Continue to make permitting necessary (that is consistent with local floodplain ordinances) before any new construction is allowed.	**8**
1I.4.1	Determine feasibility of floodwalls or other structures to protect water treatment facilities from flooding.	**13**
1I.4.2	Determine feasibility of floodwalls or other structures to protect wastewater treatment facilities from flooding.	**9**
1I.5.1	Provide opportunities for the leaders in Greenbrier County to participate in FEMA (and/or other agency) proactive programs.	**32**
1I.6.1	Continue to apply for HMGP funds for acquisitions, elevations, or relocations of identified at risk, repetitive loss, non-repetitive loss, or substantial damaged properties in Greenbrier County.	**10**
2I.1.1	Continue to enhance and upgrade current snow removal capabilities throughout the county.	**11**
2I.1.2	Develop and implement programs to coordinate maintenance and mitigation activities to reduce risk to public infrastructure from severe storms.	**30**
2I.1.3	Develop and implement programs to keep trees from threatening lives, property, and public infrastructure during severe storm events.	**31**
2I.2.1	Increase public awareness of the severe storm mitigation activities that they can undertake.	**14**
2I.2.2	Enhance weather monitoring to attain earlier severe storm warnings.	**15**
2I.2.3	Map and publicize locations around the county that have the highest incidences of extreme storms.	**16**

Project Number	*Mitigation Project*	*Priority*
2I.2.4	Encourage/recommend electrical utilities to use underground construction methods where possible to reduce power outages from severe storms.	**26**
2I.2.5	Encourage/recommend improved building materials and techniques when rebuilding damaged property.	**27**
3I.1.1	Support the development of and funding for an early warning mass notification system.	**1**
3I.1.2	Continue to coordinate with Blacksburg National Weather Service (NWS) office on a daily basis to improve readiness for imminent severe weather.	**2**
3I.1.3	Coordinate any warning system with the Greenbrier County Board of Education to enhance protection of students and faculty under threat of severe weather.	**17**
4I.1.1	Publicize the location of karst geologic formations along with the hazards associated with it.	**25**
5I.1.1	Continue to monitor identified areas in Greenbrier County that have limestone deposits or underground mining that may create sink holes. Update GIS databases as necessary.	**24**
6I.1.1	Implement a water study and analyze the data to better help citizens during periods of drought.	**23**
6I.1.2	Identify and maintain backup water supplies to make water available to citizens.	**18**
7I.1.1	Coordinate with the power company to clear trees and other debris from electric lines throughout the county.	**22**
7I.1.2	Develop a database of special needs populations which require electric power for life support equipment.	**3**
7I.2.1	Install repeaters, retro-fit generators at tower sites, and continue to work with amateur radio operators.	**4**
7I.3.1	Have commodity flow studies done to better analyze the types and quantities of materials could be present in the county.	**19**
7I.3.2	Continue to coordinate with the Regional Response Team and county response team(s) in order to provide a fast and effective response to an incident.	**20**
7I.4.1	Find a water resource (e.g., dry hydrants) for volunteer fire departments that is strategically located for fast response. Make this resource known to fire departments.	**21**
7I.5.1	Coordinate with assets in the county to more effectively estimate losses from a disaster.	**28**
8I.1.1	Develop a partnership with appropriate parties that are stakeholders in the monitoring and general condition of dams throughout Greenbrier County. Provide technical and manpower support to evaluate the status of these dams and report to the Core Planning Team on a yearly basis.	**29**

HILLSBORO, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1J.1.1	Promote any new construction and/or roof remodeling at the municipal level to be designed to withstand 90 mph winds.	**2**
2J.1.1	Either adopt the county emergency operations plan or develop a town-specific operations plan that is fully consistent with the county plan.	**1**

LEWISBURG, CITY OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1K.1.1	Design and construct an inter-connect between Lewisburg and Ronceverte to help provide water if one plant is shut down due to contamination/damages from flooding.	**1**
2K.1.1	Identify and maintain backup water supplies to make water available to citizens.	**2**

MARLINTON, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1L.1.1	Review and update the floodplain ordinance to ensure full compliance with NFIP standards.	**6**
1L.1.2	Educate town council members and residents about the NFIP and its requirements. This project may include the facilitation of public forums to encourage questions regarding the NFIP.	**2**
1L.1.3	Coordinate with appropriate agencies to obtain updated NFIP policy-holder information within Marlinton.	**4**
1L.2.1	Construct flood levees along the Greenbrier River in Marlinton.	**1**
1L.3.1	Coordinate with FEMA to maintain an updated list of repetitive loss properties throughout Marlinton.	**3**
2L.1.1	Either adopt the county emergency operations plan or develop a town-specific operations plan that is fully consistent with the county plan.	**5**

MEADOW BRIDGE, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1M.1.1	Develop more in depth municipal asset list to better understand the value of structures within the town.	**1**

MONTGOMERY, CITY OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1N.1.1	Identify undersized and inadequate culverts and correct the problem.	**2**
2N.1.1	Develop more in depth municipal asset list to better understand the value of structures within the town.	**1**

MOUNT HOPE, CITY OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1O.1.1	Identify undersized and inadequate culverts and correct the problem.	**2**
2O.1.1	Develop more in depth municipal asset list to better understand the value of structures within the town.	**1**

NICHOLAS COUNTY

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1P.1.1	Purchase and re-distribute the booklet *Getting Ready: A Family Emergency Guide* prepared by the State of West Virginia.	**1**
2P.1.1	Continue to review and update floodplain ordinances to regulate development within the 100-year floodplain. Make sure the public is aware of requirements in the ordinance.	**4**
2P.1.2	Continue to train and re-certify the county Floodplain Coordinator to assist citizens in complying with the floodplain ordinance.	**7**
2P.1.3	Continue to update the GIS data layer of flood maps on the county mapping database to identify floodplain areas of Nicholas County.	**8**

Project Number	*Mitigation Project*	*Priority*
2P.1.4	Continue working with municipalities to update floodplain ordinances adopted prior to 1987.	**6**
2P.1.5	Continue training the county and municipal development officials on NFIP requirements.	**10**
2P.1.6	As funds become available, undertake buyout and/or elevation projects to lessen the number of repetitive loss properties. This project also includes non-RL properties.	**2**
3P.1.1	Continue to review all comprehensive plans to ensure that designated growth areas are not in hazard areas. If they are, build mitigation measures into development plans.	**2**
3P.1.2	Continue to review all capital improvement plans to ensure that infrastructure improvements are not directed toward hazardous areas. If they are, build mitigation measures into plans.	**9**
4P.1.1	Coordinate with county emergency services personnel to participate in exercises of simulated biological and hazardous material incidents to practice response efforts.	**3**
5P.1.1	Maintain updates to plans that detail specific actions to be taken when weather events such as ice, snow, and flooding, etc. strike. Plans should include who is responsible for such actions.	**5**

OAK HILL, CITY OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1Q.1.1	Identify undersized and inadequate culverts and correct the problem.	**2**
2Q.1.1	Develop more in depth municipal asset list to better understand the value of structures within the town.	**1**

PAX, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1R.1.1	Develop more in depth municipal asset list to better understand the value of structures within the town.	**1**

POCAHONTAS COUNTY

HAZARD PROJECTS *Project Number*	*Mitigation Project*	*Priority*
1S.1.1	Review and update floodplain ordinances to ensure full compliance with NFIP standards.	**6**
1S.1.2	Educate local government representatives about the NFIP and its requirements. This project may include the facilitation of public forums to encourage questions regarding the NFIP.	**21**
1S.1.3	Coordinate with appropriate agencies to obtain updated NFIP policy-holder information within Pocahontas County.	**22**
1S.2.1	Coordinate with FEMA to maintain an updated list of repetitive loss properties throughout Pocahontas County and the municipalities therein.	**20**
1S.2.2	Input repetitive loss properties into a Geographic Information System (GIS) database for use in future mitigation activities.	**23**
1S.2.3	As funds become available, undertake buyout and/or elevation projects to lessen the number of repetitive loss properties. This project also includes non-RL properties. As part of this process, hold a series of public meetings with property owners to identify specific project areas and to gauge interest in project participation.	**2**
1S.3.1	Coordinate with the WVDOH to repair or install culverts in an effort to alleviate water backup onto roads during high-volume rain incidents.	**3**
2S.1.1	Develop a portable bulk water system that can be moved where it is needed during severe drought conditions.	**26**
2S.1.2	Coordinate with local fire departments to haul water upon request to county residents and facilities.	**25**
3S.1.1	Promote the NWS “Storm Ready” program.	**11**
4S.1.1	Determine suitable locations for and consider the installation of dry hydrants throughout the county.	**28**
5S.1.1	Work with the WV Division of Forestry to coordinate efforts to promote re-seeding after extraction occurs in the timber industry.	**5**
6S.1.1	Coordinate with the WVDOH and/or private contractors to ensure that snow can be quickly cleared from major thoroughfares.	**1**
7S.1.1	Coordinate with local officials and representatives from organizations filing Tier II reports to produce more detailed plans regarding spills and public protective measures.	**24**
8S.1.1	Compile a list of potential targets for international terrorism throughout Pocahontas County. This list should include not only sites, but also scenarios. Further, the list should be kept secure.	**17**
8S.1.2	Coordinate with local law enforcement providers (and potentially representatives from community assets) to monitor for suspicious persons or groups throughout the county.	**18**

Project Number	*Mitigation Project*	*Priority*
9S.1.1	Develop an alternate communications plan that utilizes local fire departments and their ability to communicate by radio should telephone service be interrupted.	**7**
9S.1.2	Coordinate with Frontier Communications as they update their emergency planning to ensure common expectations between the company and local resources during emergency incidents.	**8**
9S.2.1	Inventory residences and businesses throughout the county utilizing propane for heating. Explain the potential for propane leaks and/or explosions and educate residents/business owners on how to safeguard their assets from damage.	**9**
9S.3.1	Compile a general list of the types of incidents that could occur in Pocahontas County and result in mass casualties.	**10**
9S.4.1	Enlist local civic organizations to assist in the creation of emergency preparedness displays for use at libraries, during festivals or other gatherings, civic group meetings, etc.	**29**
9S.4.2	Update and maintain a call list to alert business owners and critical facilities of potential threats so that appropriate preventive actions can be taken.	**4**
9S.4.3	Send pre-canned news releases to media outlets for more rapid dissemination during emergency incidents. Include enough media outlets to ensure coverage of the majority of the county.	**15**
9S.4.4	Coordinate with the Pocahontas Times, Allegheny Mountain Radio, and other county organizations with Internet websites to include links to such emergency sources as the NWS (for information about rain and river gauges and weather warnings), etc.	**12**
9S.5.1	Review and update the Pocahontas County Emergency Operations Plan and include participation from municipalities in the planning process.	**13**
9S.5.2	Encourage municipalities to either adopt the county emergency operations plan or develop their own plan that is fully consistent with the county plan.	**14**
9S.6.1	Encourage local shipping companies and critical facilities to develop “critical supply transportation plans” to ensure that the necessary supplies and/or materials they need to operate can be delivered during emergency incidents.	**16**
9S.7.1	Coordinate with the American Red Cross to determine suitable shelter sites and create agreements for the use of those facilities during emergencies.	**19**
9S.7.2	Coordinate with such agencies as the American Red Cross, WV Division of Homeland Security and Emergency Management (WVDHSEM), US Department of Homeland Security (USDHS), etc. to discuss post-incident relocation and recovery.	**27**

QUINWOOD, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1T.1.1	Develop and distribute information to the town's critical facilities describing the proper policies and procedures to be conducted in the event of a bomb threat.	**1**

RAINELLE, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1U.1.1	Identify and maintain backup water supplies to make water available to citizens.	**1**

RENICK, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1V.1.1	Distribute an informational brochure including information on the burning ban and the leading causes of wildfires, as well as steps the general public can take to avoid starting wildfire.	**1**

RICHWOOD, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1W.1.1	Continue to review all community and economic development plans to ensure that designated growth areas are not in hazard areas. If they are, build mitigation measures into plans.	**1**

RONCEVERTE, CITY OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1X.1.1	Design and construct an inter-connect between Lewisburg and Ronceverte to help provide water if one plant is shut down due to contamination/damages from flooding.	**1**

RUPERT, TOWN OF

HAZARD PROJECTS *Project Number*	*Mitigation Project*	*Priority*
1Y.1.1	Continue to apply for HMGP funds for acquisitions, elevations, or relocations of the three (3) identified repetitive loss properties in Rupert.	**1**

SMITHERS, CITY OF

HAZARD PROJECTS *Project Number*	*Mitigation Project*	*Priority*
1Z.1.1	Identify undersized and inadequate culverts and correct the problem.	**2**
2Z.1.1	Develop more in depth municipal asset list to better understand the value of structures within the town.	**1**

SUMMERSVILLE, CITY OF

HAZARD PROJECTS *Project Number*	*Mitigation Project*	*Priority*
1AA.1.1	Continue to train and re-certify the city's Floodplain Coordinator to assist citizens in complying with the floodplain ordinance.	**1**

THURMOND, TOWN OF

HAZARD PROJECTS *Project Number*	*Mitigation Project*	*Priority*
1AB.1.1	Develop more in depth municipal asset list to better understand the value of structures within the town.	**1**

WEBSTER COUNTY

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1AC.1.1	Institute stricter floodplain enforcement.	**1**
1AC.1.2	Identify all repetitive loss and flood-prone non-repetitive loss properties within the county and coordinate with owners who would like to participate in future elevation, buyout, and retrofitting projects.	**3**
1AC.2.1	Supply schools, municipal agencies, and other critical facilities with informational products on the meaning of announcements and advice on what actions to take.	**9**
1AC.3.1	Coordinate with the SCS to develop a map showing areas that could be affected by a dam failure.	**6**
1AC.4.1	Coordinate county efforts to meet the requirements of becoming a participant in the Community Rating System (CRS).	**2**
1AC.4.2	Coordinate with USDHS/FEMA and the WVDHSEM to complete the flood map modernization project.	**4**
1AC.5.1	Clean waterways to prevent water from backing up and possibly flooding certain areas.	**5**
2AC.1.1	Coordinate with WVDOH implementing a plan of action to take when coordinating clean-up efforts.	**8**
3AC.1.1	Identify assets within the county for more accurate loss estimates and work with the private sector to make resources available in concert with the LEPC's resource manual.	**7**

WEBSTER SPRINGS, TOWN OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1AD.1.1	Clean waterways to prevent water from backing up and possibly flooding certain areas.	**1**

WHITE SULPHUR SPRINGS, CITY OF

HAZARD PROJECTS		
Project Number	*Mitigation Project*	*Priority*
1AE.1.1	Make the public aware of the hazardous material risk, what they can do if a spill occurs, and stress the importance of evacuation planning.	**1**

3.4 REGIONAL IMPLICATIONS

In most cases, the individual implementation of the projects listed in Sections 3.1 through 3.3 would not have a large impact on the region as a whole. There should, however, be several things kept in mind as these projects are undertaken. For example, several member governments expressed a desire to upgrade communications capabilities. As these capabilities are updated, community leaders should bear interoperability in mind – not only within their own jurisdiction, but also with neighboring jurisdictions (including other counties in the region).

Other projects, such as public education and awareness efforts, could be accomplished through partnerships with neighboring jurisdictions. As such, individual jurisdictions could share costs and reduce duplication of effort. As can be seen by the above risk assessment, many of the communities in Region 4 are susceptible to the same types of hazards.

Though this document is a plan, it calls for a number of other planning initiatives to be completed. Those initiatives should keep this process as a part of the overall planning process. In other words, community leaders should not plan for the sake of planning. This document can provide evidence as to the hazards most likely faced by the communities and planning should strengthen capabilities to lessen the effects of these types of emergencies. Further, communities should not plan in a vacuum. For example, several municipal jurisdictions (e.g., Richwood, Rainelle, Smithers, Quinwood, etc.) are close to county lines and may frequently provide emergency response assistance to the neighboring jurisdiction. In the case of Quinwood, for example, it would be helpful for the plans maintained by Greenbrier and Nicholas Counties to be consistent.

Finally, community leaders should remember that large structural projects could change the topography enough to affect neighboring jurisdictions, primarily with respect to the flooding hazard. For example, stream bank stabilization project may channel water to another low-lying area (because it had previously dissipated by flooding upstream areas) and put additional structures at risk. Other projects, not related to mitigation, could have the same effect. For example, the construction of a shopping plaza with large parking lots could cause run-off to back up in unexpected places, many of which had not previously been susceptible to flooding. As with planning projects, local leaders would be encouraged to share their intentions (of implementing mitigation projects) with their neighbors.

There are a number of projects that were very similar in nature identified by each participating jurisdiction. Rather than list those individually for the jurisdictions, they are listed here. Not all of these strategies are not "true" mitigation projects (i.e., they do not remove people, facilities, etc. from hazard areas), but they do reduce losses by better preparing affected jurisdictions. Additionally, these types of projects lend themselves well to collaborative implementation.

- **REGIONAL GOAL #1:** Lessen flood risks throughout the region by updating flood hazard mapping; undertaking buy-outs, elevation projects, and relocating flooded structures; and mitigating repeated flooding of roadways.
  - **Objective:** Coordinate with various partner agencies to maximize flood mitigation efforts.
    - **Project:** Cooperate with USDHS/FEMA on the flood map modernization project.
      - **Timeframe:** On-going
      - **Cost Estimate (*Funding*):** Coordination should require no additional funding, i.e., the project is being funded by FEMA. (N/A)
      - **Coordinating Agency:** FEMA
      - **Support Agencies:** Local Government
      - **Mitigation Type:** Public Education and Awareness

    - **Project:** Undertake buy-outs, elevation projects, and/or relocate flooded structures if and when funding is available.
      - **Timeframe:** On-going
      - **Cost Estimate (*Funding*):** Approximately $58,740 per purchased structure. (HMGP) – NOTE: The figure was derived by averaging the median housing value for each of the five (5) participating counties.
      - **Coordinating Agency:** Local Floodplain Coordinators
      - **Support Agencies:** Local Government, WVDHSEM, FEMA
      - **Mitigation Type:** Structural Projects

- **Project:** Continue to collect information on Repetitive Loss (RL) properties (to include general areas, lowest floor elevations, etc.) to aid in possible future implementation of the projects as well as in refining a strategy for addressing RL areas in future versions of this plan.
  - **Timeframe:** 5 years
  - **Cost Estimate (*Funding*):** Collecting information on properties – based on the RL information included in this version of the plan – should not require significant additional funding. (N/A)
  - **Coordinating Agency:** Local Floodplain Coordinators
  - **Support Agencies:** County Emergency Managers
  - **Mitigation Type:** Prevention

- **Project:** Coordinate with the WVDOH to identify frequently-flooded roadways and identify appropriate mitigation strategies to lessen the occurrences of flooding along these roadways.
  - **Timeframe:** On-going
  - **Cost Estimate (*Funding*):** Coordination and identification of strategies should require no additional funding. Any identified projects could be included on future WVDOH maintenance/project lists. (N/A)
  - **Coordinating Agency:** County Emergency Managers
  - **Support Agencies:** WVDOH, Local Government
  - **Mitigation Type:** Prevention

- **REGIONAL GOAL #2:** Enhance mitigation efforts through public education and by increasing early warning capabilities.
  - **Objective:** Provide local residents with more advance warning of impending severe weather (e.g., hailstorms, thunderstorms, wind, and winter storms).
    - **Project:** Coordinate with the appropriate NWS office to obtain advance warnings of severe weather.
      - **Timeframe:** On-going
      - **Cost Estimate (*Funding*):** The NWS already provides the information; altering transmittal would require no additional funding. (N/A)
      - **Coordinating Agency:** County Emergency Managers

- **Support Agencies:** NWS
- **Mitigation Type:** Public Education and Awareness

▪ **Project:** Develop relationships with local medical providers to ensure quick dissemination of severe weather announcements.
- **Timeframe:** On-going
- **Cost Estimate (*Funding*):** Developing relationships should require no additional funding, assuming the media's continued cooperation in disseminating emergency messages.
- **Coordinating Agency:** County Emergency Managers
- **Support Agencies:** Local Media Providers
- **Mitigation Type:** Public Education and Awareness

o **Objective:** Educate the public on hazard mitigation and preparedness.
▪ **Project:** Prepare public information campaigns regarding risks and family preparedness for such hazards as thunderstorms, high winds, hailstorms, earthquakes, and winter storms.
- **Timeframe:** On-going
- **Cost Estimate (*Funding*):** Up to $2,500 per campaign. (Pre-Disaster Mitigation [PDM], Emergency Management Performance Grant [EMPG], Hazardous Materials Emergency Planning [HMEP] Grant, State Emergency Response Commission [SERC], Local Funding)
- **Coordinating Agency:** County Emergency Managers
- **Support Agencies:** LEPCs, Local Government
- **Mitigation Type:** Public Education and Awareness

o **Objective:** Consider the feasibility of implementing codes related to hazard mitigation *for non-flood hazards*.
▪ **Project:** Research and determine the appropriateness of creating codes to regulate such things as building materials, develop zones, etc. to prevent damage resulting from such hazards as land subsidence, high winds, etc.
- **Timeframe:** On-going

- **Cost Estimate (*Funding*):** Researching and considering such regulations should require no additional funding. Future implementation – which would be considered another strategy – may require local funding. (N/A)
- **Coordinating Agency:** Local Government
- **Support Agencies:** Local Government Legal Counsel
- **Mitigation Type:** Prevention

SECTION 4.0

PLAN MAINTENANCE PROCESS

As with any plan, this document must be actively maintained in order to be a viable mitigation tool for Region 4's member governments. Section 4.0 outlines the general process that will be used to maintain this document.

4.0 PLAN MAINTENANCE PROCESS

§201.6(c)(4)(i)	[The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.
§201.6(c)(4)(ii)	[The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.
§201.6(c)(4)(iii)	[The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.

The long-term success of this document depends in large part on routing monitoring, evaluating, and updating so that it will remain a valid tool for the participating communities to use. Also critical to the overall success of this strategy is the continued implementation of the local-level multi-jurisdictional mitigation efforts in accordance with this document.

Formal Plan Adoption

A total of 31 local governments in southeastern West Virginia have participated in the hazard mitigation planning process. At the municipal level, cities and towns participated directly in the development of the county-specific hazard mitigation plans that served as one of the primary bases of this document. Municipal jurisdictions were given ample opportunity to review and approve their sections of this document. Counties coordinated that process as well as participated in this process (which was spearheaded by the Region 4 Planning and Development Council [PDC]).

This regional document has been designed to illustrate the impacts of hazards across the five (5)-county region and to highlight the benefits of a coordinated approach to hazard mitigation. Each of the jurisdictions affected by this document formally adopted it by a resolution of their governing board.

The adoption process included the delivery of a copy of this document to the local jurisdiction, along with a sample adopting resolution. The Region 4 PDC coordinated this delivery. Region 4 officials explained to municipal and county leaders that this document serves as updates to the local-level mitigation plans they had adopted between 2008 and early 2010. Adopting resolutions were collected by the Region 4 PDC. Copies of all resolutions were scanned upon receipt and included alphabetically in Appendix 4 of this document.

The document was submitted to the West Virginia Division of Homeland Security and Emergency Management (WVDHSEM) and the Federal Emergency Management Agency (FEMA) Region III prior to the adoption process to ensure that all federal and state planning regulations had been met. Doing so prior to adoption meant two (2) things: first, the plan was initially issued an "Approved Pending Adoption" status, and secondly, the adoption process was ultimately more efficient (because re-adoptions following revisions were not necessary).

Implementation

The implementation of this plan will likely prove to be more difficult than its adoption. While this plan puts forth many worthwhile and "high" priority recommendations, there may be competition among the participating communities throughout Region 4 for limited mitigation funds. The decision of which action (i.e., project) to undertake first will be the primary issue that the PDC's communities face. Fortunately, this plan has been designed with this issue in mind; as such, high priority actions have been included for each participating jurisdiction so each jurisdiction can pursue high-priority actions independently. Secondly, many of the jurisdictions in the region represent economically distressed areas, meaning that funding for large scale projects such as those advocated by this plan is often an issue. To ensure that mitigation efforts get underway, this document includes several low or no-cost recommendations.

An example of a low-cost, high-priority recommendation would be to pursue the education efforts necessary for elected officials and the general public as they relate to participation in the National Flood Insurance Program (NFIP). In other cases, jurisdictions may considering updating and/or revising their local floodplain ordinances and assisting state and federal authorities as they update flood mapping in their communities.

Another example of a low-cost project would be to integrate mitigation awareness into the many other pre-emergency public information campaigns that local-level emergency managers distribute on a routine basis. As an example, a variety of information on preparedness for hazardous material emergencies is frequently disseminated by each county's Local Emergency Planning Committee (LEPC). Those efforts could be integrated into the county's (and region's) overall mitigation strategy. Other public education efforts during such events as winter weather awareness week, etc. could equip the public with the knowledge necessary to "mitigate for themselves", which supports the concept of implementing mitigation at the lowest level possible.

Additionally, it should be noted that county emergency managers work with their counterparts in community and economic development planning to ensure that mitigation and emergency preparedness are integrated into other planning efforts, such as:

- Comprehensive planning,
- Capital improvement planning, and
- Economic development goals and incentives.

These emergency managers make risk information available to their local economic development agencies. Further, the presence of the Region 4 PDC can help ensure that future development does not add to the region's overall vulnerability.

The guiding principle under the implementation of this plan is that mitigation should be incorporated as much as possible into the daily actions of the coordinating agencies responsible for project implementation. During the development of the individual county plans in 2004 and 2008, county mitigation planning committees attempted to align as many existing programs as possible with mitigation efforts. Such an approach was also incorporated into this document. This approach ensures that mitigation efforts occur by default. While ensuring these efforts occur certainly helps show progress when this document is updated, it also builds buy-in for the strengthening of the community by not asking certain coordinating agencies to shoulder an entire list of new responsibilities.

It is also important to continually monitor funding opportunities that can be utilized to implement some of the larger mitigation recommendations in this document. County commissions, municipal councils, and county-level emergency

managers are often the Points of Contact (POCs) for such communication. Fortunately, emergency managers throughout the region (and West Virginia) frequently share these opportunities with colleagues. As such, a repository of funding options should be easy to maintain. Funding opportunities often present themselves in the aftermath of large-scale disasters, but they can also be present on a rotating cycle. The communities participating in this process have been cognizant of ranking both high and low-projects as "high priority" so that they can be in a position to take advantage of whatever funding opportunities arise.

By adopting this plan, communities served by the Region 4 PDC commit to the following:

- Pursuing the implementation of high-priority, low/no cost recommended actions,
- Keeping the concept of mitigation in the forefront of community decision-making by identifying and stressing the recommendations of the hazard mitigation plan when other community goals, plans, and activities are discussed, and
- Maintaining a constant monitoring of multi-objective, cost-share opportunities to assist the participating communities in implementing the recommended actions of this plan for which no current funding or support exists.

Integration into Existing Planning Mechanisms

As the custodial agency of the regional Hazard Mitigation Plan (HMP), the Region 4 PDC should ensure that mitigation planning is incorporated, as appropriate, into other planning mechanisms. Such a statement is not meant to say that mitigation planning should inhibit other types of planning, such as community and economic development efforts. Ensuring compatibility between these initiatives, rather, should provide an opportunity for all types of planners to understand the interplay between risk and development and the potential future vulnerabilities of fully-developed areas. Integration can open a dialogue between planners about how to responsibly plan the future of the communities throughout Region 4.

The Region 4 PDC acts as a sort of clearinghouse for planning initiatives around its region. The PDC does not "regulate" or "supervise" these efforts, but it does maintain a central repository of efforts that are underway throughout the planning area. It maintains such documents as a Comprehensive Economic

Development Strategy (CEDS), housing and community development assessments, etc. The PDC can compare these areas highlighted for development and other projects through its documents with this mitigation plan. For instance, some traditional PDC projects, such as supporting infrastructure (e.g., water and sewer) system extensions, may support mitigation efforts for such hazards as drought and public health emergencies. These extensions may not have any effect on hazards such as flooding. In any circumstance, the PDC may be able to use support of a mitigation effort as further justification for the funding of a project.

Additional agencies throughout the region, such as the county-level offices of emergency management, will actively integrate the information contained in this risk assessment into other planning initiatives, such as the maintenance of their jurisdiction-specific Emergency Operations Plans (EOPs). These documents should support the strengthening of capabilities to respond to the hazards identified by the risk assessment. As mitigation projects are implemented and risk is thus reduced, the emergency services community may need to "re-plan" its response to address what has become (thanks to the mitigation project) a more critical risk.

Other agencies, such as Greenbrier County Planning, already integrate risk and vulnerability data into their planning efforts. For example, the *Greenbrier County Comprehensive Plan* contains an "environmental hazards map" that compares targeted development areas to such risk areas as karst geologic formations and 100-year floodplains. The Economic Development Authorities (EDAs) serving the other counties in the region maintain similar comparisons. As such, these agencies have shown an ability to actively integrate risk assessment into their existing planning efforts. As mitigation projects are implemented, risks could be reduced to the point that additional areas may be targeted for development (e.g., a buyout project could create green space for a walking trail or park).

Finally, it is significant to note that all 31 member governments within Region 4 are represented by the PDC itself. As the custodial agency of this document, the PDC can schedule a regular review with its member governments at one of its council meetings to ensure that local officials are educated as to the plan's contents – and in agreement with its contents – even as those officials change and this document is updated. This representation should also facilitate local government comment on both the risks facing their jurisdictions and the types and numbers of mitigation projects that could be implemented.

Maintenance

Plan maintenance requires an ongoing effort to monitor and evaluate the implementation of the plan, and to update the plan as progress, roadblocks, or changing circumstances are recognized. All five (5) counties in the region identified their county-level emergency management office as the coordinator of local reviews. Local reviews are to occur at no less than five (5)-year intervals. The counties also indicated that they may facilitate reviews following major disasters.

Each county identified several conceptual elements that can guide a review of this document. Those elements are as follows:

- **Ease of Implementation:** How smoothly has implementing the project (or similar types of projects) been? Have programs been readily available to assist in funding the implementation of the project (or similar types of projects)?
- **Cost Effectiveness:** Have sufficient funding sources been available to implement the project at a cost manageable by the local government? Have the costs of implementing the project been significantly less than the cumulative future costs potentially incurred by an un-corrected situation?
- **Social Impacts:** Has the public perceived that the project has positively lessened hazard-related losses? Has implementing the project adversely affected any segment of the population?
- **Political Impacts:** Has implementing a particular project (or type of project) been delayed due to the political consequences of its implementation?
- **Economic Impacts:** Has the cost/benefit ratio of implementing the project been acceptable? Has implementing a project adversely affected a particular segment of the local economy?
- **Overall Positive Impacts:** Have local leaders generally agreed that implementing a particular project was beneficial to the community?

When each county convenes for a review, it should coordinate with the Region 4 PDC to ensure that this document is updated appropriately. Public participation should be assured as the plan is updated. The Region 4 PDC will ensure that a public review process *for the entire regional document* is undertaken at least once per five (5)-year period. This public review will include two (2) initiatives:

publishing an advertisement in the primary newspaper in all five (5) counties that invites the public to review the existing document with a list of proposed updates (i.e., the public comment form in Appendix 4 can be used to document these comments even during future updates), and placing discussion of the plan on the agenda of one of the council's regularly-scheduled meetings (which are always advertised and open to the public).

This plan should be updated in written form at least once during the five (5)-year cycle. Such updates should be resubmitted to the WVDHSEM and FEMA Region III for approval. Upon approval, participating jurisdictions should re-adopt the plan by resolution.

APPENDIX 1

HAZUS FLOOD REPORTS FOR ALL REGION 4 COUNTIES

HAZUS-MH: Flood Event Report

Region Name: Fayette_County

Flood Scenario: 10-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.

Table of Contents

General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 664 square miles and contains 2,476 census blocks. There are over 19 thousand households in the region and has a total population of 47,579 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 25,178 buildings in the region with a total building replacement value (excluding contents) of 3,176 million dollars (2006 dollars). Approximately 96.09% of the buildings (and 82.55% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 25,178 buildings in the region which have an aggregate total replacement value of 3,176 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,621,609	82.5%
Commercial	351,478	11.1%
Industrial	61,752	1.9%
Agricultural	4,934	0.2%
Religion	55,168	1.7%
Government	41,605	1.3%
Education	39,396	1.2%
Total	**3,175,942**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	692,517	84.2%
Commercial	89,688	10.9%
Industrial	8,818	1.1%
Agricultural	863	0.1%
Religion	16,351	2.0%
Government	11,160	1.4%
Education	2,695	0.3%
Total	**822,092**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 173 beds. There are 14 schools, 7 fire stations, 10 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Fayette_County
Scenario Name:	10-YR
Return Period Analyzed:	10
Analysis Options Analyzed:	0

General Building Stock Damage

HAZUS estimates that about 285 buildings will be at least moderately damaged. This is over 18% of the total number of buildings in the study case. There are an estimated 104 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	1	50.00	1	50.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	3	1.06	57	20.14	20	7.07	99	34.98	104	36.75
Total	**0**		**4**		**58**		**20**		**99**		**104**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	21	100.00
Masonry	0	0.00	1	1.54	12	18.46	5	7.69	24	36.92	23	35.38
Steel	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	2	1.02	45	22.96	15	7.65	75	38.27	59	30.10

Essential Facility Damage

Before the flood analyzed in this study case, the region had 173 hospital beds available for use. On the day of the scenario flood event, the model estimates that 74 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	7	0	0	0
Hospitals	2	1	0	1
Police Stations	10	0	0	0
Schools	14	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 22,260 tons of debris will be generated. Of the total amount, Finishes comprises 31% of the total, Structure comprises 31% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 890 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 645 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 951 people (out of a total population of 47,579) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 138.84 million dollars, which represents 15.10 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 137.03 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 45.58% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	37.96	18.97	0.49	1.46	58.88
	Content	25.24	46.97	0.92	4.55	77.67
	Inventory	0.00	0.32	0.15	0.01	0.48
	Subtotal	**63.20**	**66.26**	**1.56**	**6.01**	**137.03**
Business Interruption						
	Income	0.00	0.16	0.00	0.01	0.17
	Relocation	0.07	0.09	0.00	0.00	0.16
	Rental Income	0.02	0.02	0.00	0.00	0.03
	Wage	0.00	0.32	0.00	0.20	0.52
	Subtotal	**0.08**	**0.58**	**0.00**	**0.21**	**0.87**
ALL	**Total**	**63.28**	**66.84**	**1.56**	**6.22**	**137.90**

Appendix A: County Listing for the Region

West Virginia

- Fayette

Appendix B: Regional Population and Building Value Data

		Building Value (thousands of dollars)		
	Population	Residential	Non-Residential	Total
West Virginia				
Fayette	47,579	2,621,609	554,333	3,175,942
Total	**47,579**	**2,621,609**	**554,333**	**3,175,942**
Total Study Region	**47,579**	**2,621,609**	**554,333**	**3,175,942**

HAZUS-MH: Flood Event Report

Region Name: Fayette_County

Flood Scenario: 25-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

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Total	**3,175,942**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	707,702	82.1%
Commercial	104,423	12.1%
Industrial	9,138	1.1%
Agricultural	949	0.1%
Religion	17,657	2.0%
Government	16,750	1.9%
Education	5,696	0.7%
Total	**862,315**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 173 beds. There are 14 schools, 7 fire stations, 10 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Fayette_County
Scenario Name:	25-YR
Return Period Analyzed:	25
Analysis Options Analyzed:	0

Building Damage

General Building Stock Damage

HAZUS estimates that about 359 buildings will be at least moderately damaged. This is over 18% of the total number of buildings in the study case. There are an estimated 146 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	1	16.67	2	33.33	1	16.67	0	0.00	1	16.67	1	16.67
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	7	1.98	71	20.06	24	6.78	107	30.23	145	40.96
Total	**1**		**9**		**72**		**24**		**108**		**146**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	26	100.00
Masonry	0	0.00	1	1.30	16	20.78	4	5.19	27	35.06	29	37.66
Steel	1	16.67	2	33.33	1	16.67	0	0.00	1	16.67	1	16.67
Wood	0	0.00	6	2.39	55	21.91	20	7.97	80	31.87	90	35.86

Essential Facility Damage

Before the flood analyzed in this study case, the region had 173 hospital beds available for use. On the day of the scenario flood event, the model estimates that 0 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	7	1	0	1
Hospitals	2	1	0	0
Police Stations	10	1	0	0
Schools	14	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

Analysis has not been performed for this Scenario.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 742 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,119 people (out of a total population of 47,579) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 183.98 million dollars, which represents 20.01 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 181.46 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 41.22% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	46.08	25.59	0.61	2.29	74.56
	Content	29.65	67.72	1.13	7.80	106.30
	Inventory	0.00	0.40	0.18	0.01	0.59
	Subtotal	**75.73**	**93.70**	**1.92**	**10.10**	**181.46**
Business Interruption						
	Income	0.00	0.21	0.00	0.02	0.23
	Relocation	0.09	0.11	0.00	0.00	0.20
	Rental Income	0.02	0.02	0.00	0.00	0.04
	Wage	0.00	0.40	0.00	0.37	0.77
	Subtotal	**0.11**	**0.75**	**0.00**	**0.39**	**1.25**
ALL	**Total**	**75.84**	**94.45**	**1.92**	**10.50**	**182.70**

Appendix A: County Listing for the Region

West Virginia

- Fayette

Appendix B: Regional Population and Building Value Data

		Building Value (thousands of dollars)		
	Population	Residential	Non-Residential	Total
West Virginia				
Fayette	47,579	2,621,609	554,333	3,175,942
Total	**47,579**	**2,621,609**	**554,333**	**3,175,942**
Total Study Region	**47,579**	**2,621,609**	**554,333**	**3,175,942**

HAZUS-MH: Flood Event Report

Region Name: Fayette_County

Flood Scenario: 50-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 664 square miles and contains 2,476 census blocks. There are over 19 thousand households in the region and has a total population of 47,579 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 25,178 buildings in the region with a total building replacement value (excluding contents) of 3,176 million dollars (2006 dollars). Approximately 96.09% of the buildings (and 82.55% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 25,178 buildings in the region which have an aggregate total replacement value of 3,176 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,621,609	82.5%
Commercial	351,478	11.1%
Industrial	61,752	1.9%
Agricultural	4,934	0.2%
Religion	55,168	1.7%
Government	41,605	1.3%
Education	39,396	1.2%
Total	**3,175,942**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	811,864	81.7%
Commercial	108,213	10.9%
Industrial	24,767	2.5%
Agricultural	949	0.1%
Religion	19,832	2.0%
Government	15,317	1.5%
Education	12,659	1.3%
Total	**993,601**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 173 beds. There are 14 schools, 7 fire stations, 10 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Fayette_County
Scenario Name:	50-YR
Return Period Analyzed:	50
Analysis Options Analyzed:	0

General Building Stock Damage

HAZUS estimates that about 430 buildings will be at least moderately damaged. This is over 22% of the total number of buildings in the study case. There are an estimated 162 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	1	11.11	6	66.67	1	11.11	0	0.00	0	0.00	1	11.11
Education	1	00.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	2	00.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	8	1.90	102	24.17	30	7.11	121	28.67	161	38.15
Total	**4**		**14**		**103**		**30**		**121**		**162**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	32	100.00
Masonry	0	0.00	1	1.05	24	25.26	7	7.37	32	33.68	31	32.63
Steel	2	25.00	4	50.00	1	12.50	0	0.00	0	0.00	1	12.50
Wood	0	0.00	9	3.03	78	26.26	23	7.74	89	29.97	98	33.00

Essential Facility Damage

Before the flood analyzed in this study case, the region had 173 hospital beds available for use. On the day of the scenario flood event, the model estimates that 0 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	7	2	0	0
Hospitals	2	1	0	0
Police Stations	10	3	0	0
Schools	14	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

Analysis has not been performed for this Scenario.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 878 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,423 people (out of a total population of 47,579) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 219.48 million dollars, which represents 23.87 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 215.33 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 39.47% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	53.14	29.44	0.78	3.26	86.62
	Content	33.36	79.05	1.41	14.16	127.97
	Inventory	0.00	0.51	0.23	0.01	0.74
	Subtotal	**86.50**	**108.99**	**2.41**	**17.43**	**215.33**
Business Interruption						
	Income	0.00	0.25	0.00	0.03	0.28
	Relocation	0.10	0.12	0.00	0.01	0.23
	Rental Income	0.02	0.03	0.00	0.00	0.05
	Wage	0.00	0.45	0.00	1.49	1.95
	Subtotal	**0.13**	**0.85**	**0.00**	**1.53**	**2.51**
ALL	**Total**	**86.63**	**109.84**	**2.41**	**18.95**	**217.83**

Appendix A: County Listing for the Region

West Virginia

- Fayette

Appendix B: Regional Population and Building Value Data

		Building Value (thousands of dollars)		
	Population	Residential	Non-Residential	Total
West Virginia				
Fayette	47,579	2,621,609	554,333	3,175,942
Total	**47,579**	**2,621,609**	**554,333**	**3,175,942**
Total Study Region	**47,579**	**2,621,609**	**554,333**	**3,175,942**

HAZUS-MH: Flood Event Report

Region Name: Fayette_County

Flood Scenario: 100-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 664 square miles and contains 2,476 census blocks. There are over 19 thousand households in the region and has a total population of 47,579 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 25,178 buildings in the region with a total building replacement value (excluding contents) of 3,176 million dollars (2006 dollars). Approximately 96.09% of the buildings (and 82.55% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 25,178 buildings in the region which have an aggregate total replacement value of 3,176 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,621,609	82.5%
Commercial	351,478	11.1%
Industrial	61,752	1.9%
Agricultural	4,934	0.2%
Religion	55,168	1.7%
Government	41,605	1.3%
Education	39,396	1.2%
Total	**3,175,942**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	817,608	81.8%
Commercial	108,533	10.9%
Industrial	24,896	2.5%
Agricultural	949	0.1%
Religion	19,832	2.0%
Government	15,317	1.5%
Education	12,659	1.3%
Total	**999,794**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 173 beds. There are 14 schools, 7 fire stations, 10 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Fayette_County
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	0

General Building Stock Damage

HAZUS estimates that about 508 buildings will be at least moderately damaged. This is over 23% of the total number of buildings in the study case. There are an estimated 180 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	1	9.09	7	63.64	1	9.09	0	0.00	0	0.00	2	18.18
Education	1	00.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	1	25.00	3	75.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	10	2.02	125	25.30	39	7.89	142	28.74	178	36.03
Total	**3**		**21**		**126**		**39**		**142**		**180**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	1	50.00	0	0.00	0	0.00	0	0.00	1	50.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	37	100.00
Masonry	0	0.00	3	2.61	36	31.30	8	6.96	35	30.43	33	28.70
Steel	2	22.22	6	66.67	0	0.00	0	0.00	0	0.00	1	11.11
Wood	0	0.00	12	3.46	89	25.65	31	8.93	107	30.84	108	31.12

Essential Facility Damage

Before the flood analyzed in this study case, the region had 173 hospital beds available for use. On the day of the scenario flood event, the model estimates that 0 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	7	2	0	0
Hospitals	2	1	0	0
Police Stations	10	3	0	0
Schools	14	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 37,767 tons of debris will be generated. Of the total amount, Finishes comprises 29% of the total, Structure comprises 34% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 1,511 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 982 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,686 people (out of a total population of 47,579) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 242.40 million dollars, which represents 26.36 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 237.89 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 40.33% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	60.43	32.03	0.85	3.70	97.02
	Content	37.17	85.19	1.56	16.05	139.97
	Inventory	0.00	0.62	0.26	0.02	0.90
	Subtotal	**97.60**	**117.84**	**2.67**	**19.77**	**237.89**
Business Interruption						
	Income	0.00	0.28	0.00	0.03	0.31
	Relocation	0.12	0.13	0.00	0.01	0.25
	Rental Income	0.03	0.04	0.00	0.00	0.07
	Wage	0.00	0.49	0.00	1.60	2.08
	Subtotal	**0.15**	**0.93**	**0.00**	**1.64**	**2.71**
ALL	**Total**	**97.75**	**118.77**	**2.67**	**21.41**	**240.60**

Appendix A: County Listing for the Region

West Virginia

- Fayette

Appendix B: Regional Population and Building Value Data

		Building Value (thousands of dollars)		
	Population	Residential	Non-Residential	Total
West Virginia				
Fayette	47,579	2,621,609	554,333	3,175,942
Total	**47,579**	**2,621,609**	**554,333**	**3,175,942**
Total Study Region	**47,579**	**2,621,609**	**554,333**	**3,175,942**

HAZUS-MH: Flood Event Report

Region Name: GreenbrierCounty

Flood Scenario: 10-YR

Print Date: Tuesday, October 20, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 1,021 square miles and contains 1,890 census blocks. The region contains over 15 thousand households and has a total population of 34,453 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 20,386 buildings in the region with a total building replacement value (excluding contents) of 2,684 million dollars (2006 dollars). Approximately 95.00% of the buildings (and 77.36% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 20,386 buildings in the region which have an aggregate total replacement value of 2,684 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,076,553	77.4%
Commercial	401,989	15.0%
Industrial	53,380	2.0%
Agricultural	15,021	0.6%
Religion	50,150	1.9%
Government	26,182	1.0%
Education	61,144	2.3%
Total	**2,684,419**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	1,029,370	76.9%
Commercial	196,982	14.7%
Industrial	24,465	1.8%
Agricultural	6,108	0.5%
Religion	23,254	1.7%
Government	17,668	1.3%
Education	41,359	3.1%
Total	**1,339,206**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 122 beds. There are 15 schools, 9 fire stations, 5 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	GreenbrierCounty
Scenario Name:	10-YR
Return Period Analyzed:	10
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

HAZUS estimates that about 346 buildings will be at least moderately damaged. This is over 30% of the total number of buildings in the scenario. There are an estimated 37 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	13	3.77	159	46.09	46	13.33	90	26.09	37	10.72
Total	**0**		**14**		**159**		**46**		**90**		**37**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	1	4.35	22	95.65
Masonry	0	0.00	1	1.37	40	54.79	9	12.33	20	27.40	3	4.11
Steel	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	12	4.82	119	47.79	37	14.86	69	27.71	12	4.82

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	9	1	0	0
Hospitals	1	0	0	0
Police Stations	5	2	0	0
Schools	15	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 20,042 tons of debris will be generated. Of the total amount, Finishes comprises 41% of the total, Structure comprises 28% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 802 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 826 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,034 people (out of a total population of 34,453) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 131.41 million dollars, which represents 9.66 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 128.69 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 47.49% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	39.14	12.97	1.23	2.71	56.05
	Content	23.17	31.81	2.60	13.58	71.17
	Inventory	0.00	0.90	0.49	0.09	1.48
	Subtotal	**62.31**	**45.68**	**4.33**	**16.38**	**128.69**
Business Interruption						
	Income	0.00	0.21	0.00	0.03	0.25
	Relocation	0.09	0.06	0.00	0.01	0.15
	Rental Income	0.01	0.04	0.00	0.00	0.05
	Wage	0.00	0.23	0.00	0.91	1.14
	Subtotal	**0.10**	**0.54**	**0.00**	**0.94**	**1.59**
ALL	**Total**	**62.41**	**46.22**	**4.33**	**17.32**	**130.28**

Appendix A: County Listing for the Region

West Virginia

- Greenbrier

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Greenbrier	34,453	2,076,553	607,866	2,684,419
Total	**34,453**	**2,076,553**	**607,866**	**2,684,419**
Total Study Region	**34,453**	**2,076,553**	**607,866**	**2,684,419**

HAZUS-MH: Flood Event Report

Region Name: GreenbrierCounty

Flood Scenario: 25-YR

Print Date: Tuesday, October 20, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 1,021 square miles and contains 1,890 census blocks. The region contains over 15 thousand households and has a total population of 34,453 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 20,386 buildings in the region with a total building replacement value (excluding contents) of 2,684 million dollars (2006 dollars). Approximately 95.00% of the buildings (and 77.36% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 20,386 buildings in the region which have an aggregate total replacement value of 2,684 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,076,553	77.4%
Commercial	401,989	15.0%
Industrial	53,380	2.0%
Agricultural	15,021	0.6%
Religion	50,150	1.9%
Government	26,182	1.0%
Education	61,144	2.3%
Total	**2,684,419**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	1,058,379	77.7%
Commercial	189,995	13.9%
Industrial	23,972	1.8%
Agricultural	6,018	0.4%
Religion	23,342	1.7%
Government	17,752	1.3%
Education	43,062	3.2%
Total	**1,362,520**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 122 beds. There are 15 schools, 9 fire stations, 5 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	GreenbrierCounty
Scenario Name:	25-YR
Return Period Analyzed:	25
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

HAZUS estimates that about 452 buildings will be at least moderately damaged. This is over 31% of the total number of buildings in the scenario. There are an estimated 47 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	1	50.00	1	50.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	18	3.99	213	47.23	44	9.76	129	28.60	47	10.42
Total	**1**		**19**		**213**		**44**		**129**		**47**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	27	100.00
Masonry	0	0.00	1	1.03	52	53.61	7	7.22	34	35.05	3	3.09
Steel	1	50.00	1	50.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	17	5.20	161	49.24	37	11.31	95	29.05	17	5.20

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	9	1	0	0
Hospitals	1	0	0	0
Police Stations	5	1	0	0
Schools	15	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 20,629 tons of debris will be generated. Of the total amount, Finishes comprises 44% of the total, Structure comprises 24% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 825 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 968 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,348 people (out of a total population of 34,453) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 130.24 million dollars, which represents 9.57 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 127.93 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 56.05% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	45.68	9.66	1.33	1.79	58.47
	Content	27.18	27.53	2.61	10.73	68.04
	Inventory	0.00	0.86	0.48	0.07	1.42
	Subtotal	**72.86**	**38.05**	**4.42**	**12.59**	**127.93**
Business Interruption						
	Income	0.00	0.20	0.00	0.03	0.23
	Relocation	0.12	0.05	0.00	0.00	0.17
	Rental Income	0.02	0.04	0.00	0.00	0.05
	Wage	0.01	0.23	0.00	0.57	0.81
	Subtotal	**0.14**	**0.52**	**0.00**	**0.60**	**1.26**
ALL	**Total**	**73.00**	**38.57**	**4.42**	**13.20**	**129.18**

Appendix A: County Listing for the Region

West Virginia

- Greenbrier

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Greenbrier	34,453	2,076,553	607,866	2,684,419
Total	**34,453**	**2,076,553**	**607,866**	**2,684,419**
Total Study Region	**34,453**	**2,076,553**	**607,866**	**2,684,419**

HAZUS-MH: Flood Event Report

Region Name: GreenbrierCounty

Flood Scenario: 50-YR

Print Date: Tuesday, October 20, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

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The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

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Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 1,021 square miles and contains 1,890 census blocks. The region contains over 15 thousand households and has a total population of 34,453 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 20,386 buildings in the region with a total building replacement value (excluding contents) of 2,684 million dollars (2006 dollars). Approximately 95.00% of the buildings (and 77.36% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 20,386 buildings in the region which have an aggregate total replacement value of 2,684 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

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Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,076,553	77.4%
Commercial	401,989	15.0%
Industrial	53,380	2.0%
Agricultural	15,021	0.6%
Religion	50,150	1.9%
Government	26,182	1.0%
Education	61,144	2.3%
Total	**2,684,419**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	1,048,512	76.8%
Commercial	197,730	14.5%
Industrial	25,927	1.9%
Agricultural	6,488	0.5%
Religion	25,208	1.8%
Government	18,452	1.4%
Education	43,020	3.2%
Total	**1,365,337**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 122 beds. There are 15 schools, 9 fire stations, 5 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	GreenbrierCounty
Scenario Name:	50-YR
Return Period Analyzed:	50
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

HAZUS estimates that about 496 buildings will be at least moderately damaged. This is over 33% of the total number of buildings in the scenario. There are an estimated 62 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	1	33.33	2	66.67	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	24	4.87	224	45.44	42	8.52	141	28.60	62	12.58
Total	**1**		**27**		**224**		**42**		**141**		**62**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	33	100.00
Masonry	0	0.00	3	2.73	60	54.55	7	6.36	36	32.73	4	3.64
Steel	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	23	6.53	164	46.59	35	9.94	105	29.83	25	7.10

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	9	1	0	0
Hospitals	1	0	0	0
Police Stations	5	1	0	0
Schools	15	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 22,591 tons of debris will be generated. Of the total amount, Finishes comprises 43% of the total, Structure comprises 25% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 904 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 990 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,380 people (out of a total population of 34,453) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 140.63 million dollars, which represents 10.34 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 138.09 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 56.42% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	49.65	10.20	1.55	1.89	63.29
	Content	29.54	29.30	2.99	11.35	73.19
	Inventory	0.00	0.95	0.58	0.09	1.62
	Subtotal	**79.19**	**40.45**	**5.13**	**13.33**	**138.09**
Business Interruption						
	Income	0.00	0.20	0.00	0.03	0.23
	Relocation	0.12	0.06	0.00	0.00	0.18
	Rental Income	0.02	0.04	0.00	0.00	0.06
	Wage	0.01	0.25	0.00	0.70	0.96
	Subtotal	**0.15**	**0.54**	**0.00**	**0.73**	**1.42**
ALL	**Total**	**79.34**	**40.99**	**5.13**	**14.05**	**139.51**

Appendix A: County Listing for the Region

West Virginia

- Greenbrier

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Greenbrier	34,453	2,076,553	607,866	2,684,419
Total	**34,453**	**2,076,553**	**607,866**	**2,684,419**
Total Study Region	**34,453**	**2,076,553**	**607,866**	**2,684,419**

HAZUS-MH: Flood Event Report

Region Name: GreenbrierCounty

Flood Scenario: 100-YR

Print Date: Tuesday, October 20, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 1,021 square miles and contains 1,890 census blocks. The region contains over 15 thousand households and has a total population of 34,453 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 20,386 buildings in the region with a total building replacement value (excluding contents) of 2,684 million dollars (2006 dollars). Approximately 95.00% of the buildings (and 77.36% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 20,386 buildings in the region which have an aggregate total replacement value of 2,684 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,076,553	77.4%
Commercial	401,989	15.0%
Industrial	53,380	2.0%
Agricultural	15,021	0.6%
Religion	50,150	1.9%
Government	26,182	1.0%
Education	61,144	2.3%
Total	**2,684,419**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	1,064,886	77.4%
Commercial	189,468	13.8%
Industrial	25,849	1.9%
Agricultural	6,461	0.5%
Religion	24,330	1.8%
Government	18,716	1.4%
Education	45,894	3.3%
Total	**1,375,604**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 122 beds. There are 15 schools, 9 fire stations, 5 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	GreenbrierCounty
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

HAZUS estimates that about 586 buildings will be at least moderately damaged. This is over 31% of the total number of buildings in the scenario. There are an estimated 85 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	24	4.12	248	42.54	58	9.95	168	28.82	85	14.58
Total	**0**		**27**		**248**		**58**		**168**		**85**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	46	100.00
Masonry	0	0.00	3	2.34	62	48.44	12	9.38	44	34.38	7	5.47
Steel	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	21	5.13	186	45.48	46	11.25	124	30.32	32	7.82

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	9	0	0	0
Hospitals	1	0	0	0
Police Stations	5	1	0	0
Schools	15	2	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 25,436 tons of debris will be generated. Of the total amount, Finishes comprises 43% of the total, Structure comprises 25% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 1,017 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 1,085 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,621 people (out of a total population of 34,453) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 158.33 million dollars, which represents 11.64 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 155.49 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 55.29% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	54.78	11.03	1.84	2.41	70.06
	Content	32.59	33.12	3.44	14.24	83.38
	Inventory	0.00	1.24	0.71	0.10	2.04
	Subtotal	**87.37**	**45.38**	**5.99**	**16.75**	**155.49**
Business Interruption						
	Income	0.01	0.21	0.00	0.03	0.25
	Relocation	0.13	0.07	0.00	0.01	0.21
	Rental Income	0.02	0.05	0.00	0.00	0.07
	Wage	0.01	0.26	0.00	0.79	1.06
	Subtotal	**0.17**	**0.58**	**0.00**	**0.83**	**1.59**
ALL	**Total**	**87.54**	**45.97**	**5.99**	**17.58**	**157.07**

Appendix A: County Listing for the Region

West Virginia

- Greenbrier

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Greenbrier	34,453	2,076,553	607,866	2,684,419
Total	**34,453**	**2,076,553**	**607,866**	**2,684,419**
Total Study Region	**34,453**	**2,076,553**	**607,866**	**2,684,419**

HAZUS-MH: Flood Event Report

Region Name: Nicholas_County

Flood Scenario: 10-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 649 square miles and contains 1,371 census blocks. There are over 11 thousand households in the region and has a total population of 26,562 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 13,649 buildings in the region with a total building replacement value (excluding contents) of 1,713 million dollars (2006 dollars). Approximately 96.20% of the buildings (and 82.41% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 13,649 buildings in the region which have an aggregate total replacement value of 1,713 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	1,411,918	82.4%
Commercial	192,453	11.2%
Industrial	41,703	2.4%
Agricultural	3,252	0.2%
Religion	29,564	1.7%
Government	13,411	0.8%
Education	20,912	1.2%
Total	**1,713,213**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	620,005	89.2%
Commercial	40,675	5.8%
Industrial	13,477	1.9%
Agricultural	562	0.1%
Religion	8,607	1.2%
Government	1,970	0.3%
Education	10,039	1.4%
Total	**695,335**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 143 beds. There are 9 schools, 5 fire stations, 3 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Nicholas_County
Scenario Name:	10-YR
Return Period Analyzed:	10
Analysis Options Analyzed:	0

General Building Stock Damage

HAZUS estimates that about 72 buildings will be at least moderately damaged. This is over 21% of the total number of buildings in the study case. There are an estimated 18 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	1	1.39	22	30.56	6	8.33	25	34.72	18	25.00
Total	**0**		**1**		**22**		**6**		**25**		**18**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	13	100.00
Masonry	0	0.00	0	0.00	4	40.00	1	10.00	4	40.00	1	10.00
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	1	2.04	18	36.73	5	10.20	21	42.86	4	8.16

Essential Facility Damage

Before the flood analyzed in this study case, the region had 572 hospital beds available for use. On the day of the scenario flood event, the model estimates that 0 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	5	0	0	0
Hospitals	2	1	0	1
Police Stations	3	0	0	0
Schools	9	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 6,234 tons of debris will be generated. Of the total amount, Finishes comprises 36% of the total, Structure comprises 28% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 249 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 277 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 287 people (out of a total population of 26,562) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 27.02 million dollars, which represents 3.55 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 26.75 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 78.63% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	12.81	1.04	0.22	0.19	14.26
	Content	8.41	2.56	0.43	0.89	12.29
	Inventory	0.00	0.13	0.08	0.00	0.20
	Subtotal	**21.22**	**3.72**	**0.73**	**1.08**	**26.75**
Business Interruption						
	Income	0.00	0.01	0.00	0.00	0.01
	Relocation	0.02	0.01	0.00	0.00	0.02
	Rental Income	0.00	0.00	0.00	0.00	0.01
	Wage	0.01	0.01	0.00	0.09	0.11
	Subtotal	**0.03**	**0.03**	**0.00**	**0.10**	**0.15**
ALL	**Total**	**21.25**	**3.75**	**0.73**	**1.17**	**26.89**

Appendix A: County Listing for the Region

West Virginia

- Nicholas

Appendix B: Regional Population and Building Value Data

		Building Value (thousands of dollars)		
	Population	Residential	Non-Residential	Total
West Virginia				
Nicholas	26,562	1,411,918	301,295	1,713,213
Total	**26,562**	**1,411,918**	**301,295**	**1,713,213**
Total Study Region	**26,562**	**1,411,918**	**301,295**	**1,713,213**

HAZUS-MH: Flood Event Report

Region Name: Nicholas_County

Flood Scenario: 25-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.

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HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 649 square miles and contains 1,371 census blocks. There are over 11 thousand households in the region and has a total population of 26,562 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 13,649 buildings in the region with a total building replacement value (excluding contents) of 1,713 million dollars (2006 dollars). Approximately 96.20% of the buildings (and 82.41% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 13,649 buildings in the region which have an aggregate total replacement value of 1,713 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	1,411,918	82.4%
Commercial	192,453	11.2%
Industrial	41,703	2.4%
Agricultural	3,252	0.2%
Religion	29,564	1.7%
Government	13,411	0.8%
Education	20,912	1.2%
Total	**1,713,213**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	662,791	87.0%
Commercial	58,116	7.6%
Industrial	14,422	1.9%
Agricultural	562	0.1%
Religion	9,608	1.3%
Government	6,147	0.8%
Education	10,039	1.3%
Total	**761,685**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 143 beds. There are 9 schools, 5 fire stations, 3 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Nicholas_County
Scenario Name:	25-YR
Return Period Analyzed:	25
Analysis Options Analyzed:	0

General Building Stock Damage

HAZUS estimates that about 93 buildings will be at least moderately damaged. This is over 25% of the total number of buildings in the study case. There are an estimated 14 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	3	3.26	37	40.22	9	9.78	29	31.52	14	15.22
Total	**0**		**4**		**37**		**9**		**29**		**14**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	11	100.00
Masonry	0	0.00	0	0.00	7	43.75	3	18.75	6	37.50	0	0.00
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	3	4.62	30	46.15	6	9.23	23	35.38	3	4.62

Essential Facility Damage

Before the flood analyzed in this study case, the region had 572 hospital beds available for use. On the day of the scenario flood event, the model estimates that 0 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	5	0	0	0
Hospitals	2	1	0	1
Police Stations	3	0	0	0
Schools	9	2	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 7,462 tons of debris will be generated. Of the total amount, Finishes comprises 36% of the total, Structure comprises 28% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 298 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 342 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 433 people (out of a total population of 26,562) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 33.04 million dollars, which represents 4.35 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 32.62 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 74.23% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	14.55	1.50	0.32	0.26	16.64
	Content	9.94	3.88	0.65	1.20	15.66
	Inventory	0.00	0.19	0.13	0.00	0.32
	Subtotal	**24.49**	**5.56**	**1.10**	**1.46**	**32.62**
Business Interruption						
	Income	0.00	0.02	0.00	0.01	0.03
	Relocation	0.02	0.01	0.00	0.00	0.03
	Rental Income	0.01	0.01	0.00	0.00	0.01
	Wage	0.01	0.04	0.00	0.11	0.15
	Subtotal	**0.04**	**0.07**	**0.00**	**0.11**	**0.22**
ALL	**Total**	**24.53**	**5.63**	**1.10**	**1.58**	**32.84**

Appendix A: County Listing for the Region

West Virginia

- Nicholas

Appendix B: Regional Population and Building Value Data

		Building Value (thousands of dollars)		
	Population	Residential	Non-Residential	Total
West Virginia				
Nicholas	26,562	1,411,918	301,295	1,713,213
Total	**26,562**	**1,411,918**	**301,295**	**1,713,213**
Total Study Region	**26,562**	**1,411,918**	**301,295**	**1,713,213**

HAZUS-MH: Flood Event Report

Region Name: Nicholas_County

Flood Scenario: 50-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 649 square miles and contains 1,371 census blocks. There are over 11 thousand households in the region and has a total population of 26,562 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 13,649 buildings in the region with a total building replacement value (excluding contents) of 1,713 million dollars (2006 dollars). Approximately 96.20% of the buildings (and 82.41% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 13,649 buildings in the region which have an aggregate total replacement value of 1,713 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	1,411,918	82.4%
Commercial	192,453	11.2%
Industrial	41,703	2.4%
Agricultural	3,252	0.2%
Religion	29,564	1.7%
Government	13,411	0.8%
Education	20,912	1.2%
Total	**1,713,213**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	680,426	87.2%
Commercial	58,428	7.5%
Industrial	14,470	1.9%
Agricultural	562	0.1%
Religion	9,990	1.3%
Government	6,147	0.8%
Education	10,039	1.3%
Total	**780,062**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 143 beds. There are 9 schools, 5 fire stations, 3 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Nicholas_County
Scenario Name:	50-YR
Return Period Analyzed:	50
Analysis Options Analyzed:	0

General Building Stock Damage

HAZUS estimates that about 125 buildings will be at least moderately damaged. This is over 27% of the total number of buildings in the study case. There are an estimated 23 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	4	3.25	50	40.65	9	7.32	37	30.08	23	18.70
Total	**0**		**6**		**50**		**9**		**37**		**23**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	16	100.00
Masonry	0	0.00	1	3.85	11	42.31	3	11.54	10	38.46	1	3.85
Steel	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	4	4.88	39	47.56	6	7.32	27	32.93	6	7.32

Essential Facility Damage

Before the flood analyzed in this study case, the region had 572 hospital beds available for use. On the day of the scenario flood event, the model estimates that 7 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	5	0	0	0
Hospitals	2	1	0	1
Police Stations	3	0	0	0
Schools	9	2	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 9,387 tons of debris will be generated. Of the total amount, Finishes comprises 35% of the total, Structure comprises 28% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 375 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 415 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 584 people (out of a total population of 26,562) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 40.05 million dollars, which represents 5.27 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 39.53 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 75.20% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	17.80	1.75	0.35	0.33	20.23
	Content	12.27	4.45	0.72	1.50	18.95
	Inventory	0.00	0.21	0.15	0.00	0.36
	Subtotal	**30.07**	**6.41**	**1.22**	**1.83**	**39.53**
Business Interruption						
	Income	0.00	0.02	0.00	0.01	0.03
	Relocation	0.03	0.02	0.00	0.00	0.05
	Rental Income	0.01	0.01	0.00	0.00	0.01
	Wage	0.01	0.05	0.00	0.13	0.18
	Subtotal	**0.05**	**0.09**	**0.00**	**0.13**	**0.27**
ALL	**Total**	**30.12**	**6.50**	**1.22**	**1.97**	**39.81**

Appendix A: County Listing for the Region

West Virginia

- Nicholas

Appendix B: Regional Population and Building Value Data

		Building Value (thousands of dollars)		
	Population	Residential	Non-Residential	Total
West Virginia				
Nicholas	26,562	1,411,918	301,295	1,713,213
Total	**26,562**	**1,411,918**	**301,295**	**1,713,213**
Total Study Region	**26,562**	**1,411,918**	**301,295**	**1,713,213**

HAZUS-MH: Flood Event Report

Region Name: Nicholas_County

Flood Scenario: 100-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 649 square miles and contains 1,371 census blocks. There are over 11 thousand households in the region and has a total population of 26,562 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 13,649 buildings in the region with a total building replacement value (excluding contents) of 1,713 million dollars (2006 dollars). Approximately 96.20% of the buildings (and 82.41% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 13,649 buildings in the region which have an aggregate total replacement value of 1,713 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	1,411,918	82.4%
Commercial	192,453	11.2%
Industrial	41,703	2.4%
Agricultural	3,252	0.2%
Religion	29,564	1.7%
Government	13,411	0.8%
Education	20,912	1.2%
Total	**1,713,213**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	680,387	84.6%
Commercial	74,817	9.3%
Industrial	19,524	2.4%
Agricultural	1,124	0.1%
Religion	11,124	1.4%
Government	7,289	0.9%
Education	9,612	1.2%
Total	**803,877**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 143 beds. There are 9 schools, 5 fire stations, 3 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Nicholas_County
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	0

General Building Stock Damage

HAZUS estimates that about 153 buildings will be at least moderately damaged. This is over 31% of the total number of buildings in the study case. There are an estimated 30 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	6	3.97	65	43.05	10	6.62	40	26.49	30	19.87
Total	**0**		**8**		**65**		**10**		**40**		**30**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	21	100.00
Masonry	0	0.00	2	6.25	16	50.00	3	9.38	10	31.25	1	3.13
Steel	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	5	5.05	49	49.49	7	7.07	30	30.30	8	8.08

Essential Facility Damage

Before the flood analyzed in this study case, the region had 572 hospital beds available for use. On the day of the scenario flood event, the model estimates that 0 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	5	0	0	0
Hospitals	2	1	0	1
Police Stations	3	0	0	0
Schools	9	2	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 10,706 tons of debris will be generated. Of the total amount, Finishes comprises 35% of the total, Structure comprises 28% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 428 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 442 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 616 people (out of a total population of 26,562) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 52.36 million dollars, which represents 6.89 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 51.66 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 66.07% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	20.40	2.60	1.88	0.37	25.24
	Content	14.12	6.28	3.71	1.60	25.70
	Inventory	0.00	0.27	0.45	0.00	0.72
	Subtotal	**34.52**	**9.14**	**6.04**	**1.96**	**51.66**
Business Interruption						
	Income	0.01	0.04	0.00	0.01	0.06
	Relocation	0.04	0.02	0.00	0.00	0.06
	Rental Income	0.01	0.01	0.00	0.00	0.02
	Wage	0.02	0.08	0.00	0.13	0.23
	Subtotal	**0.07**	**0.15**	**0.01**	**0.14**	**0.37**
ALL	**Total**	**34.59**	**9.29**	**6.05**	**2.10**	**52.03**

Appendix A: County Listing for the Region

West Virginia

- Nicholas

Appendix B: Regional Population and Building Value Data

		Building Value (thousands of dollars)		
	Population	Residential	Non-Residential	Total
West Virginia				
Nicholas	26,562	1,411,918	301,295	1,713,213
Total	**26,562**	**1,411,918**	**301,295**	**1,713,213**
Total Study Region	**26,562**	**1,411,918**	**301,295**	**1,713,213**

HAZUS-MH: Flood Event Report

Region Name: PocahontasCounty

Flood Scenario: 10-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 940 square miles and contains 1,029 census blocks. The region contains over 4 thousand households and has a total population of 9,131 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 8,579 buildings in the region with a total building replacement value (excluding contents) of 906 million dollars (2006 dollars). Approximately 97.27% of the buildings (and 86.07% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 8,579 buildings in the region which have an aggregate total replacement value of 906 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	779,602	86.1%
Commercial	82,739	9.1%
Industrial	6,877	0.8%
Agricultural	2,622	0.3%
Religion	17,996	2.0%
Government	7,962	0.9%
Education	7,942	0.9%
Total	**905,740**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	394,104	77.8%
Commercial	77,182	15.2%
Industrial	5,079	1.0%
Agricultural	2,001	0.4%
Religion	16,112	3.2%
Government	3,897	0.8%
Education	7,942	1.6%
Total	**506,317**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 27 beds. There are 3 schools, 5 fire stations, 1 police station and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	PocahontasCounty
Scenario Name:	10-YR
Return Period Analyzed:	10
Analysis Options Analyzed:	No What-Ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 226 buildings will be at least moderately damaged. This is over 36% of the total number of buildings in the scenario. There are an estimated 32 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	3	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	3	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	1	0.45	7	3.18	91	41.36	35	15.91	54	24.55	32	14.55
Total	**2**		**14**		**91**		**35**		**54**		**32**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	23	100.00
Masonry	0	0.00	2	4.26	20	42.55	7	14.89	16	34.04	2	4.26
Steel	0	0.00	4	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	7	4.64	71	47.02	28	18.54	38	25.17	7	4.64

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	5	1	0	0
Hospitals	1	0	0	0
Police Stations	1	1	0	0
Schools	3	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 9,720 tons of debris will be generated. Of the total amount, Finishes comprises 45% of the total, Structure comprises 22% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 389 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 337 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 400 people (out of a total population of 9,131) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 59.30 million dollars, which represents 11.38 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 57.71 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 51.97% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	19.19	4.30	0.28	1.04	24.82
	Content	11.56	14.49	0.46	5.87	32.38
	Inventory	0.00	0.38	0.11	0.02	0.51
	Subtotal	**30.75**	**19.17**	**0.86**	**6.93**	**57.71**
Business Interruption						
	Income	0.00	0.08	0.00	0.03	0.11
	Relocation	0.04	0.03	0.00	0.00	0.07
	Rental Income	0.01	0.02	0.00	0.00	0.03
	Wage	0.01	0.10	0.00	0.40	0.51
	Subtotal	**0.07**	**0.22**	**0.00**	**0.44**	**0.72**
ALL	**Total**	**30.82**	**19.38**	**0.86**	**7.37**	**58.43**

Appendix A: County Listing for the Region

West Virginia

- Pocahontas

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Pocahontas	9,131	779,602	126,138	905,740
Total	**9,131**	**779,602**	**126,138**	**905,740**
Total Study Region	**9,131**	**779,602**	**126,138**	**905,740**

HAZUS-MH: Flood Event Report

Region Name: PocahontasCounty

Flood Scenario: 25-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 940 square miles and contains 1,029 census blocks. The region contains over 4 thousand households and has a total population of 9,131 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 8,579 buildings in the region with a total building replacement value (excluding contents) of 906 million dollars (2006 dollars). Approximately 97.27% of the buildings (and 86.07% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 8,579 buildings in the region which have an aggregate total replacement value of 906 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	779,602	86.1%
Commercial	82,739	9.1%
Industrial	6,877	0.8%
Agricultural	2,622	0.3%
Religion	17,996	2.0%
Government	7,962	0.9%
Education	7,942	0.9%
Total	**905,740**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	412,934	78.5%
Commercial	77,985	14.8%
Industrial	5,343	1.0%
Agricultural	2,062	0.4%
Religion	16,112	3.1%
Government	3,897	0.7%
Education	7,942	1.5%
Total	**526,275**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 27 beds. There are 3 schools, 5 fire stations, 1 police station and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	PocahontasCounty
Scenario Name:	25-YR
Return Period Analyzed:	25
Analysis Options Analyzed:	No What-Ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 260 buildings will be at least moderately damaged. This is over 23% of the total number of buildings in the scenario. There are an estimated 42 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	1	100.00	0	0.00
Religion	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	7	2.76	84	33.07	55	21.65	66	25.98	42	16.54
Total	**0**		**12**		**84**		**55**		**67**		**42**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	30	100.00
Masonry	0	0.00	1	1.92	18	34.62	13	25.00	17	32.69	3	5.77
Steel	0	0.00	2	66.67	0	0.00	0	0.00	1	33.33	0	0.00
Wood	0	0.00	7	4.05	66	38.15	42	24.28	49	28.32	9	5.20

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	5	1	0	0
Hospitals	1	0	0	0
Police Stations	1	1	0	0
Schools	3	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 11,159 tons of debris will be generated. Of the total amount, Finishes comprises 45% of the total, Structure comprises 22% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 446 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 438 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 565 people (out of a total population of 9,131) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 67.28 million dollars, which represents 12.91 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 65.62 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 53.20% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	22.34	4.93	0.33	1.23	28.82
	Content	13.38	15.73	0.51	6.63	36.25
	Inventory	0.00	0.41	0.12	0.02	0.55
	Subtotal	**35.72**	**21.06**	**0.96**	**7.88**	**65.62**
Business Interruption						
	Income	0.00	0.08	0.00	0.04	0.12
	Relocation	0.05	0.03	0.00	0.00	0.08
	Rental Income	0.01	0.02	0.00	0.00	0.03
	Wage	0.01	0.10	0.00	0.41	0.52
	Subtotal	**0.08**	**0.23**	**0.00**	**0.45**	**0.75**
ALL	**Total**	**35.79**	**21.29**	**0.96**	**8.33**	**66.37**

Appendix A: County Listing for the Region

West Virginia

- Pocahontas

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Pocahontas	9,131	779,602	126,138	905,740
Total	**9,131**	**779,602**	**126,138**	**905,740**
Total Study Region	**9,131**	**779,602**	**126,138**	**905,740**

HAZUS-MH: Flood Event Report

Region Name: PocahontasCounty

Flood Scenario: 50-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 940 square miles and contains 1,029 census blocks. The region contains over 4 thousand households and has a total population of 9,131 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 8,579 buildings in the region with a total building replacement value (excluding contents) of 906 million dollars (2006 dollars). Approximately 97.27% of the buildings (and 86.07% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 8,579 buildings in the region which have an aggregate total replacement value of 906 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	779,602	86.1%
Commercial	82,739	9.1%
Industrial	6,877	0.8%
Agricultural	2,622	0.3%
Religion	17,996	2.0%
Government	7,962	0.9%
Education	7,942	0.9%
Total	**905,740**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	414,540	78.5%
Commercial	78,279	14.8%
Industrial	5,343	1.0%
Agricultural	2,062	0.4%
Religion	16,112	3.1%
Government	3,897	0.7%
Education	7,942	1.5%
Total	**528,175**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 27 beds. There are 3 schools, 5 fire stations, 1 police station and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	PocahontasCounty
Scenario Name:	50-YR
Return Period Analyzed:	50
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

HAZUS estimates that about 277 buildings will be at least moderately damaged. This is over 25% of the total number of buildings in the scenario. There are an estimated 56 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	4	80.00	1	20.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	3	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	6	2.24	92	34.33	37	13.81	77	28.73	56	20.90
Total	**0**		**14**		**93**		**37**		**77**		**56**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	39	100.00
Masonry	0	0.00	2	3.77	22	41.51	8	15.09	18	33.96	3	5.66
Steel	0	0.00	3	75.00	1	25.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	7	3.91	70	39.11	29	16.20	59	32.96	14	7.82

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	5	1	0	0
Hospitals	1	0	0	0
Police Stations	1	1	0	0
Schools	3	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 11,806 tons of debris will be generated. Of the total amount, Finishes comprises 44% of the total, Structure comprises 23% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 472 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 440 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 594 people (out of a total population of 9,131) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 70.64 million dollars, which represents 13.56 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 68.91 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 53.52% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	23.64	5.04	0.31	1.39	30.39
	Content	14.09	15.98	0.49	7.41	37.98
	Inventory	0.00	0.41	0.12	0.03	0.55
	Subtotal	**37.73**	**21.43**	**0.93**	**8.83**	**68.91**
Business Interruption						
	Income	0.00	0.08	0.00	0.04	0.13
	Relocation	0.05	0.03	0.00	0.00	0.08
	Rental Income	0.01	0.02	0.00	0.00	0.03
	Wage	0.01	0.11	0.00	0.42	0.54
	Subtotal	**0.08**	**0.23**	**0.00**	**0.47**	**0.78**
ALL	**Total**	**37.81**	**21.66**	**0.93**	**9.29**	**69.69**

Appendix A: County Listing for the Region

West Virginia

- Pocahontas

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Pocahontas	9,131	779,602	126,138	905,740
Total	**9,131**	**779,602**	**126,138**	**905,740**
Total Study Region	**9,131**	**779,602**	**126,138**	**905,740**

HAZUS-MH: Flood Event Report

Region Name: PocahontasCounty

Flood Scenario: 100-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

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The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

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There are an estimated 8,579 buildings in the region with a total building replacement value (excluding contents) of 906 million dollars (2006 dollars). Approximately 97.27% of the buildings (and 86.07% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 8,579 buildings in the region which have an aggregate total replacement value of 906 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	779,602	86.1%
Commercial	82,739	9.1%
Industrial	6,877	0.8%
Agricultural	2,622	0.3%
Religion	17,996	2.0%
Government	7,962	0.9%
Education	7,942	0.9%
Total	**905,740**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	409,832	78.3%
Commercial	78,279	15.0%
Industrial	5,343	1.0%
Agricultural	2,062	0.4%
Religion	16,112	3.1%
Government	3,897	0.7%
Education	7,942	1.5%
Total	**523,467**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 27 beds. There are 3 schools, 5 fire stations, 1 police station and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	PocahontasCounty
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

HAZUS estimates that about 304 buildings will be at least moderately damaged. This is over 23% of the total number of buildings in the scenario. There are an estimated 72 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	3	50.00	3	50.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	6	2.03	86	29.05	34	11.49	98	33.11	72	24.32
Total	**0**		**11**		**89**		**34**		**98**		**72**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	44	100.00
Masonry	0	0.00	1	1.72	20	34.48	7	12.07	24	41.38	6	10.34
Steel	0	0.00	2	66.67	1	33.33	0	0.00	0	0.00	0	0.00
Wood	0	0.00	5	2.56	67	34.36	27	13.85	74	37.95	22	11.28

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	5	1	0	0
Hospitals	1	0	0	0
Police Stations	1	1	0	0
Schools	3	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 13,036 tons of debris will be generated. Of the total amount, Finishes comprises 43% of the total, Structure comprises 24% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 521 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 456 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 615 people (out of a total population of 9,131) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 76.54 million dollars, which represents 14.69 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 74.76 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 54.36% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	25.97	5.77	0.36	1.52	33.62
	Content	15.55	16.92	0.55	7.53	40.55
	Inventory	0.00	0.43	0.13	0.03	0.59
	Subtotal	**41.52**	**23.13**	**1.04**	**9.08**	**74.76**
Business Interruption						
	Income	0.00	0.09	0.00	0.04	0.13
	Relocation	0.06	0.03	0.00	0.00	0.09
	Rental Income	0.02	0.02	0.00	0.00	0.03
	Wage	0.01	0.11	0.00	0.43	0.55
	Subtotal	**0.08**	**0.25**	**0.00**	**0.48**	**0.81**
ALL	**Total**	**41.60**	**23.37**	**1.04**	**9.55**	**75.56**

Appendix A: County Listing for the Region

West Virginia

- Pocahontas

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Pocahontas	9,131	779,602	126,138	905,740
Total	**9,131**	**779,602**	**126,138**	**905,740**
Total Study Region	**9,131**	**779,602**	**126,138**	**905,740**

HAZUS-MH: Flood Event Report

Region Name: WebsterCounty

Flood Scenario: 10-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 556 square miles and contains 1,164 census blocks. The region contains over 4 thousand households and has a total population of 9,719 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 6,288 buildings in the region with a total building replacement value (excluding contents) of 543 million dollars (2006 dollars). Approximately 96.91% of the buildings (and 84.89% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 6,288 buildings in the region which have an aggregate total replacement value of 543 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	461,035	84.9%
Commercial	44,886	8.3%
Industrial	12,740	2.3%
Agricultural	64	0.0%
Religion	10,517	1.9%
Government	6,744	1.2%
Education	7,090	1.3%
Total	**543,076**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	248,191	88.2%
Commercial	15,757	5.6%
Industrial	6,487	2.3%
Agricultural	0	0.0%
Religion	3,860	1.4%
Government	5,535	2.0%
Education	1,497	0.5%
Total	**281,327**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 15 beds. There are 2 schools, 1 fire station, 2 police stations and 1 emergency operation center.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	WebsterCounty
Scenario Name:	10-YR
Return Period Analyzed:	10
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

HAZUS estimates that about 105 buildings will be at least moderately damaged. This is over 21% of the total number of buildings in the scenario. There are an estimated 19 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	1	0.95	31	29.52	7	6.67	47	44.76	19	18.10
Total	**0**		**1**		**31**		**7**		**47**		**19**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	18	100.00
Masonry	0	0.00	0	0.00	5	25.00	1	5.00	14	70.00	0	0.00
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	1	1.49	26	38.81	6	8.96	33	49.25	1	1.49

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	1	0	0	0
Hospitals	1	0	0	0
Police Stations	2	0	0	0
Schools	2	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 7,835 tons of debris will be generated. Of the total amount, Finishes comprises 34% of the total, Structure comprises 29% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 313 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 264 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 296 people (out of a total population of 9,719) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 27.94 million dollars, which represents 9.01 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 27.72 million dollars. 0% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 74.81% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	13.19	1.39	0.27	0.16	15.00
	Content	7.68	3.19	0.68	0.91	12.46
	Inventory	0.00	0.08	0.18	0.00	0.26
	Subtotal	**20.87**	**4.66**	**1.12**	**1.07**	**27.72**
Business Interruption						
	Income	0.00	0.02	0.00	0.00	0.02
	Relocation	0.03	0.00	0.00	0.00	0.03
	Rental Income	0.00	0.00	0.00	0.00	0.00
	Wage	0.00	0.02	0.00	0.05	0.08
	Subtotal	**0.03**	**0.05**	**0.00**	**0.05**	**0.13**
ALL	**Total**	**20.90**	**4.71**	**1.12**	**1.13**	**27.85**

Appendix A: County Listing for the Region

West Virginia

- Webster

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Webster	9,719	461,035	82,041	543,076
Total	**9,719**	**461,035**	**82,041**	**543,076**
Total Study Region	**9,719**	**461,035**	**82,041**	**543,076**

HAZUS-MH: Flood Event Report

Region Name: WebsterCounty

Flood Scenario: 25-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 556 square miles and contains 1,164 census blocks. The region contains over 4 thousand households and has a total population of 9,719 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 6,288 buildings in the region with a total building replacement value (excluding contents) of 543 million dollars (2006 dollars). Approximately 96.91% of the buildings (and 84.89% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 6,288 buildings in the region which have an aggregate total replacement value of 543 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	461,035	84.9%
Commercial	44,886	8.3%
Industrial	12,740	2.3%
Agricultural	64	0.0%
Religion	10,517	1.9%
Government	6,744	1.2%
Education	7,090	1.3%
Total	**543,076**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	275,501	87.7%
Commercial	18,379	5.8%
Industrial	7,513	2.4%
Agricultural	0	0.0%
Religion	4,582	1.5%
Government	5,535	1.8%
Education	2,797	0.9%
Total	**314,307**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 15 beds. There are 2 schools, 1 fire station, 2 police stations and 1 emergency operation center.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	WebsterCounty
Scenario Name:	25-YR
Return Period Analyzed:	25
Analysis Options Analyzed:	No What-Ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 134 buildings will be at least moderately damaged. This is over 23% of the total number of buildings in the scenario. There are an estimated 27 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	2	1.49	41	30.60	9	6.72	55	41.04	27	20.15
Total	**0**		**2**		**41**		**9**		**55**		**27**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	21	100.00
Masonry	0	0.00	0	0.00	8	32.00	1	4.00	16	64.00	0	0.00
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	2	2.27	33	37.50	8	9.09	39	44.32	6	6.82

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	1	0	0	0
Hospitals	1	0	0	0
Police Stations	2	0	0	0
Schools	2	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 9,657 tons of debris will be generated. Of the total amount, Finishes comprises 33% of the total, Structure comprises 29% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 386 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 311 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 361 people (out of a total population of 9,719) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 35.99 million dollars, which represents 11.61 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 35.60 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 69.52% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	15.81	1.90	0.34	0.40	18.45
	Content	9.18	4.41	0.87	2.32	16.78
	Inventory	0.00	0.15	0.22	0.00	0.37
	Subtotal	**24.99**	**6.46**	**1.43**	**2.72**	**35.60**
Business Interruption						
	Income	0.00	0.02	0.00	0.01	0.03
	Relocation	0.03	0.00	0.00	0.00	0.03
	Rental Income	0.00	0.00	0.00	0.00	0.01
	Wage	0.00	0.03	0.00	0.13	0.16
	Subtotal	**0.03**	**0.06**	**0.00**	**0.13**	**0.22**
ALL	**Total**	**25.02**	**6.52**	**1.43**	**2.85**	**35.82**

Appendix A: County Listing for the Region

West Virginia

- Webster

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Webster	9,719	461,035	82,041	543,076
Total	**9,719**	**461,035**	**82,041**	**543,076**
Total Study Region	**9,719**	**461,035**	**82,041**	**543,076**

HAZUS-MH: Flood Event Report

Region Name: WebsterCounty

Flood Scenario: 50-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 556 square miles and contains 1,164 census blocks. The region contains over 4 thousand households and has a total population of 9,719 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 6,288 buildings in the region with a total building replacement value (excluding contents) of 543 million dollars (2006 dollars). Approximately 96.91% of the buildings (and 84.89% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 6,288 buildings in the region which have an aggregate total replacement value of 543 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	461,035	84.9%
Commercial	44,886	8.3%
Industrial	12,740	2.3%
Agricultural	64	0.0%
Religion	10,517	1.9%
Government	6,744	1.2%
Education	7,090	1.3%
Total	**543,076**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	273,292	85.4%
Commercial	25,846	8.1%
Industrial	7,888	2.5%
Agricultural	0	0.0%
Religion	4,582	1.4%
Government	5,535	1.7%
Education	2,797	0.9%
Total	**319,940**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 15 beds. There are 2 schools, 1 fire station, 2 police stations and 1 emergency operation center.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	WebsterCounty
Scenario Name:	50-YR
Return Period Analyzed:	50
Analysis Options Analyzed:	No What-Ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 136 buildings will be at least moderately damaged. This is over 27% of the total number of buildings in the scenario. There are an estimated 24 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	4	2.94	45	33.09	10	7.35	53	38.97	24	17.65
Total	**0**		**4**		**45**		**10**		**53**		**24**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	17	100.00
Masonry	0	0.00	1	3.70	10	37.04	1	3.70	15	55.56	0	0.00
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	3	3.26	35	38.04	9	9.78	38	41.30	7	7.61

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	1	0	0	0
Hospitals	1	0	0	0
Police Stations	2	0	0	0
Schools	2	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 9,912 tons of debris will be generated. Of the total amount, Finishes comprises 33% of the total, Structure comprises 30% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 396 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 322 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 391 people (out of a total population of 9,719) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 36.96 million dollars, which represents 11.92 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 36.53 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 68.75% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	16.05	2.01	0.35	0.45	18.86
	Content	9.33	4.62	0.89	2.46	17.29
	Inventory	0.00	0.15	0.23	0.00	0.38
	Subtotal	**25.38**	**6.79**	**1.47**	**2.90**	**36.53**
Business Interruption						
	Income	0.00	0.03	0.00	0.01	0.03
	Relocation	0.03	0.00	0.00	0.00	0.03
	Rental Income	0.00	0.00	0.00	0.00	0.01
	Wage	0.00	0.03	0.00	0.14	0.17
	Subtotal	**0.03**	**0.06**	**0.00**	**0.14**	**0.24**
ALL	**Total**	**25.41**	**6.85**	**1.47**	**3.05**	**36.77**

Appendix A: County Listing for the Region

West Virginia

- Webster

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Webster	9,719	461,035	82,041	543,076
Total	**9,719**	**461,035**	**82,041**	**543,076**
Total Study Region	**9,719**	**461,035**	**82,041**	**543,076**

HAZUS-MH: Flood Event Report

Region Name: WebsterCounty

Flood Scenario: 100-YR

Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

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Note:
Appendix A contains a complete listing of the counties contained in the region.

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There are an estimated 6,288 buildings in the region with a total building replacement value (excluding contents) of 543 million dollars (2006 dollars). Approximately 96.91% of the buildings (and 84.89% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 6,288 buildings in the region which have an aggregate total replacement value of 543 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	461,035	84.9%
Commercial	44,886	8.3%
Industrial	12,740	2.3%
Agricultural	64	0.0%
Religion	10,517	1.9%
Government	6,744	1.2%
Education	7,090	1.3%
Total	**543,076**	**100.00%**

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	271,486	83.6%
Commercial	29,960	9.2%
Industrial	7,930	2.4%
Agricultural	0	0.0%
Religion	4,976	1.5%
Government	5,900	1.8%
Education	4,403	1.4%
Total	**324,655**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 15 beds. There are 2 schools, 1 fire station, 2 police stations and 1 emergency operation center.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	WebsterCounty
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 180 buildings will be at least moderately damaged. This is over 31% of the total number of buildings in the scenario. There are an estimated 34 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		Substantially	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	4	2.23	64	35.75	17	9.50	60	33.52	34	18.99
Total	**1**		**5**		**64**		**17**		**60**		**34**	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	25	100.00
Masonry	0	0.00	0	0.00	19	51.35	2	5.41	16	43.24	0	0.00
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	4	3.42	45	38.46	15	12.82	44	37.61	9	7.69

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	1	0	0	0
Hospitals	1	0	0	0
Police Stations	2	0	0	0
Schools	2	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 11,567 tons of debris will be generated. Of the total amount, Finishes comprises 34% of the total, Structure comprises 29% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 463 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 354 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 436 people (out of a total population of 9,719) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 46.15 million dollars, which represents 14.88 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 45.46 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 64.25% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	18.77	2.27	0.44	0.89	22.37
	Content	10.84	5.37	1.05	5.39	22.65
	Inventory	0.00	0.18	0.26	0.00	0.44
	Subtotal	**29.61**	**7.82**	**1.76**	**6.27**	**45.46**
Business Interruption						
	Income	0.00	0.03	0.00	0.02	0.04
	Relocation	0.04	0.01	0.00	0.00	0.04
	Rental Income	0.00	0.00	0.00	0.00	0.01
	Wage	0.00	0.03	0.00	0.18	0.21
	Subtotal	**0.04**	**0.07**	**0.00**	**0.19**	**0.30**
ALL	**Total**	**29.65**	**7.88**	**1.76**	**6.47**	**45.76**

Appendix A: County Listing for the Region

West Virginia

- Webster

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Webster	9,719	461,035	82,041	543,076
Total	**9,719**	**461,035**	**82,041**	**543,076**
Total Study Region	**9,719**	**461,035**	**82,041**	**543,076**

APPENDIX 2

REFERENCE COPIES OF WORKSHEET #3A FOR ALL REGION 4 COUNTIES

FAYETTE COUNTY

Hazard: Dam Failure

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	2,901	13	$1,098,364,846	$142,787,430	13	47,579	6,185	13
Commercial	855	325	38	$344,098,233	$130,757,329	38	5,196	1,974	38
Industrial	22	0	0	$172,355,002	$0	0	2,008	0	0
Agricultural	265	0	0	$2,227,000	$0	0	111	0	0
Religious/Non-Profit	80	6	8	$2,400,000	$192,000	8	4,000	320	8
Government	28	4	13	$55,760,000	$7,248,800	13	2,994	389	13
Education	5	1	20	$24,000,000	$4,800,000	20	1,897	379	20
Utilities	8	3	33	$154,722,717	$51,058,497	33	323	107	33
Total	23,582	3,240	14	$1,853,927,798	$336,844,055	18	64,108	9,355	15

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Drought

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	2,009	9	$1,098,364,846	$32,950,945	3	47,579	1,427	3
Commercial	855	128	15	$344,098,233	$3,440,982	1	5,196	52	1
Industrial	22	0	1	$172,355,002	$1,723,550	1	2,008	20	1
Agricultural	265	265	100	$2,227,000	$2,227,000	100	111	111	100
Religious/Non-Profit	80	3	4	$2,400,000	$96,000	4	4,000	160	4
Government	28	3	11	$55,760,000	$6,133,600	11	2,994	329	11
Education	5	0	0	$24,000,000	$0	0	1,897	0	0
Utilities	8	2	25	$154,722,717	$38,680,679	25	323	81	25
Total	23,582	2,410	10	$1,853,927,798	$85,252,757	5	64,108	2,181	3

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Earthquake

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	0	0	$1,098,364,846	0	0	47,579	0	0
Commercial	855	0	0	$344,098,233	0	0	5,196	0	0
Industrial	22	0	0	$172,355,002	0	0	2,008	0	0
Agricultural	265	0	0	$2,227,000	0	0	111	0	0
Religious/Non-Profit	80	0	0	$2,400,000	0	0	4,000	0	0
Government	28	0	0	$55,760,000	0	0	2,994	0	0
Education	5	0	0	$24,000,000	0	0	1,897	0	0
Utilities	8	0	0	$154,722,717	0	0	323	0	0
Total	23,582	0	0	$1,853,927,798	$0	0	64,108	0	0

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Flooding

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	2,678	12	$1,098,364,846	$131,803,782	12	47,579	5,709	12
Commercial	855	17	2	$344,098,233	$6,881,965	2	5,196	104	2
Industrial	22	2	7	$172,355,002	$12,064,850	7	2,008	141	7
Agricultural	265	0	0	$2,227,000	$0	0	111	0	0
Religious/Non-Profit	80	2	3	$2,400,000	$72,000	3	4,000	120	3
Government	28	0	1	$55,760,000	$557,600	1	2,994	30	1
Education	5	0	1	$24,000,000	$240,000	1	1,897	19	1
Utilities	8	0	5	$154,722,717	$7,736,136	5	323	16	5
Total	23,582	2,700	11	$1,853,927,798	$159,356,332	9	64,108	6,139	10

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Hailstorm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	446	2	$1,098,364,846	$21,967,297	2	47,579	952	2
Commercial	855	26	3	$344,098,233	$10,322,947	3	5,196	156	3
Industrial	22	1	3	$172,355,002	$5,170,650	3	2,008	60	3
Agricultural	265	3	1	$2,227,000	$22,270	1	111	1	1
Religious/Non-Profit	80	1	1	$2,400,000	$24,000	1	4,000	40	1
Government	28	1	5	$55,760,000	$2,788,000	5	2,994	150	5
Education	5	0	9	$24,000,000	$2,160,000	9	1,897	171	9
Utilities	8	1	10	$154,722,717	$15,472,272	10	323	32	10
Total	23,582	479	2	$1,853,927,798	$57,927,436	3	64,108	1,562	2

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Hazmat Incident

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	1,562	7	$1,098,364,846	$76,885,539	7	47,579	3,331	7
Commercial	855	428	50	$344,098,233	$172,049,117	50	5,196	2,598	50
Industrial	22	20	90	$172,355,002	$155,119,502	90	2,008	1,807	90
Agricultural	265	40	15	$2,227,000	$334,050	15	111	17	15
Religious/Non-Profit	80	6	8	$2,400,000	$192,000	8	4,000	320	8
Government	28	8	29	$55,760,000	$16,170,400	29	2,994	868	29
Education	5	1	26	$24,000,000	$6,240,000	26	1,897	493	26
Utilities	8	2	31	$154,722,717	$47,964,042	31	323	100	31
Total	23,582	2,068	9	$1,853,927,798	$474,954,650	26	64,108	9,534	15

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Land Subsidence

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	16,070	72	$1,098,364,846	$790,822,689	72	47,579	34,257	72
Commercial	855	171	20	$344,098,233	$68,819,647	20	5,196	1,039	20
Industrial	22	3	15	$172,355,002	$25,853,250	15	2,008	301	15
Agricultural	265	24	9	$2,227,000	$200,430	9	111	10	9
Religious/Non-Profit	80	53	66	$2,400,000	$1,584,000	66	4,000	2,640	66
Government	28	6	22	$55,760,000	$12,267,200	22	2,994	659	22
Education	5	1	11	$24,000,000	$2,640,000	11	1,897	209	11
Utilities	8	6	80	$154,722,717	$123,778,174	80	323	258	80
Total	23,582	16,334	69	$1,853,927,798	$1,025,965,390	55	64,108	39,373	61

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Terrorism

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	5,133	23	$1,098,364,846	$252,623,915	23	47,579	10,943	23
Commercial	855	462	54	$344,098,233	$185,813,046	54	5,196	2,806	54
Industrial	22	7	31	$172,355,002	$53,430,051	31	2,008	622	31
Agricultural	265	19	7	$2,227,000	$155,890	7	111	8	7
Religious/Non-Profit	80	35	44	$2,400,000	$1,056,000	44	4,000	1,760	44
Government	28	14	49	$55,760,000	$27,322,400	49	2,994	1,467	49
Education	5	2	40	$24,000,000	$9,600,000	40	1,897	759	40
Utilities	8	5	65	$154,722,717	$100,569,766	65	323	210	65
Total	23,582	5,677	24	$1,853,927,798	$630,571,067	34	64,108	18,575	29

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Thunderstorm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	4,464	20	$1,098,364,846	$219,672,969	20	47,579	9,516	20
Commercial	855	573	67	$344,098,233	$230,545,816	67	5,196	3,481	67
Industrial	22	8	35	$172,355,002	$60,324,251	35	2,008	703	35
Agricultural	265	21	8	$2,227,000	$178,160	8	111	9	8
Religious/Non-Profit	80	38	48	$2,400,000	$1,152,000	48	4,000	1,920	48
Government	28	15	53	$55,760,000	$29,552,800	53	2,994	1,587	53
Education	5	2	40	$24,000,000	$9,600,000	40	1,897	759	40
Utilities	8	4	50	$154,722,717	$77,361,359	50	323	162	50
Total	23,582	5,125	22	$1,853,927,798	$628,387,355	34	64,108	18,136	28

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Wildfire

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	15,177	68	$1,098,364,846	$746,888,095	68	47,579	32,354	68
Commercial	855	282	33	$344,098,233	$113,552,417	33	5,196	1,715	33
Industrial	22	5	21	$172,355,002	$36,194,550	21	2,008	422	21
Agricultural	265	244	92	$2,227,000	$2,048,840	92	111	102	92
Religious/Non-Profit	80	42	52	$2,400,000	$1,248,000	52	4,000	2,080	52
Government	28	13	47	$55,760,000	$26,207,200	47	2,994	1,407	47
Education	5	3	60	$24,000,000	$14,400,000	60	1,897	1,138	60
Utilities	8	1	8	$154,722,717	$12,377,817	8	323	26	8
Total	23,582	15,766	67	$1,853,927,798	$952,916,920	51	64,108	39,243	61

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Wind

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	15,623	70	$1,098,364,846	$768,855,392	70	47,579	33,305	70
Commercial	855	556	65	$344,098,233	$223,663,851	65	5,196	3,377	65
Industrial	22	14	62	$172,355,002	$106,860,101	62	2,008	1,245	62
Agricultural	265	66	25	$2,227,000	$556,750	25	111	28	25
Religious/Non-Profit	80	30	37	$2,400,000	$888,000	37	4,000	1,480	37
Government	28	15	53	$55,760,000	$29,552,800	53	2,994	1,587	53
Education	5	2	40	$24,000,000	$9,600,000	40	1,897	759	40
Utilities	8	4	50	$154,722,717	$77,361,359	50	323	162	50
Total	23,582	16,309	69	$1,853,927,798	$1,217,338,253	66	64,108	41,943	65

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Winter Storm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	22,319	17,186	77	$1,098,364,846	$845,740,931	77	47,579	36,636	77
Commercial	855	359	42	$344,098,233	$144,521,258	42	5,196	2,182	42
Industrial	22	10	44	$172,355,002	$75,836,201	44	2,008	884	44
Agricultural	265	40	15	$2,227,000	$334,050	15	111	17	15
Religious/Non-Profit	80	10	12	$2,400,000	$288,000	12	4,000	480	12
Government	28	15	55	$55,760,000	$30,668,000	55	2,994	1,647	55
Education	5	4	80	$24,000,000	$19,200,000	80	1,897	1,518	80
Utilities	8	2	28	$154,722,717	$43,322,361	28	323	90	28
Total	23,582	17,625	75	$1,853,927,798	$1,159,910,801	63	64,108	43,453	68

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

GREENBRIER COUNTY

Hazard: Dam Failure

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	2,395	13	$788,221,500	$102,468,795	13	34,850	4,531	13
Commercial	997	379	38	$245,999,820	$93,479,932	38	6,411	2,436	38
Industrial	48	0	0	$70,285,663	$0	0	1,866	0	0
Agricultural	727	0	0	$100,408,090	$0	0	303	0	0
Religious/Non-Profit	103	8	8	$15,450,000	$1,236,000	8	5,150	412	8
Government	22	3	13	$85,346,876	$11,095,094	13	2,195	285	13
Education	13	3	20	$76,251,448	$15,250,290	20	2,355	471	20
Utilities	12	4	33	$84,020,683	$27,726,825	33	394	130	33
Total	20,347	2,792	14	$1,465,984,080	$251,256,935	17	53,524	8,265	15

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Drought

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	5,528	30	$788,221,500	$236,466,450	30	34,850	10,455	30
Commercial	997	548	55	$245,999,820	$135,299,901	55	6,411	3,526	55
Industrial	48	0	0	$70,285,663	$0	0	1,866	0	0
Agricultural	727	632	87	$100,408,090	$87,355,038	87	303	264	87
Religious/Non-Profit	103	14	14	$15,450,000	$2,163,000	14	5,150	721	14
Government	22	10	45	$85,346,876	$38,406,094	45	2,195	988	45
Education	13	10	76	$76,251,448	$57,951,100	76	2,355	1,790	76
Utilities	12	6	48	$84,020,683	$40,329,928	48	394	189	48
Total	20,347	6,748	33	$1,465,984,080	$597,971,512	41	53,524	17,932	34

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Earthquake

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	0	0	$788,221,500	$0	0	34,850	0	0
Commercial	997	0	0	$245,999,820	$0	0	6,411	0	0
Industrial	48	0	0	$70,285,663	$0	0	1,866	0	0
Agricultural	727	0	0	$100,408,090	$0	0	303	0	0
Religious/Non-Profit	103	0	0	$15,450,000	$0	0	5,150	0	0
Government	22	0	0	$85,346,876	$0	0	2,195	0	0
Education	13	0	0	$76,251,448	$0	0	2,355	0	0
Utilities	12	0	0	$84,020,683	$0	0	394	0	0
Total	20,347	0	0	$1,465,984,080	$0	0	53,524	0	0

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Flooding

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	3,132	17	$788,221,500	$133,997,655	17	34,850	5,925	17
Commercial	997	339	34	$245,999,820	$83,639,939	34	6,411	2,180	34
Industrial	48	4	9	$70,285,663	$6,325,710	9	1,866	168	9
Agricultural	727	73	10	$100,408,090	$10,040,809	10	303	30	10
Religious/Non-Profit	103	15	15	$15,450,000	$2,317,500	15	5,150	773	15
Government	22	6	26	$85,346,876	$22,190,188	26	2,195	571	26
Education	13	3	20	$76,251,448	$15,250,290	20	2,355	471	20
Utilities	12	4	33	$84,020,683	$27,726,825	33	394	130	33
Total	20,347	3,576	18	$1,465,984,080	$301,488,915	21	53,524	10,247	19

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Hailstorm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	11,976	65	$788,221,500	$512,343,975	65	34,850	22,653	65
Commercial	997	698	70	$245,999,820	$172,199,874	70	6,411	4,488	70
Industrial	48	22	45	$70,285,663	$31,628,548	45	1,866	840	45
Agricultural	727	436	60	$100,408,090	$60,244,854	60	303	182	60
Religious/Non-Profit	103	52	50	$15,450,000	$7,725,000	50	5,150	2,575	50
Government	22	15	70	$85,346,876	$59,742,813	70	2,195	1,537	70
Education	13	10	80	$76,251,448	$61,001,158	80	2,355	1,884	80
Utilities	12	9	75	$84,020,683	$63,015,512	75	394	296	75
Total	20,347	13,218	65	$1,465,984,080	$967,901,735	66	53,524	34,453	64

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Hazardous Materials

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	3,685	20	$788,221,500	$157,644,300	20	34,850	6,970	20
Commercial	997	150	15	$245,999,820	$36,899,973	15	6,411	962	15
Industrial	48	4	8	$70,285,663	$5,622,853	8	1,866	149	8
Agricultural	727	145	20	$100,408,090	$20,081,618	20	303	61	20
Religious/Non-Profit	103	19	18	$15,450,000	$2,781,000	18	5,150	927	18
Government	22	4	20	$85,346,876	$17,069,375	20	2,195	439	20
Education	13	5	35	$76,251,448	$26,688,007	35	2,355	824	35
Utilities	12	6	52	$84,020,683	$43,690,755	52	394	205	52
Total	20,347	4,018	20	$1,465,984,080	$310,477,881	21	53,524	10,537	20

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Land Subsidence

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	13,819	75	$788,221,500	$591,166,125	75	34,850	26,138	75
Commercial	997	499	50	$245,999,820	$122,999,910	50	6,411	3,206	50
Industrial	48	24	50	$70,285,663	$35,142,832	50	1,866	933	50
Agricultural	727	436	60	$100,408,090	$60,244,854	60	303	182	60
Religious/Non-Profit	103	77	75	$15,450,000	$11,587,500	75	5,150	3,863	75
Government	22	13	60	$85,346,876	$51,208,126	60	2,195	1,317	60
Education	13	7	50	$76,251,448	$38,125,724	50	2,355	1,178	50
Utilities	12	6	50	$84,020,683	$42,010,342	50	394	197	50
Total	20,347	14,880	73	$1,465,984,080	$952,485,412	65	53,524	37,012	69

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Thunderstorm/Lightning

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	1,106	6	$788,221,500	$47,293,290	6	34,850	2,091	6
Commercial	997	90	9	$245,999,820	$22,139,984	9	6,411	577	9
Industrial	48	2	5	$70,285,663	$3,514,283	5	1,866	93	5
Agricultural	727	73	10	$100,408,090	$10,040,809	10	303	30	10
Religious/Non-Profit	103	8	8	$15,450,000	$1,236,000	8	5,150	412	8
Government	22	1	5	$85,346,876	$4,267,344	5	2,195	110	5
Education	13	1	8	$76,251,448	$6,100,116	8	2,355	188	8
Utilities	12	1	7	$84,020,683	$5,881,448	7	394	28	7
Total	20,347	1,282	6	$1,465,984,080	$100,473,273	7	53,524	3,529	7

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Terrorism

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	6,449	35	$788,221,500	$275,877,525	35	34,850	12,198	35
Commercial	997	648	65	$245,999,820	$159,899,883	65	6,411	4,167	65
Industrial	48	12	25	$70,285,663	$17,571,416	25	1,866	467	25
Agricultural	727	73	10	$100,408,090	$10,040,809	10	303	30	10
Religious/Non-Profit	103	15	15	$15,450,000	$2,317,500	15	5,150	773	15
Government	22	11	50	$85,346,876	$42,673,438	50	2,195	1,098	50
Education	13	6	45	$76,251,448	$34,313,152	45	2,355	1,060	45
Utilities	12	5	40	$84,020,683	$33,608,273	40	394	158	40
Total	20,347	7,219	35	$1,465,984,080	$576,301,996	39	53,524	19,949	37

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Wildfire

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	3,685	20	$788,221,500	$157,644,300	20	34,850	6,970	20
Commercial	997	100	10	$245,999,820	$24,599,982	10	6,411	641	10
Industrial	48	2	5	$70,285,663	$3,514,283	5	1,866	93	5
Agricultural	727	545	75	$100,408,090	$75,306,068	75	303	227	75
Religious/Non-Profit	103	15	15	$15,450,000	$2,317,500	15	5,150	773	15
Government	22	2	10	$85,346,876	$8,534,688	10	2,195	220	10
Education	13	5	35	$76,251,448	$26,688,007	35	2,355	824	35
Utilities	12	4	30	$84,020,683	$25,206,205	30	394	118	30
Total	20,347	4,358	21	$1,465,984,080	$323,811,032	22	53,524	9,866	18

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Wind Storm/Tornado

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	1,843	10	$788,221,500	$78,822,150	10	34,850	3,485	10
Commercial	997	50	5	$245,999,820	$12,299,991	5	6,411	321	5
Industrial	48	4	9	$70,285,663	$6,325,710	9	1,866	168	9
Agricultural	727	44	6	$100,408,090	$6,024,485	6	303	18	6
Religious/Non-Profit	103	7	7	$15,450,000	$1,081,500	7	5,150	361	7
Government	22	2	9	$85,346,876	$7,681,219	9	2,195	198	9
Education	13	1	10	$76,251,448	$7,625,145	10	2,355	236	10
Utilities	12	2	15	$84,020,683	$12,603,102	15	394	59	15
Total	20,347	1,953	10	$1,465,984,080	$132,463,302	9	53,524	4,844	9

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Winter Storm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	18,425	1,474	8	$788,221,500	$63,057,720	8	34,850	2,788	8
Commercial	997	50	5	$245,999,820	$12,299,991	5	6,411	321	5
Industrial	48	2	4	$70,285,663	$2,811,427	4	1,866	75	4
Agricultural	727	51	7	$100,408,090	$7,028,566	7	303	21	7
Religious/Non-Profit	103	15	15	$15,450,000	$2,317,500	15	5,150	773	15
Government	22	2	9	$85,346,876	$7,681,219	9	2,195	198	9
Education	13	1	6	$76,251,448	$4,575,087	6	2,355	141	6
Utilities	12	0	2	$84,020,683	$1,680,414	2	394	8	2
Total	28,221	12417	44	$1,465,984,080	$101,451,923	44	53,524	4,324	44

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

NICHOLAS COUNTY

Hazard: Dam Failure

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	1,671	13	$695,381,040	$90,399,535	13	26,562	3,453	13
Commercial	598	227	38	$289,244,131	$109,912,770	38	3,547	1,348	38
Industrial	16	0	0	$123,335,700	$0	0	2,090	0	0
Agricultural	304	0	0	$89,527,945	$0	0	117	0	0
Religious/Non-Profit	96	8	8	$14,400,000	$1,152,000	8	4,800	384	8
Government	7	1	13	$123,961,770	$16,115,030	13	1,879	244	13
Education	16	3	20	$78,000,000	$15,600,000	20	783	157	20
Utilities	12	4	33	$57,632,739	$19,018,804	33	201	66	33
Total	13,905	1,914	14	$1,471,483,325	$252,198,139	17	39,979	5,652	14

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Drought

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	386	3	$695,381,040	$20,861,431	3	26,562	797	3
Commercial	598	6	1	$289,244,131	$2,892,441	1	3,547	35	1
Industrial	16	0	1	$123,335,700	$1,233,357	1	2,090	21	1
Agricultural	304	304	100	$89,527,945	$89,527,945	100	117	117	100
Religious/Non-Profit	96	4	4	$14,400,000	$576,000	4	4,800	192	4
Government	7	1	11	$123,961,770	$13,635,795	11	1,879	207	11
Education	16	0	0	$78,000,000	$0	0	783	0	0
Utilities	12	3	25	$57,632,739	$14,408,185	25	201	50	25
Total	13,905	703	5	$1,471,483,325	$143,135,154	10	39,979	1,419	4

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Earthquake

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	0	0	$695,381,040	$0	0	26,562	0	0
Commercial	598	0	0	$289,244,131	$0	0	3,547	0	0
Industrial	16	0	0	$123,335,700	$0	0	2,090	0	0
Agricultural	304	0	0	$89,527,945	$0	0	117	0	0
Religious/Non-Profit	96	0	0	$14,400,000	$0	0	4,800	0	0
Government	7	0	0	$123,961,770	$0	0	1,879	0	0
Education	16	0	0	$78,000,000	$0	0	783	0	0
Utilities	12	0	0	$57,632,739	$0	0	201	0	0
Total	13,905	0	0	$1,471,483,325	$0	0	39,979	0	0

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Flooding

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	1,543	12	$695,381,040	$83,445,725	12	26,562	3,187	12
Commercial	598	12	2	$289,244,131	$5,784,883	2	3,547	71	2
Industrial	16	1	7	$123,335,700	$8,633,499	7	2,090	146	7
Agricultural	304	0	0	$89,527,945	$340,000	0	117	0	0
Religious/Non-Profit	96	3	3	$14,400,000	$500,000	3	4,800	144	3
Government	7	0	1	$123,961,770	$1,239,617	1	1,879	19	1
Education	16	0	1	$78,000,000	$13,490,641	1	783	8	1
Utilities	12	1	5	$57,632,739	$3,120,000	5	201	10	5
Total	13,905	1,560	11	$1,471,483,325	$116,554,365	8	39,979	3,585	9

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Hailstorm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	257	2	$695,381,040	$20,668,219	2	26,562	531	2
Commercial	598	18	3	$289,244,131	$8,677,324	3	3,547	106	3
Industrial	16	0	3	$123,335,700	$3,700,071	3	2,090	63	3
Agricultural	304	3	1	$89,527,945	$895,279	1	117	1	1
Religious/Non-Profit	96	1	1	$14,400,000	$195,000	1	4,800	48	1
Government	7	0	5	$123,961,770	$6,198,089	5	1,879	94	5
Education	16	1	9	$78,000,000	$12,141,577	9	783	70	9
Utilities	12	1	10	$57,632,739	$804,480	10	201	20	10
Total	13,905	283	2	$1,471,483,325	$53,280,039	4	39,979	934	2

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Hazardous Materials

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	900	7	$695,381,040	$48,676,673	7	26,562	1,859	7
Commercial	598	299	50	$289,244,131	$144,622,066	50	3,547	1,774	50
Industrial	16	14	90	$123,335,700	$111,002,130	90	2,090	1,881	90
Agricultural	304	46	15	$89,527,945	$13,429,192	15	117	18	15
Religious/Non-Profit	96	8	8	$14,400,000	$1,152,000	8	4,800	384	8
Government	7	2	29	$123,961,770	$35,948,913	29	1,879	545	29
Education	16	4	26	$78,000,000	$20,280,000	26	783	204	26
Utilities	12	4	31	$57,632,739	$17,866,149	31	201	62	31
Total	13,905	1,277	9	$1,471,483,325	$392,977,122	27	39,979	6,726	17

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Land Subsidence

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	9,256	72	$695,381,040	$503,936,000	72	26,562	19,125	72
Commercial	598	120	20	$289,244,131	$57,967,430	20	3,547	709	20
Industrial	16	2	15	$123,335,700	$18,338,252	15	2,090	314	15
Agricultural	304	27	9	$89,527,945	$7,919,047	9	117	11	9
Religious/Non-Profit	96	63	66	$14,400,000	$9,450,000	66	4,800	3,168	66
Government	7	2	22	$123,961,770	$26,811,633	22	1,879	413	22
Education	16	2	11	$78,000,000	$8,564,370	11	783	86	11
Utilities	12	10	80	$57,632,739	$46,089,332	80	201	161	80
Total	13,905	9,482	68	$1,471,483,325	$679,076,064	46	39,979	23,986	60

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Terrorism

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	2,957	23	$695,381,040	$159,937,639	23	26,562	6,109	23
Commercial	598	323	54	$289,244,131	$156,191,831	54	3,547	1,915	54
Industrial	16	5	31	$123,335,700	$38,234,067	31	2,090	648	31
Agricultural	304	21	7	$89,527,945	$6,266,956	7	117	8	7
Religious/Non-Profit	96	42	44	$14,400,000	$6,336,000	44	4,800	2,112	44
Government	7	3	49	$123,961,770	$60,741,267	49	1,879	921	49
Education	16	6	40	$78,000,000	$31,200,000	40	783	313	40
Utilities	12	8	65	$57,632,739	$37,461,280	65	201	131	65
Total	13,905	3,366	24	$1,471,483,325	$496,369,041	34	39,979	12,157	30

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Thunderstorm/Lightning

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	2,571	20	$695,381,040	$139,076,208	20	26,562	5,312	20
Commercial	598	401	67	$289,244,131	$193,793,568	67	3,547	2,376	67
Industrial	16	6	35	$123,335,700	$43,167,495	35	2,090	732	35
Agricultural	304	24	8	$89,527,945	$7,162,236	8	117	9	8
Religious/Non-Profit	96	46	48	$14,400,000	$6,912,000	48	4,800	2,304	48
Government	7	4	53	$123,961,770	$65,699,738	53	1,879	996	53
Education	16	6	40	$78,000,000	$31,200,000	40	783	313	40
Utilities	12	6	50	$57,632,739	$28,816,370	50	201	101	50
Total	13,905	3,064	22	$1,471,483,325	$515,827,614	35	39,979	12,143	30

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Wildfire

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	8,742	68	$695,381,040	$472,859,107	68	26,562	18,062	68
Commercial	598	197	33	$289,244,131	$95,450,563	33	3,547	1,171	33
Industrial	16	3	21	$123,335,700	$25,900,497	21	2,090	439	21
Agricultural	304	280	92	$89,527,945	$82,365,709	92	117	108	92
Religious/Non-Profit	96	50	52	$14,400,000	$7,488,000	52	4,800	2,496	52
Government	7	3	47	$123,961,770	$58,262,032	47	1,879	883	47
Education	16	10	60	$78,000,000	$46,800,000	60	783	470	60
Utilities	12	1	8	$57,632,739	$4,610,619	8	201	16	8
Total	13,905	9,286	67	$1,471,483,325	$793,736,528	54	39,979	23,644	59

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Wind Storm/Tornado

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	8,999	70	$695,381,040	$486,766,728	70	26,562	18,593	70
Commercial	598	389	65	$289,244,131	$188,008,685	65	3,547	2,306	65
Industrial	16	10	62	$123,335,700	$76,468,134	62	2,090	1,296	62
Agricultural	304	76	25	$89,527,945	$22,381,986	25	117	29	25
Religious/Non-Profit	96	36	37	$14,400,000	$5,328,000	37	4,800	1,776	37
Government	7	4	53	$123,961,770	$65,699,738	53	1,879	996	53
Education	16	6	40	$78,000,000	$31,200,000	40	783	313	40
Utilities	12	6	50	$57,632,739	$28,816,370	50	201	101	50
Total	13,905	9,525	69	$1,471,483,325	$904,669,641	61	39,979	25,410	64

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Winter Storm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,856	9,899	77	$695,381,040	$535,443,401	77	26,562	20,453	77
Commercial	598	251	42	$289,244,131	$121,482,535	42	3,547	1,490	42
Industrial	16	7	44	$123,335,700	$54,267,708	44	2,090	920	44
Agricultural	304	46	15	$89,527,945	$13,429,192	15	117	18	15
Religious/Non-Profit	96	12	12	$14,400,000	$1,728,000	12	4,800	576	12
Government	7	4	55	$123,961,770	$68,178,974	55	1,879	1,033	55
Education	16	13	80	$78,000,000	$62,400,000	80	783	626	80
Utilities	12	3	28	$57,632,739	$16,137,167	28	201	56	28
Total	13,905	12417	44	$1,471,483,325	$873,066,976	44	39,979	25,172	44

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

POCAHONTAS COUNTY

Hazard: Dam Failure

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	1,000	13	$503,936,000	$65,511,680	13	8,755	1,138	13
Commercial	262	100	38	$57,967,430	$22,027,623	38	1,814	689	38
Industrial	0	0	0	$18,338,252	$0	0	574	0	0
Agricultural	328	0	0	$7,919,047	$0	0	170	0	0
Religious/Non-Profit	63	5	8	$9,450,000	$756,000	8	3,150	252	8
Government	15	2	13	$26,811,633	$3,485,512	13	839	109	13
Education	5	1	20	$8,564,370	$1,712,874	20	194	39	20
Utilities	6	2	33	$46,089,332	$15,209,480	33	119	39	33
Total	8,553	1,110	13	$679,076,064	$108,703,169	16	15,615	2,267	15

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Drought

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	2,500	32	$503,936,000	$161,259,520	32	8,755	2,802	32
Commercial	262	150	57	$57,967,430	$33,041,435	57	1,814	1,034	57
Industrial	0	0	0	$18,338,252	$0	0	574	0	0
Agricultural	328	300	91	$7,919,047	$7,206,333	91	170	155	91
Religious/Non-Profit	63	10	16	$9,450,000	$1,512,000	16	3,150	504	16
Government	15	7	47	$26,811,633	$12,601,468	47	839	394	47
Education	5	4	80	$8,564,370	$6,851,496	80	194	155	80
Utilities	6	3	50	$46,089,332	$23,044,666	50	119	60	50
Total	8,553	2,974	35	$679,076,064	$245,516,917	36	15,615	5,103	33

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Earthquake

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	0	0	$503,936,000	$0	0	8,755	0	0
Commercial	262	0	0	$57,967,430	$0	0	1,814	0	0
Industrial	0	0	0	$18,338,252	$0	0	574	0	0
Agricultural	328	0	0	$7,919,047	$0	0	170	0	0
Religious/Non-Profit	63	0	0	$9,450,000	$0	0	3,150	0	0
Government	15	0	0	$26,811,633	$0	0	839	0	0
Education	5	0	0	$8,564,370	$0	0	194	0	0
Utilities	6	0	0	$46,089,332	$0	0	119	0	0
Total	8,553	0	0	$679,076,064	$0	0	15,615	0	0

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Flooding

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	1,500	19	$503,936,000	$95,747,840	19	8,755	1,663	19
Commercial	262	100	38	$57,967,430	$22,027,623	38	1,814	689	38
Industrial	0	0	0	$18,338,252	$0	0	574	0	0
Agricultural	328	100	30	$7,919,047	$2,375,714	30	170	51	30
Religious/Non-Profit	63	20	32	$9,450,000	$3,024,000	32	3,150	1,008	32
Government	15	5	33	$26,811,633	$8,847,839	33	839	277	33
Education	5	1	20	$8,564,370	$1,712,874	20	194	39	20
Utilities	6	3	50	$46,089,332	$23,044,666	50	119	60	50
Total	8,553	1,729	20	$679,076,064	$156,780,556	23	15,615	3,787	24

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Hailstorm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	0	0	$503,936,000	$0	0	8,755	0	0
Commercial	262	0	0	$57,967,430	$0	0	1,814	0	0
Industrial	0	0	0	$18,338,252	$0	0	574	0	0
Agricultural	328	0	0	$7,919,047	$0	0	170	0	0
Religious/Non-Profit	63	0	0	$9,450,000	$0	0	3,150	0	0
Government	15	0	0	$26,811,633	$0	0	839	0	0
Education	5	0	0	$8,564,370	$0	0	194	0	0
Utilities	6	0	0	$46,089,332	$0	0	119	0	0
Total	8,553	0	0	$679,076,064	$0	0	15,615	0	0

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Hazardous Materials

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	2,000	25	$503,936,000	$125,984,000	25	8,755	2,189	25
Commercial	262	50	19	$57,967,430	$11,013,812	19	1,814	345	19
Industrial	0	0	0	$18,338,252	$0	0	574	0	0
Agricultural	328	75	23	$7,919,047	$1,821,381	23	170	39	23
Religious/Non-Profit	63	10	16	$9,450,000	$1,512,000	16	3,150	504	16
Government	15	2	13	$26,811,633	$3,485,512	13	839	109	13
Education	5	2	40	$8,564,370	$3,425,748	40	194	78	40
Utilities	6	3	50	$46,089,332	$23,044,666	50	119	60	50
Total	8,553	2,142	25	$679,076,064	$170,287,119	25	15,615	3,323	21

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Land Subsidence

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	7,874	100	$503,936,000	$503,936,000	100	8,755	8,755	100
Commercial	262	262	100	$57,967,430	$57,967,430	100	1,814	1,814	100
Industrial	0	0	0	$18,338,252	$18,338,252	100	574	574	100
Agricultural	328	328	100	$7,919,047	$7,919,047	100	170	170	100
Religious/Non-Profit	63	63	100	$9,450,000	$9,450,000	100	3,150	3,150	100
Government	15	15	100	$26,811,633	$26,811,633	100	839	839	100
Education	5	5	100	$8,564,370	$8,564,370	100	194	194	100
Utilities	6	6	100	$46,089,332	$46,089,332	100	119	119	100
Total	8,553	8,553	100	$679,076,064	$679,076,064	100	15,615	15,615	100

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Terrorism

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	3,000	38	$503,936,000	$191,495,680	38	8,755	3,327	38
Commercial	262	175	67	$57,967,430	$38,838,178	67	1,814	1,215	67
Industrial	0	0	0	$18,338,252	$0	0	574	0	0
Agricultural	328	25	8	$7,919,047	$633,524	8	170	14	8
Religious/Non-Profit	63	30	48	$9,450,000	$4,536,000	48	3,150	1,512	48
Government	15	8	53	$26,811,633	$14,210,165	53	839	445	53
Education	5	2	40	$8,564,370	$3,425,748	40	194	78	40
Utilities	6	3	50	$46,089,332	$23,044,666	50	119	60	50
Total	8,553	3,243	38	$679,076,064	$276,183,961	41	15,615	6,650	43

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Thunderstorm/Lightning

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	7,874	100	$503,936,000	$503,936,000	100	8,755	8,755	100
Commercial	262	262	100	$57,967,430	$57,967,430	100	1,814	1,814	100
Industrial	0	0	0	$18,338,252	$18,338,252	100	574	574	100
Agricultural	328	328	100	$7,919,047	$7,979,047	101	170	170	100
Religious/Non-Profit	63	63	100	$9,450,000	$9,450,000	100	3,150	3,150	100
Government	15	15	100	$26,811,633	$26,811,633	100	839	839	100
Education	5	5	100	$8,564,370	$8,564,370	100	194	194	100
Utilities	6	6	100	$46,089,332	$46,089,332	100	119	119	100
Total	8,553	8,553	100	$679,076,064	$679,136,064	100	15,615	15,615	100

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Wildfire

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	5,354	68	$503,936,000	$342,676,480	68	8,755	5,953	68
Commercial	262	86	33	$57,967,430	$19,129,252	33	1,814	599	33
Industrial	0	0	0	$18,338,252	$0	0	574	0	0
Agricultural	328	302	92	$7,919,047	$7,285,523	92	170	156	92
Religious/Non-Profit	63	33	52	$9,450,000	$4,914,000	52	3,150	1,638	52
Government	15	7	47	$26,811,633	$12,601,468	47	839	394	47
Education	5	3	60	$8,564,370	$5,138,622	60	194	116	60
Utilities	6	3	50	$46,089,332	$23,044,666	50	119	60	50
Total	8,553	5,788	68	$679,076,064	$414,790,011	61	15,615	8,917	57

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Wind Storm/Tornado

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	7,874	100	$503,936,000	$503,936,000	100	8,755	8,755	100
Commercial	262	262	100	$57,967,430	$57,967,430	100	1,814	1,814	100
Industrial	0	0	0	$18,338,252	$18,338,252	100	574	574	100
Agricultural	328	328	100	$7,919,047	$7,979,047	101	170	170	100
Religious/Non-Profit	63	63	100	$9,450,000	$9,450,000	100	3,150	3,150	100
Government	15	15	100	$26,811,633	$26,811,633	100	839	839	100
Education	5	5	100	$8,564,370	$8,564,370	100	194	194	100
Utilities	6	6	100	$46,089,332	$46,089,332	100	119	119	100
Total	8,553	8,553	100	$679,076,064	$679,136,064	100	15,615	15,615	100

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Winter Storm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,874	7,874	100	$503,936,000	$503,936,000	100	8,755	8,755	100
Commercial	262	262	100	$57,967,430	$57,967,430	100	1,814	1,814	100
Industrial	0	0	0	$18,338,252	$18,338,252	100	574	574	100
Agricultural	328	328	100	$7,919,047	$7,979,047	101	170	170	100
Religious/Non-Profit	63	63	100	$9,450,000	$9,450,000	100	3,150	3,150	100
Government	15	15	100	$26,811,633	$26,811,633	100	839	839	100
Education	5	5	100	$8,564,370	$8,564,370	100	194	194	100
Utilities	6	6	100	$46,089,332	$46,089,332	100	119	119	100
Total	8,553	8,553	100	$679,076,064	$679,136,064	100	15,615	15,615	100

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

WEBSTER COUNTY

Hazard: Dam Failure

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	706	13	$154,726,500	$20,114,445	13	9,696	1,260	13
Commercial	163	62	38	$19,283,402	$7,327,693	38	688	261	38
Industrial	181	0	0	$22,338,870	$0	0	795	0	0
Agricultural	110	0	0	$7,876,319	$0	0	23	0	0
Religious/Non-Profit	28	2	8	$4,200,000	$336,000	8	1,400	112	8
Government	9	1	13	$18,400,711	$2,392,092	13	655	85	13
Education	6	1	20	$41,775,000	$8,355,000	20	257	51	20
Utilities	8	3	33	$12,803,748	$4,225,237	33	25	8	33
Total	5,934	775	13	$281,404,550	$42,750,467	15	13,539	1,779	13

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Drought

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	2,443	45	$154,726,500	$69,626,925	45	9,696	4,363	45
Commercial	163	62	38	$19,283,402	$7,327,693	38	688	261	38
Industrial	181	45	25	$22,338,870	$5,584,718	25	795	199	25
Agricultural	110	98	89	$7,876,319	$7,009,924	89	23	20	89
Religious/Non-Profit	28	3	9	$4,200,000	$378,000	9	1,400	126	9
Government	9	1	13	$18,400,711	$2,392,092	13	655	85	13
Education	6	0	2	$41,775,000	$835,500	2	257	5	2
Utilities	8	0	3	$12,803,748	$384,112	3	25	1	3
Total	5,934	2,652	45	$281,404,550	$93,538,965	33	13,539	5,061	37

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Earthquake

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	0	0	$154,726,500	$0	0	9,696	0	0
Commercial	163	0	0	$19,283,402	$0	0	688	0	0
Industrial	181	0	0	$22,338,870	$0	0	795	0	0
Agricultural	110	0	0	$7,876,319	$0	0	23	0	0
Religious/Non-Profit	28	0	0	$4,200,000	$0	0	1,400	0	0
Government	9	0	0	$18,400,711	$0	0	655	0	0
Education	6	0	0	$41,775,000	$0	0	257	0	0
Utilities	8	0	0	$12,803,748	$0	0	25	0	0
Total	5,934	0	0	$281,404,550	$0	0	13,539	0	0

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Flooding

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	1,900	35	$154,726,500	$54,154,275	35	9,696	3,394	35
Commercial	163	77	47	$19,283,402	$9,063,199	47	688	323	47
Industrial	181	18	10	$22,338,870	$2,233,887	10	795	80	10
Agricultural	110	33	30	$7,876,319	$2,362,896	30	23	7	30
Religious/Non-Profit	28	3	9	$4,200,000	$378,000	9	1,400	126	9
Government	9	2	20	$18,400,711	$3,680,142	20	655	131	20
Education	6	1	17	$41,775,000	$7,101,750	17	257	44	17
Utilities	8	2	30	$12,803,748	$3,841,124	30	25	8	30
Total	5,934	2,036	34	$281,404,550	$82,815,274	29	13,539	4,112	30

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Hailstorm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	3,637	67	$154,726,500	$103,666,755	67	9,696	6,496	67
Commercial	163	80	49	$19,283,402	$9,448,867	49	688	337	49
Industrial	181	105	58	$22,338,870	$12,956,545	58	795	105	13
Agricultural	110	13	12	$7,876,319	$945,158	12	23	3	12
Religious/Non-Profit	28	7	24	$4,200,000	$1,008,000	24	1,400	336	24
Government	9	0	3	$18,400,711	$552,021	3	655	20	3
Education	6	0	4	$41,775,000	$1,671,000	4	257	10	4
Utilities	8	0	5	$12,803,748	$640,187	5	25	1	5
Total	5,934	3,843	65	$281,404,550	$130,888,534	47	13,539	7,308	54

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Hazardous Materials

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	760	14	$154,726,500	$21,661,710	14	9,696	1,357	14
Commercial	163	103	63	$19,283,402	$12,148,543	63	688	433	63
Industrial	181	114	63	$22,338,870	$14,073,488	63	795	501	63
Agricultural	110	19	17	$7,876,319	$1,338,974	17	23	4	17
Religious/Non-Profit	28	6	23	$4,200,000	$1,638,000	39	1,400	322	23
Government	9	6	67	$18,400,711	$12,328,476	67	655	439	67
Education	6	3	44	$41,775,000	$18,381,000	44	257	113	44
Utilities	8	2	20	$12,803,748	$2,560,750	20	25	5	20
Total	5,934	1,012	17	$281,404,550	$84,130,942	30	13,539	3,175	23

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Land Subsidence

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	1,357	25	$154,726,500	$38,681,625	25	9,696	2,424	25
Commercial	163	31	19	$19,283,402	$3,663,846	19	688	131	19
Industrial	181	0	0	$22,338,870	$0	0	795	0	0
Agricultural	110	25	23	$7,876,319	$1,811,553	23	23	5	23
Religious/Non-Profit	28	4	16	$4,200,000	$672,000	16	1,400	224	16
Government	9	1	13	$18,400,711	$2,392,092	13	655	85	13
Education	6	2	40	$41,775,000	$16,710,000	40	257	103	40
Utilities	8	4	50	$12,803,748	$6,401,874	50	25	13	50
Total	5,934	1,426	24	$281,404,550	$70,332,991	25	13,539	2,984	22

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Terrorism

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	109	2	$154,726,500	$3,094,530	2	9,696	194	2
Commercial	163	15	9	$19,283,402	$1,735,506	9	688	62	9
Industrial	181	16	9	$22,338,870	$2,010,498	9	795	16	9
Agricultural	110	4	4	$7,876,319	$315,053	4	23	1	4
Religious/Non-Profit	28	4	15	$4,200,000	$630,000	15	1,400	210	15
Government	9	7	75	$18,400,711	$13,800,533	75	655	491	75
Education	6	4	60	$41,775,000	$25,065,000	60	257	154	60
Utilities	8	5	65	$12,803,748	$8,322,436	65	25	16	65
Total	5,934	163	3	$281,404,550	$54,973,556	20	13,539	1,144	8

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Thunderstorm/Lightning

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	3,800	70	$154,726,500	$108,308,550	70	9,696	6,787	70
Commercial	163	73	45	$19,283,402	$8,677,531	45	688	310	45
Industrial	181	46	25	$22,338,870	$5,581,748	25	795	203	25
Agricultural	110	72	65	$7,876,319	$5,119,607	65	23	15	65
Religious/Non-Profit	28	11	40	$4,200,000	$1,680,000	40	1,400	560	40
Government	9	1	15	$18,400,711	$2,760,107	15	655	98	15
Education	6	0	1	$41,775,000	$417,750	1	257	3	1
Utilities	8	1	7	$12,803,748	$896,262	7	25	2	7
Total	5,934	4,004	67	$281,404,550	$133,441,555	47	13,539	7,977	59

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Wildfire

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	3,692	68	$154,726,500	$105,214,020	68	9,696	6,593	68
Commercial	163	54	33	$19,283,402	$6,363,523	33	688	227	33
Industrial	181	0	0	$22,338,870	$0	0	795	0	0
Agricultural	110	101	92	$7,876,319	$7,246,213	92	23	21	92
Religious/Non-Profit	28	15	52	$4,200,000	$2,184,000	52	1,400	728	52
Government	9	4	47	$18,400,711	$8,648,334	47	655	308	47
Education	6	4	60	$41,775,000	$25,065,000	60	257	154	60
Utilities	8	4	50	$12,803,748	$6,401,874	50	25	13	50
Total	5,934	3,873	65	$281,404,550	$161,122,964	57	13,539	8,044	59

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Wind Storm/Tornado

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	3,637	67	$154,726,500	$103,666,755	67	9,696	6,496	67
Commercial	163	80	49	$19,283,402	$9,448,867	49	688	337	49
Industrial	181	105	58	$22,338,870	$12,956,545	58	795	105	13
Agricultural	110	13	12	$7,876,319	$945,158	12	23	3	12
Religious/Non-Profit	28	7	24	$4,200,000	$1,008,000	24	1,400	336	24
Government	9	0	3	$18,400,711	$552,021	3	655	20	3
Education	6	0	4	$41,775,000	$1,671,000	4	257	10	4
Utilities	8	0	5	$12,803,748	$640,187	5	25	1	5
Total	5,934	3,843	65	$281,404,550	$130,888,534	47	13,539	7,308	54

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

Hazard: Winter Storm

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community or State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,429	3,800	70	$154,726,500	$108,308,550	70	9,696	6,787	70
Commercial	163	73	45	$19,283,402	$8,677,531	45	688	310	45
Industrial	181	46	25	$22,338,870	$5,581,748	25	795	203	25
Agricultural	110	72	65	$7,876,319	$5,119,607	65	23	15	65
Religious/Non-Profit	28	11	40	$4,200,000	$1,680,000	40	1,400	560	40
Government	9	1	15	$18,400,711	$2,760,107	15	655	98	15
Education	6	0	1	$41,775,000	$417,750	1	257	3	1
Utilities	8	1	7	$12,803,748	$896,262	7	25	2	7
Total	5,934	4,004	67	$281,404,550	$133,441,555	47	13,539	7,977	59

	Yes	No
1. Do you know where your greatest damages may occur in your hazard areas?	X	
2. Do you know whether your critical facilities will be operational after a hazard event?	X	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	X	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	X	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	X	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	X	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		X

APPENDIX 3

GLOSSARY

APPENDIX 3

This appendix contains a list of definitions for commonly-used terms in this mitigation plan. It also contains a list of the acronyms that are used throughout.

DEFINITION OF TERMS

10-Year Flood: A flood event with a 10% chance of occurring in any single year.

25-Year Flood: A flood event with a 4% chance of occurring in any single year.

50-Year Flood: A flood event with a 2% chance of occurring in any single year.

100-Year Flood: A flood event with a 1% chance of being equaled or exceeded in any single year.

Asset Inventory: A listing of critical facilities, historical facilities, facilities housing vulnerable populations (e.g., schools, nursing homes, hospitals), large economic assets in the community, and other, community-designated special considerations on which a risk assessment is completed.

Benefit Cost Review: A process by which a community considers both the potential benefits of mitigation projects in comparison with their costs. It is a way to determine if the costs are achievable and feasible based on the benefits that can be realistically anticipated.

Emergency Services Project: Action that protects people and property during and immediately after a disaster or hazard event.

Hazard Risk Assessment: The process of measuring the potential loss of life, personal injury, economic injury, and property damage resulting from hazards by assessing the vulnerability of people, buildings, and infrastructure to hazards.

Loss Estimate: A mathematical calculation of the potential damage – structural, contents, and functional – a facility and/or community could occur as a result of a

specific hazard.

Mitigation: Activities providing a critical foundation in the effort to reduce the loss of life and property from natural and/or man-made disasters by avoiding or lessening the impact of a disaster and providing value to the public by creating safer communities. Mitigation seeks to fix the cycle of disaster damage, reconstruction, and repeated damage. These activities or actions, in most cases, will have a long-term sustained effect.

Natural Resource Protection: Action that, in addition to minimizing hazard losses, also preserves or restores the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Prevention: Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

Property Protection: Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

Public Education and Awareness Project: Action to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

Robert T. Stafford Disaster Relief and Emergency Assistance Act: Section 322 was added as part of the Disaster Mitigation Act (DMA) of 2000 to take a new and revitalized approach to mitigation planning. This new section emphasizes the need for local entities to closely coordinate mitigation planning and implementation efforts. In succinct terms, this is the mandate requiring local communities to compile and adopt a mitigation plan as an eligibility requirement for mitigation funding.

STAPLEE Method: A technique for identifying, evaluating, and prioritizing mitigation actions based on existing local conditions. It advocates an analysis based on the following conditions: social, technical, administrative, political, legal, economic, and environmental.

Structural Project: Action that involves the construction of structures to reduce the impact of a hazard.

DEFINITION OF ACRONYMS

AEP	American Electric Power
ARC	American Red Cross
CB	Citizens' Band
CDBG	Community Development Block Grant
CEDS	Comprehensive Economic Development Strategy
CFR	Code of Federal Regulations
CRS	Community Rating System
CVB	Convention and Visitors Bureau
EDA	Economic Development Authority
EMPG	Emergency Management Performance Grant
EOP	Emergency Operations Plan
FEMA	Federal Emergency Management Agency
FCOES	Fayette County Office of Emergency Services
FIRM	Flood Insurance Rate Map
GCEMA	Greenbrier County Emergency Management Agency
GIS	Geographic Information System
HMEP	Hazardous Materials Emergency Planning (Grant)
HMGP	Hazard Mitigation Grant Program
HMP	Hazard Mitigation Plan
HSGP	Homeland Security Grant Program
LEPC	Local Emergency Planning Committee
MOU	Memorandum of Understanding
NCDC	National Climatic Data Center
NCOES	Nicholas County Office of Emergency Services
NFIP	National Flood Insurance Program

NIMS	National Incident Management System
NWS	National Weather Service
PCOEM	Pocahontas County Office of Emergency Management
PDC	Planning and Development Council
PDM	Pre-Disaster Mitigation (Grant)
PDSI	Palmer Drought Severity Index
PGA	Peak Ground Acceleration
POC	Point of Contact
PSD	Public Service District
RL	Repetitive Loss
RMP	Risk Management Plan
SCS	Soil Conservation Service
SERC	State Emergency Response Commission
SFHA	Special Flood Hazard Area
SR	State Route
STAPLEE	Social, Technical, Administrative, Political, Legal, Economic & Environmental
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDHS	United States Department of Homeland Security
USDOT	United States Department of Transportation
USGS	United States Geological Survey
VFD	Volunteer Fire Department
WCOES	Webster County Office of Emergency Services
WCS	Worst-Case Scenario
WFAS	Wildland Fire Assessment System
WVDEP	West Virginia Department of Environmental Protection
WVDHSEM	West Virginia Division of Homeland Security and Emergency Management
WVDNR	West Virginia Division of Natural Resources
WVDOF	West Virginia Division of Forestry
WVDOH	West Virginia Division of Highways
WVIJDC	West Virginia Infrastructure and Jobs Development Council
WVIRP	West Virginia Interoperable Radio Project

WVSFM	West Virginia State Fire Marshal
WVSP	West Virginia State Police

APPENDIX 4

RECORD OF ADOPTION

MEMORANDUM

To: County Emergency Managers
Representing Region 4 PDC Member Governments

From: Region 4 Planning and Development Council

Date: January 31, 2011

Re: Regional Hazard Mitigation Plan

As many of you are aware, the Region 4 Planning and Development Council has been tasked by the West Virginia Division of Homeland Security and Emergency Management (WVDHSEM) to regionalize the hazard mitigation planning process. To accomplish this goal, we procured a consultant who worked with each of you to obtain your latest local version and consolidate them into a single, regional document.

We understand that you recently updated your plans on your own and we also understand that there are concerns regarding project prioritization and implementation if the plan is in a regional format. We worked with the consultant, the WVDHSEM, and the Federal Emergency Management Agency (FEMA) Region III to ensure that your jurisdictional autonomies are retained in this regional document. The document is organized in much the same way as your local plans. Each county and municipal jurisdiction is treated just as they were in the original plan (i.e., a single risk assessment followed by a project list for each participating jurisdiction). This memorandum serves as an outline of the ways in which your local plan was used to derive the regional document.

- **Section 1.2:** Efforts to update local plans were referenced as a means of collecting a significant amount of data for the regional plan.
- **Section 1.3:**
  - Your individual descriptions of your planning areas were generalized and combined. The resulting description identifies all of the participating jurisdictions and describes the region – from a population, infrastructure, etc. perspective – as a whole.
  - Also, your original "Analyzing Development Trends" sections were updated and inserted into this section on a county-by-county basis.

- **Section 2.1:**
  - Your original hazard identification matrices were combined.
  - The asset inventory for each jurisdiction was combined and alphabetized. The address and jurisdiction is noted with each asset.

- **Section 2.2:**
  - Profiles from your original plans were generalized and combined.
  - Mapping was also standardized and combined.
  - Loss estimates from your original plan were combined and added as a part of the profiles.

- **Section 3.1:** Projects were simply re-listed by jurisdiction. The section as a whole was re-formatted.
- **Section 3.2:** Projects were again re-listed by jurisdiction. This section was also re-formatted.
- **Section 3.3:** Projects were re-prioritized based on information provided by the county emergency management offices.
- **Section 4.0:** The process by which you all indicated you would update your plan was the same. As such, this section references the same process.
- **Appendix 2:** Your original Worksheets #3a were included in their entirety for reference. For those of you that analyzed additional hazards on your own, only the hazards included in this plan were included in this appendix.

In summary, we encourage you to continue undertaking mitigation efforts. We will coordinate with you again when this document must be updated. Thank you for your participation and assistance. We look forward to working with you again.

MITIGATION PLAN AVAILABLE FOR REVIEW

The Region 4 Planning and Development Council's Hazard Mitigation Core Planning Committee has recently completed the Region 4 Multi-Jurisdictional Hazard Mitigation Plan.

This plan identifies the hazards to which the region is susceptible as well as a variety of projects that can be undertaken to lessen the effects of those hazards. The document is available for review at the Region 4 Planning and Development Council office at 885 Broad Street, Suite 100 in Summersville from January 26th through February 11th. A form will be provided to document any comments.

The Region 4 Multi-Jurisdictional Hazard Mitigation Plan was developed per federal requirements in Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000. It is an extension of the mitigation plan developed by your home county.

Mon , February 4 - Starts at 7:30 p.m.

The Nicholas Chronicle

Serving the heart of West Virginia since 1880 • Thursday, February 3, 2011

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Richwood High School Improvement Status outlined

The Nicholas County Board of Education was notified last week by the West Virginia Department of Education that Richwood High School has been identified as being a low-performing status school. This status does not indicate that the school was necessarily low performing in 2009-10 but is an average over several years.

Schools are identified in various levels from low-performing to exemplary by the state of West Virginia and in accordance with federal No Child Left Behind regulations. Nicholas County has had schools identified at all levels. School status is determined by dropout rate, attendance, participation in state assessment, and academic levels of language arts and the least intrusive of required federal models.

A positive of the school improvement identification is that it allows the school and county to implement initiatives with funding that otherwise would most likely not be possible for the school. The Nicholas County Board of Education is confident that working with the county administration that Richwood High School will see positive and substantial gains as have been experienced at Cherry River Elementary School.

Winter Wonderland

Man arrested f to dig up grave

A Canvas man was arrested last week on charges, which include trying to dig up a grave.

John Bradley Strader, 36, was initially observed by local residents attempting to dig up a grave in the Garrett Family Cemetery on Fenwick Mountain on Tuesday, Jan. 25, at 4:30 p.m.

Local residents attempted to get Strader to quit digging, but he refused to do so.

When Nicholas County Sheriff's Department deputies arrived at the scene Strader he was still attempting to dig up the grave of Eloise Garrett who died in 1993. He had already uncovered Garrett's vault

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R. HART WOODS

FROM THE HART

How to tell when you're getting old

It's not really difficult to tell when you're getting old. There are just so many signs. One of my least favorite (and I have many) is the person who fairly beams as they ask, "How are you enjoying your golden years?" I'm never sure if they want to know or just gloating because they aren't as old as you are. One that recently hit me hard was mailing a package of cookies to my twin granddaughters at college only to be reminded they're great-granddaughters. Ouch!

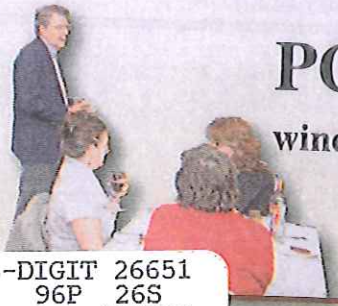
A good, or rather a bad, sign is when you go to the funeral home to see your friends, rather than the hospital to see their new baby. When the first one of your children becomes a grandparent is also a wake-up call or an uncalled for query, "Does all your family get grey early?" That followed closely by the remark about how good you look for your age and they haven't even asked how old you are. And one I really detest is forgetting a story you've been telling halfway through the story.

Chances are your memory isn't the only one of your five senses that is changing. The sense of touch allows you to scratch hard enough to bleed, or poke your eye because your finger "forgot" to bend. Or in handing someone an item, your hand forgets to let go. Your ability to taste food also changes and you're surprised to find yourself eating something that had been on your "don't like list" and likewise your favorite foods often are no longer your favorites. Of course, those food habits are often controlled by your teeth. I had to miss one whole fresh corn season while I "mastered" my top plate.

Other changes that are suddenly a problem, although they've never been before, is your hearing becomes a big concern because everyone you know has taken to whispering. Your bowel habits have become a major problem. You are tired, very tired, and the only zest you

Buckeye Winners 4-H

supports the troops, page 2



PCSPCA

wine bash, page 3

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The Pocahontas Times

ng Pocahontas County in the Endless Mountains of Appalachia

NTON, POCAHONTAS COUNTY, WEST VIRGINIA 24954

FEBRUARY 3, 2011 V

visit us on the web at www.pocahon

igner presents One Room University concep

tt

g minimal cost materials, a "great space" and a mobile pieces in his concept of a One Room versity, designer Jonathan Smith presented the of the project to the Pocahontas County Com- day.

signage at the door of City National Bank, on, to the full-blown university concept, Smith ce of the construction is removable should the lation outgrow the space or the lease with CNB for some reason.

gins at the study carrel level and the only struc- to the space will be adding a door. Smith did hat the university invest in matching chairs and the space a cohesive feel for students and the campus is indeed, real.

carrels for Phase I can serve 20-25 students,

se II, the space gets more physical improve- Phase III, Smith said, "we really at this point oom University, an entire campus."

I, students will need more upper level classes, nator Jay Miller said.

the flow as we expand, we grow into the con- inued.

mmissioner, it's an idea whose time has come. ner Martin Saffer, a proponent of offering ion opportunities locally, said the ORU will r classes to people here, but will also, in the to offer the multi-talented people here to the become teachers at the education facility.

rtant that we understand we're not just doing tly," Saffer said. "We're really going to put a s right in our midst."

e located centrally in one building, but Saffer own of Marlinton can become the campus by c Library for reference materials and the Poc- Opera House for performance space.

experiment to show what can be done in a small community which understands the future is now," Saffer said.

Now that the concept drawings are completed and CNB is ready to begin lease negotiations, more of the project development can move forward.

"A lot of things are moving on parallel tracks," Miller said.

The carpenter shop at New River Community and Technical College can begin to build the study carrels, live tests of an existing course can take place and more.

"It's becoming real," Miller said. "We've had inquiries from other parts of state government. It has the smell of success because peo-

see Plan pg 10

THE FINAL PHASE of the One Room University encompasses all of City National Bank's second floor and will have the capability of serving about 200 students. At right, the entrance of ORU will not compete with CNB's signage. *Graphics courtesy Jonathan Smith.*

WORK WANTED - Looking for odd jobs. Please call 304-653-4360, leave message. 1/27/4p

COMPUTERS-R-US - Problems? We can help. Home or business. Call Christine Rebinski - 304-456-3244, or Terry Gett - 304-456-4353.

MITIGATION PLAN AVAILABLE FOR REVIEW

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WEBSTER ECHO

groundhog day february 2

VOLUME 130 NO. 3, FEBRUARY 2, 2011 USPS 671-080 POSTMASTER: Send Address Changes to 219 Back Fork St., Webster Springs, WV 26288

Craigsville man is arrested for Cowen burglary

Police have arrested Matthew J. Tuskan, 28, of Craigsville, and charged him along with Brett Alan Lowery of Cowen, and Marc Alderman of Craigsville with nighttime burglary. Tuskan is also charged with breaking and entering, two counts of

2010, incident in which the three allegedly entered the garage and home of Diane Carpenter located on John Goff Road in Cowen and stole property from both the garage and home.

Magistrate Judge Rich Robertson placed Tuskan on $175,000 bond. He is

Recent snowfall is pretty but causes problems in county

cited definition is no longer in the Code.

House Bill 2521 would provide for immediate publication of a domestic violence incident instead of requesting service by mail in domestic violence cases.

House Bill 2556 would reset the expiration date until 2014, for provisions that allow the employment of retired teachers as substitutes beyond the post-retirement employment limit in areas of critical need and shortage.

A Sampling of Bills Introduced In the House

House Bill 2693 would require insurance coverage for autism spectrum disorders and ensure any limitation to coverage does not conflict with the Patient Protection and Affordable Care Act.

House Bill 2714 would create the West Virginia Addictions Treatment and Recovery Fund, monies would come from five cents per ounce of the uniform price of alcoholic liquors sold in this state.

House Bill 2768 would provide a personal income tax exemption for living organ donors. This bill would allow a person who, while living, donates one or more human organ to another human being for transplantation is exempt from all personal income tax in the taxable year in which the transplant occurs. A "human organ" means all or part of a liver, pancreas, kidney, intestine, lung or bone marrow.

House Bill 2794 would require that when a controlled substance is dispensed by mail or delivery service, the person accepting the delivery of the controlled substance must be 18 years of age or older, present government issued identification and must sign a receipt indicating acceptance of the controlled substance.

Any questions, please contact me at talbott@frontiernet.net

Webster County Health Department February Food Schools

The Webster County Health Department will be holding two Food Schools during the month of February for people needing Food Handler Cards.

The cost of the card is $10.00 and is good for two years. Food School dates are as follows:

Monday, February 7th @ 9:00 a.m. at the W.S. Workforce Building

Monday, February 28 @ 1:00 p.m. at the W.S. Workforce Building

Please call 304-847-5483 for questions

Mitigation Plan available for review

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$457.

Workers with investment come exceeding $3,100 in 2010 not claim the EIC.

Workers raising a "qualify child" in their home in 2010 file either Form 1040 or 1040A must fill out and attach Sche EIC. Workers with children not get the EIC if they file F 1040EZ or do not attach Sche EIC. Married workers must f joint return to get the EIC. W ers who were not raising a "q fying child" in their home in 2 can file any tax form, inclu Form 1040EZ, and do not hav attach Schedule EIC.

Many families who earned than $3,000 and were raising dren in their homes may qualif the Child Tax Credit (CTC) w up to $1,000 for each "qualif child" under the age of 17. M low-wage working families qualify for both the Earned Inc Credit (EIC) and the Child Credit (CTC). The EIC will be l but the CTC still will provide nificant income boost. Despit overlap in eligible families, the important differences in the bility rules for the two credit in the procedure for claiming t

The EIC and CTC refun not count as income in dete ing eligibility for benefits like assistance, Medicaid, stamps, SSI or public hou Some benefits count saving th and CTC as a resource unde tain circumstances.

Raffle winner announced

By Carol Sims

Congratulations to Cunningham, winner of the quil which was sponsored by the L Retreat. The quilt was made by Hart and donated by Janet L also from Cowen. Thank y much ladies for your contrib Proceeds in the amount of $20 greatly benefit the Ladies Ret October.

The Rahall

essage From

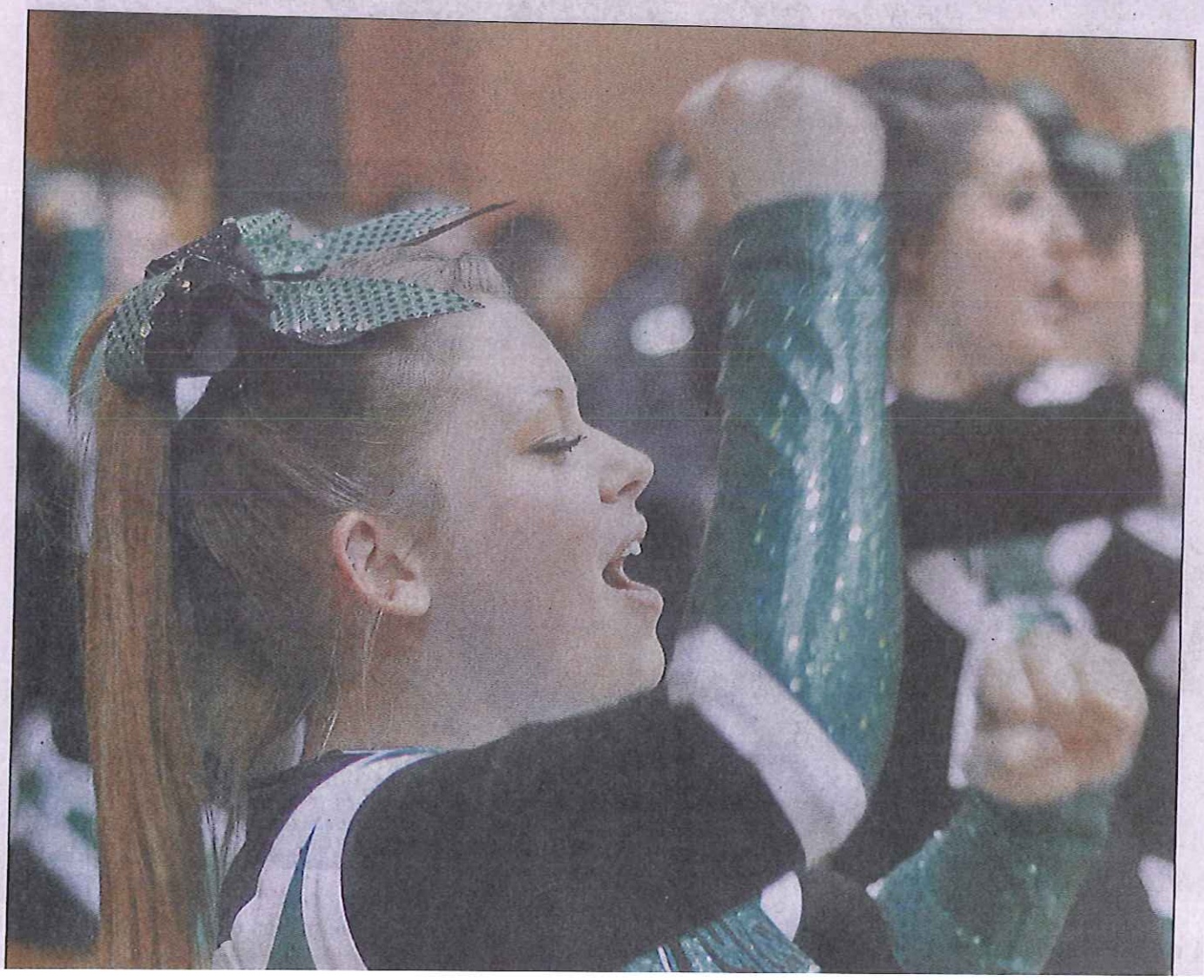
The Fayette Trib

YOUR HOME COUNTY NEWSPAPE

Oak Hill, West Virginia

Monday, February 7, 2011

Encouragement



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hrough tree plantings," Bob Hannah, rban forestry coordinator, said. "I en- ourage
civic organizations, municipalities, usinesses, schools and other groups

forestry.com. For additional information, contact Andy Sheetz, partnership coordinator, at 304-766-2899 or Bob Hannah, urban forestry coordinator, at 304-825-6983.

FAYETTEVILLE

CONTINUED FROM 1

Also brought before the council was he matter of the website in the works or the town of Fayetteville. Fayetville High School students have been vorking on the site for about a year ow.

"We've hit a few bumps in the road vith changes in software and software eing eliminated," Stephanie Woodson, eacher, said. "At this point, we've had o start all over again, but we've gotten he students to the point that they are vorking on the site right now."

Myrissa Grose, a web design stulent, explained the website will inlude pages dedicated to government fficials, news and Fayetteville events, usinesses, along with employment oportunities.

The website is expected to launch ometime this spring.

Postmaster Tonjia Basconi also presented council members with a new stamp in the works. The stamp, which features the New River Gorge Bridge, will be $4.95.

"The community has been involved with this and politicians as well," Basconi said. "It portrays something highly visible in West Virginia so people decided they would like to see something done here."

The first day seal will be issued April 11 during a ceremony at the Visitor's Center at New River Gorge. The time of the event is not yet known.

The other side to this stamp is the fact that it will be a collector's item, Basconi said. This is why businesses, gift shops or anyone who would like to will be able to sell the stamp as a souvenir for a discounted rate.

"We're thinking more like $3.50," she said. "Businesses could make a 50 percent profit off of it. It's a collector's item, and people may see this, think of the bridge and think it would be a nice place to spend on vacation."

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stern Greenbrier And Northern Monroe Counties of West Virginia
, THE WHITE SULPHUR SPRINGS STAR AND THE STAR-INDEPENDENT
eenbrier Valley's Newspaper Since 1866

This Material Can Be Recycled

Vol. 114 No. 22 Tuesday, February 1, 2011

ady For Classic

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Spartans

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chael McCormick is third at 9.3.

If the Spartans are going to win their first round matchup they must contain state player of the year favorite Chase Fischer. Fischer averages 38.8 ppg which leads the state, and has already committed to play basketball next year for Wake Forest of the ACC. Fischer scored 42 points in the first meeting between the two squads.

The boy's game will be directly after the Lady Spartans and the official start time is 9:05 PM.

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turned around and got on F Street, they saw a male subject, Rodney Williams, exit the vehicle and start to run.

Both deputies told Williams to stop several times and ran after the subject. The deputies caught Williams approximately 50 yards from the vehicle.

Both Roy and Williams were transported to Southern Regional Jail, facing misdemeanor and felony charges.

ınnounces Appointments

New River Board of Governors Chair Leslie Baker (l to r) signs the lease agreement between the Greenbrier County Commission and New River Community and Technical College. Looking on are New River President Ted D. Spring and Greenbrier County Commission President Betty Crookshanks.

New River, Commission Sign Pool Lease

New River Community and Technical College has signed a lease with the Greenbrier County Commission giving the county the use of the pool in the former student activities building on the Greenbrier Valley Campus.

The lease was signed by New River President Ted D. Spring, Board

classrooms, allied health labs, fine arts classrooms and laboratories, a café and student work space, took a great deal of time," Spring says that the completion of the building will provide a quality instructional space convenient to students and a wonderful, state-of-the-art aquatic resource for the community.

E. 31.17 feet to a point about 15 feet from the center of State Local Service Route No. 28, a corner to the West Virginia Department of Transportation; thence leaving the road and with the Department of Transportation Tract S 04-48 W. 5.50 feet to a point about 20.5 feet from the center of the road; thence continuing with the Department of Transportation Tract S. 8323 E. 69.30 feet to a fence post; thence N. 89-40 E. 45.55 feet to a 10 inch white oak; thence N. 6658 E. 103.41 feet to a 15 inch hickory; thence N. 55-49 E. 111.83 feet to a 14 inch pin oak; thence N. 7533 E. 97.38 feet to a fence post; thence N. 89-59 E. 63.60 feet to a fence post; thence N. 63-14 E. 153.32 feet to a point about 19 feet southeast of the center of the road; thence N. 27-49 W. 4.00 feet to a point about 15 feet from the center of State Local Service Route No. 28; thence with the southeast side of the road N. 61-36 E. 4.29 feet to a 14 inch white oak a corner to Mary McClung Puckett; thence leaving the road and with the line of Puckett and a wire fence S. 44-02 E. at 185.50 feet passing a fence post on line, in all 186.51 feet to a point on the northern right-of-way line of Interstate Route No.

PUBLISHER'S NOTICE:

All real estate advertising in this newspaper is subject to the Fair Housing Act which makes it illegal to advertise "any preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status or national origin, or an intention, to make any such preference, limitation or discrimination." Familial status includes children under the age of 18 living with parents of legal custodians, pregnant women and people securing custody of children under 18.

This newspaper will not knowingly accept any advertising for real estate which is in violation of the law. Our readers are hereby informed that all dwellings advertised in this newspaper are available on an equal opportunity basis. To complain of discrimination call HUD toll free at 1-800-669-9777. The toll-free telephone number for the hearing impaired is 1-800-927-

to be forwarded on to our sheriff.

MITIGATION PLAN AVAILABLE FOR REVIEW

The Region 4 Planning and Development Council's Hazard Mitigation Core Planning Committee has recently completed the Region 4 Multi-Jurisdiction Hazard Mitigation Plan.

The plan identifies the hazards to which the region is susceptible as well as a variety of projects that can be undertaken to lessen the effect of those hazards. The document is available for review at the Region 4 Planning and Development Council office at 885 Broad Street, Suite 100 in Summersville from February 4th, 2011 through February 18th, 2011. A form will be provided to document any comments.

The Region 4 Multi-Jurisdictional Hazard Mitigation Plan was developed per federal requirements in Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000. It is an extension of the mitigation plan developed by your home county.

ESTATE AUCTION

Saturday, February 5, beginning at 10:00 a.m.

Auction to be held inside in the west wing of Underwood Youth Center at the state fairgrounds of West Virginia in Fairlea. See auction signs at fairgrounds.

Auction to settle the estate of Mary Virginia Wingler, Gary Larue, Executor

FURNITURE - APPLIANCES - TOOLS - HOUSEHOLD

New red recliner, 3 cushion brown couch - new, antique square table, love seat, wicker coffee table/2 chairs, bookshelf, new fireplace insert, small table, 8'X12' rug, microwave stand, antique oak sideboard - excellent condition, like new Whirlpool washer/dryer, Kenmore microwave, nice oak table/6 chairs, oak corner cabinet, curio cabinet, closet with 4 shelves, Kenmore upright freezer, Frigidaire air conditioner, humidifier, Eden Pure heater, full size bed, chest of drawers, large chest of drawers, Porta-Potty, full size bed, end tables, chiforobe, wardrobe, 9 gun cabinet, RCA color TV, rocking chair, kerosene lamp, pictures, 31 day wall clock, toaster, coffee maker, pots/pans, glassware, dishes, punch bowl, brass lamp, field glasses, whatnots, large Craftsman drill set, coffee table, fruit jars, meat slicer, window fans, large crocks, large picnic table, washboard, gun rack, bicycle, roof shingles, roll plastic pipe, wicker love seat, barbeque grill, metal lawn chair, 2 wood stoves, many small items not listed.

TOOLS: Troy Bilt mower - 19" cut - same as new, mowing scythe, bench grinder, mattocks, extension cords, crow bar, Craftsman air compressor, power transfer system, lawn chairs, jig saw, manual grinder, primers, battery charger, Craftsman 4200 generator, tool boxes, small tools, small bench, miter saw, chisels, Black & Decker saw blades, large lawn bench, drill bits, extension ladder, 8' ladder, garage vacuum, flaring tools, Pennzoil motor oil, electric drill, lantern, Sears Craftsman 17" drill press, 6" bench grinder, car jack, gas cans, table saw, Craftsman air compressor, Murray 22" lawnmower, large lawn roller, fertilizer, leaf blower, weed eater, rakes/shovels, Craftsman garage vac, 2 buck saws, large bench vise, bolt cutters, axes, hydraulic jack, wheelbarrow, wheelbarrow planter, weed eater, 6' step ladder, hand saws, levels, Craftsman roto tiller, metal tractor wagon, snow shovel.

GUNS: Marlin 22 automatic, another Marlin 22 automatic, Mossberg 22 automatic, Crossman BB pistol.

Sale conducted for: Mary Virginia Wingler, Gary Larue, Executor

Terms of Sale: Cash or check on sale day (no buyer's premiums)

Baker's Auction Company

Region 4 Hazard Mitigation Plan
Public Comment Form

The Region 4 Hazard Mitigation Plan has been developed as per the requirements of Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. As part of that requirement, members of the public must have an opportunity to review and comment on the document. During the preparation of the plan, member counties held a number of public meetings to allow the public a chance to review the existing county documents and make suggestions regarding improvements. This form is provided to the public to record comments on the updated version of the plan. Following your review of the plan, please use this document to mark any strengths or areas for improvement.

1. List any hazards you feel were not included in the plan but should have been.

_____

_____

1a. Why should these be included?

_____

_____

2. What hazards are in the plan that should be removed?

_____

2a. Why?

_____

3. List any projects you feel should have been included in the plan but were not.

_____

_____

3a. Why?

_____

_____

4. What projects are in the plan that should be removed?

_____

4a. Why?

_____

5. Please list any general comments you have.

_____

_____

_____

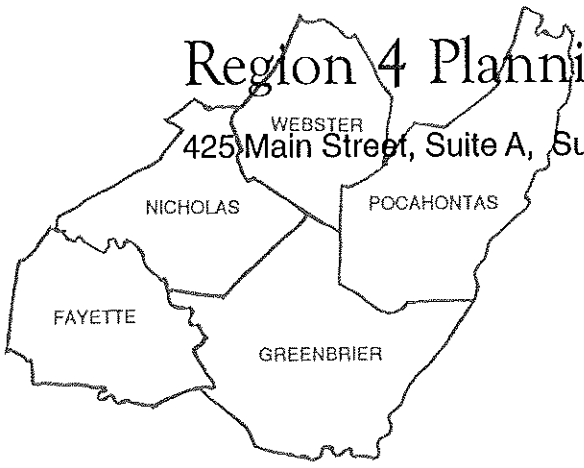
6. In what jurisdiction (i.e., city, town, or unincorporated area) do you live?

_____

THANK YOU for completing this form. If you would like to leave your name and other contact information, you may do so on the back of this sheet.

HAZARD MITIGATION
August 12, 2008

NAME	COMPANY, AGENCY OR ORGANIZATION	TELEPHONE	FAX	E-MAIL
Melvin Martin	Pocahontas County O.E.M. - director	(304) 799-3985		melvinmartin@frontiernet.net
Vickie Martin	" " - Volunteer	"		"
Carla Hennessey	Nicholas Co. OES+E911 Interim Director	(304) 872-7893	872-7874	cdhennessey@yahoo.com
Terri Kiser	Region 4 Planning + Development	304-872-4970		tkiser55@verizon.net
Jeffery Harvey	JH Consulting, LLC	304-473-1009	304-473-1059	jhconsultingllc@verizon.net
Richard Rose	Webster Co. OES/911	847-2122	847-2120	websteroes@citlink.net
W D Smith	Region 4 PDC	(304) 872-4910	(304) 872-1012	[illegible]@verizon.net
Stephen Cruikshank	Fayette County OES	304-673-3234	304-574-3287	fcoessmc@verizon.net
Theresa White	Fayette Co. OES	304-574-3285	" "	twhite@fayettecountywv.org



Region 4 Planning and Development Council

425 Main Street, Suite A, Summersville, West Virginia 26651 (304) 872-4970
Fax: 872-1012

EXECUTIVE COMMITTEE MEETING.
March 19, 2008

The regularly scheduled Executive Committee Meeting of the Region 4 Planning and Development Council was held on Wednesday, March 19, 2008 in the Council's Conference Room in Summersville. The meeting was called to order at 7:00 p.m. by Chairman, Ken Eskew. In attendance were:

Ken Eskew	Commissioner/Fayette County
Reta Griffith	Commissioner/Greenbrier County
Robert Shaffer	Mayor, City of Summersville
Dianna Russell	Private Sector, Fayette County
John Manchester	Mayor, City of Lewisburg
Tom Blankenship	Commissioner, Nicholas County
W. D. Smith	Executive Director/Staff
Alice King	Senior Project Specialist/Staff
Angie Groves	Community Project Specialist/Staff
Donna Norman	Secretary/Staff
Terri Price	Fiscal Manager/Staff

Secretary's Report

The minutes of the September 19, 2007 meeting were briefly reviewed. Robert Shafer made the motion to approve the minutes as presented. Tom Blankenship provided the second, the motion passed.

Treasurer's Report

The Financial Statements for the period ending February 29, 2009 were reviewed. Following brief discussion, Reta Griffith made a motion to approve the statements, Tom Blankenship provided the second, the motion passed.

Staff Reports

Alice King and Angela Groves provided the committee with an update on projects currently under construction.

Director's Report

The Executive provided a brief report on economic development projects throughout the region. He stated that the Nicholas County Building Commission's Glade Creek Business Park was approximately 17% complete and that a Dedication Ceremony would be held on March 28, 2008.

He further noted that the deadline for Small Cities Block Grant applications was July 18, 2008.

Mr. Smith advised the Committee that Region 4 had been contacted by Homeland Security – Hazard Mitigation Division to consolidate and update the local Hazard Mitigation Plans for the 5 counties of Region 4. Reta Griffith, Pocahontas County Commissioner, advised that Pocahontas County had recently contracted with an individual to update their plan. Further information will be forthcoming when available.

The Executive Director mentioned that this was the last year of the 4 year assessment increase that had been enacted in 2005.

The Executive Committee was advised that it is extremely important to follow MBE/WBE guidelines when procuring professional services such as engineers. Several funding agencies such as DWTRF and SRF will not pay for services that are not procured using these guidelines. If you have questions regarding these procedures, please contact Region 4 Staff.

Noted was the fact that the annual CEDS document is due no later than September 30, 2008. A CEDS Committee meeting will be scheduled in the near future. Also noted was the fact that the Project Priority List will need to be updated. This list will be included in the Region 4 Newsletter that will be sent out in April. The Public Service Districts will also be provided a copy of this list. Please advise Region 4 of any changes or additions to the list.

Spring Quarterly Dinner

The Spring Quarterly Dinner was the next item to be discussed. It was decided that the dinner would be held in Pocahontas County. Due to conflicts in scheduling, discussed was the possibility of changing the date of the dinner. Following discussion, it was determined that the dinner would be held on April 23, 2008. Details will be provided when arrangements have been finalized..

Intergovernmental Review

Ten (10) Intergovernmental Reviews were presented for approval. Following discussion, John Manchester made a motion to approve all Intergovernmental Reviews. Dianna Russell this motion and the motion passed.

Adjournment

Having no further business, the meeting adjourned.

Kenneth L. Eskew
Chairman

Reta Griffith
Secretary

FAYETTE COUNTY HAZARD MITIGATION PLAN

Hazard Mitigation Committee Meeting

January 8, 2010 ~ 11:15 a.m. Fayette County Courthouse
Sign In Sheet

	Name	Agency	Contact
1.	Kenneth K. Fisher	FCC	
2.	John W Sapp	FCC	
3.	Matthew Worster	FCC.	
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GREENBRIER COUNTY HAZARD MITIGATION PLAN

Hazard Mitigation Committee Meeting

November 25, 2008 ~ 1 p.m. Lewisburg/County Commission Chambers
Sign In Sheet

	Name	Agency	Contact
1.	WALTER M. LOCKHART	AMERICAN RED CROSS	WALTLOCKHART@HOTMAIL.COM
2.	Melissa Scott	Greenbrier County Planning	Melissa.Scott@greenbriercounty.net
3.	Beth Vance	Gbr. Co EMA	gcema-beth@suddenlinkmail.com
4.	Al Whitaker	Gbr. Co EMA	gcema902@suddenlink.net
5.	Blaine Oborn	City of Ronceverte	boborn@ronceverte.wv.com
6.	John Manchester	City of Lewisburg	jmanchester@lewisburg-wv.com
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GREENBRIER COUNTY HAZARD MITIGATION PLAN

Hazard Mitigation Committee Meeting

December 15, 2008 ~ 1 p.m. Lewisburg/County Commission Chambers
Sign In Sheet

	Name	Agency	Contact
1.	Al Whitaker	Greenbrier Co EMA	
2.	Melissa Scott	Greenbrier Co Planning Commissio-	
3.	Blaine Oborn	City of Ronceverte	
4.	Luther Lewallen	Town of Alderson	
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Special Meeting

November 6, 2008

NCLEPC Sign-in

NAME	Representing	Phone
Carla Hennessey	Nicholas Co OES	872-7893
~~Jimmy~~ Jimmy McClung	NCVSART	742-3146
JD Fagan	NCVS&RT	226-5220
Roseann Berry	Fayette-Nicholas Red Cross	469-4636
Libby Campbell	Fayette-Nicholas Red Cross	640-4394
Tommy ~~He~~ Cole	Columbia Forest Products/Summersville VFD	742-5317
David Cox	Redi-Care Amb.	742-5136
B/R/ ODell	NCommish	846-6792
JAY NOWAK	City of Summersville	872-1920
Mac McClung	Wilderness VFD	872-4462 663-7760
JINX Hinkle	Nich Comm	872-7830
Daniel Shelford	Summersville Hospital	872-8470
Diann Sears	N. Co. HD.	872-5329

NICHOLAS COUNTY HAZARD MITIGATION PLAN

Hazard Mitigation Committee Meeting

December 23, 2008 ~ 10 a.m. Summersville
Sign In Sheet

	Name	Agency	Contact
1.	Roseann Berry	Fayette-Nicholas Red Cross	469-4636
2.	Virgil Berry	" " " "	872-7830
3.	Tony Blankenship	NLC	" "
4.	Jinkie Hinkle	"	
5.	Joan Hudnall	WVDHHR	872-0803
6.	Carla Hennessey	DES/911	872-7892
7.	Nova Dorsey	DES/911	872-7890
8.	Daniel Shelton	SMH	872-8470
9.	Bill Odell	Comm.	846-6792
10.	DW Plumner	NC Sheriff	872-7880
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POCAHONTAS COUNTY HAZARD MITIGATION PLAN

Hazard Mitigation Committee Mtg. #1

Revision #1 to 8/2003 Plan ~ January 17, 2008 ~ 6:30 p.m.
Sign In Sheet

Name

1. [signature]
2. Reta Griffith
3. DEREK ESKEW
4. Monica V. Flemmy
5. [signature]
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POCAHONTAS COUNTY HAZARD MITIGATION PLAN

Hazard Mitigation Committee Mtg. #2

Revision #1 to 8/2003 Plan ~ March 20, 2008 ~ 6:30 p.m.
Sign In Sheet

Name

1. Linda L McCoy, Adm., Poca. Co. H.D.
2. O'Dell E. Tucker USDA FS
3. Cindy Wilfong Poc. Co Health Dept
4. Greg Thomas Snowshoe
5. Melvin Martin OEM
6. Reta Griffith Poca. Co. Commission
7. Heather Niday, WVMR (Radio)
8. Charles Wilfong HYFD
9. Jeff Harvey (JH Consulting)
10. Dirk REL
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POCAHONTAS COUNTY HAZARD MITIGATION PLAN

Hazard Mitigation Planning ~ Public Meeting #1

Revision #1 to 8/2003 Plan ~ August 7, 2008 ~ 7:00 p.m. ~ Marlinton Municipal Bldg.
Sign In Sheet

Name

1. Jeff Harvey - JHC
2. Sharon Sharp - PCSC
3. Vickie Martin
4. Melvin Martin
5. Heather Nida
6. Cindy Wiley
7. Rita J Griffith
8. Monica V. Fleming
9. John Mutscheller
10. David Fleming
11. Madalaine Fleming
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POCAHONTAS COUNTY HAZARD MITIGATION PLAN

Hazard Mitigation Planning ~ Public Meeting #2

Revision #1 to 8/2003 Plan ~ Sept. 9, 2008 ~ 7:00 p.m. ~ Durbin Vol. Fire Department
Sign In Sheet

Name	
1. Reta Griffith	26.
2.	27.
3.	28.
4. Jeff Harvey - JHC	29.
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WEBSTER COUNTY HAZARD MITIGATION PLAN

Hazard Mitigation Committee Mtg.

December 10, 2008 ~ 1:00 p.m.
Sign In Sheet

	Name		
1.	Traci Dean	26.	
2.	Jason Raschka	27.	
3.	Jerry F Hemrick	28.	
4.	Rick Rice	29.	
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Name (Optional): MATT WENGER

Agency (Optional): F.C.C.

To what hazard do you feel Fayette County is *most* vulnerable? Why? ____

WHIPPLE HWY / CARLISLE · WHITE OAK CREEK FLOODING

List one project that you feel would lessen hazard-related loss: _____

DREDGING / RETAINING POND

Name (Optional): John Manchester, mayor

Agency (Optional): city of lewisburg

To what hazard do you feel Greenbrier County is *most* vulnerable? Why? ____

Greenbrier River flooding

List one project that you feel would lessen hazard-related loss: _____

remove stream impediments that are likely to exacerbate flood damage

Name (Optional): Melissa Scott

Agency (Optional): Greenbrier County Planning - Floodplain man

To what hazard do you feel Greenbrier County is *most* vulnerable? Why? ____

Flooding

List one project that you feel would lessen hazard-related loss: Citizen Edu

Name (Optional): Beth Vance

Agency (Optional): Gbr. Co. EMA

To what hazard do you feel Greenbrier County is *most* vulnerable? Why? ____

Flooding

List one project that you feel would lessen hazard-related loss: _____

public Awareness / Readiness

Name (Optional): Al Whitaker

Agency (Optional): Greenbrier Co. EMA

To what hazard do you feel Greenbrier County is *most* vulnerable? Why? ____

Flooding - Past history

List one project that you feel would lessen hazard-related loss: _____

Rivers being cleared out.

Name (Optional): Blaine Oborn

Agency (Optional): City of Ronceverte

To what hazard do you feel Greenbrier County is *most* vulnerable? Why? ____

Flooding, Railroad spills, Drought
Truck spills, Industrial accidents

List one project that you feel would lessen hazard-related loss: _____

Flooding

Name (Optional): Dan Morgan

Agency (Optional): Webster Memorial EMS

To what hazard do you feel Webster County is *most* vulnerable? Why? ____

Winter storm, flooding These having happened & have caused considerable impact & Likely to occur again

List one project that you feel would lessen hazard-related loss: _____

encourage Households to be prepared. Be independent of utilites, med., food for minimum of

Name (Optional): Jason Ruschka

Agency (Optional): Health Dept.

To what hazard do you feel Webster County is *most* vulnerable? Why? ____

Snow storm, because it happens just as frequently as floods, but may last longer

List one project that you feel would lessen hazard-related loss: _____

have every one keep a week's worth of food and water in the home, as well as other emergency supplies

Name (Optional): Richard Rose

Agency (Optional): Webster OES/911

To what hazard do you feel Webster County is *most* vulnerable? Why? ____

Flooding

List one project that you feel would lessen hazard-related loss: _____

Major river bank stabilization projects throughout the county.

Name (Optional): Paul Cool

Agency (Optional): _____

To what hazard do you feel Webster County is *most* vulnerable? Why? ____

Flash Floods caused by Extensive Logging Operations

List one project that you feel would lessen hazard-related loss: _____

Stop herbicide Spraying by DOH + Allegheny Power

Households Hazards Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Greenbrier County hazard mitigation planning process. This questionnaire is designed to help the county and the municipalities of Alderson, Lewisburg, Quinwood, Rainelle, Renick (Falling Springs), Ronceverte, Rupert, and White Sulphur Springs to gauge public perceptions of hazard vulnerability throughout all of Greenbrier County. This information you provide will help reduce vulnerability by guiding local leaders as they prioritize mitigation projects.

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as a flood, wind storm, winter storm?
   - ☐ Drought
   - ☐ Flooding
   - ☐ Hazardous Material Incident
   - ☐ Terrorism
   - ☐ Urban Fire
   - ☒ Wind Storm/Tornado
   - ☐ Earthquake
   - ☐ Hailstorm
   - ☐ Land Subsidence
   - ☒ Thunderstorm/Lightning
   - ☐ Wildfire
   - ☐ Winter Storm

2. How concerned are you personally about the following hazards affecting Greenbrier County? (***Circle the corresponding number for each hazard.***)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	3	4	5
Earthquake	1	2	3	4	5
Flooding	1	2	3	4	5
Hailstorm	1	2	3	4	5
Hazardous Material Incident	1	2	3	4	5
Land Subsidence	1	2	3	4	5
Terrorism	1	2	3	4	5
Thunderstorm/Lightning	1	2	3	4	5
Urban Fire	1	2	3	4	5
Wildfire	1	2	3	4	5
Wind Storm/Tornado	1	2	3	4	5
Winter Storm	1	2	3	4	5

3. Have you ever received information about how to make your family and home safer from emergency situations?
   - ☒ Yes
   - ☐ No

4. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Un-able to Do
A. Attended meetings or received written information on emergency preparedness?	☒	☐	☐	☐
B. Talked with members in your household about what to do in case of an emergency?	☐	☒	☐	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☐	☒	☐	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☐	☐	☐	☐
E. In the last year, has anyone in your household received CPR training?	☐	☐	☒	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☒ Yes — Built AT on an elevation To avoid flooding
   - ☐ No — " A H.O. Policy

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☒ Yes
   - ☐ No

7. How much more money are you willing to spend to better protect your family and home from disasters?
   - ☐ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☐ $1,000 - $2,499
   - ☐ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☐ Nothing
   - ☒ Don't know
   - ☐ Other, please explain: _____

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 79 3/4

9. Gender:
   - ☒ Male
   - ☐ Female

Households Hazards Preparedness Questionnaire

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as a flood, wind storm, winter storm?
   - ☐ Drought
   - ☐ Flooding
   - ☐ Hazardous Material Incident
   - ☐ Terrorism
   - ☐ Urban Fire
   - ☑ Wind Storm/Tornado
   - ☐ Earthquake
   - ☐ Hailstorm
   - ☐ Land Subsidence
   - ☐ Thunderstorm/Lightning
   - ☐ Wildfire
   - ☐ Winter Storm

2. How concerned are you personally about the following hazards affecting Greenbrier County? (Circle the corresponding number for each hazard)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	(3)	4	5
Earthquake	1	2	3	4	(5)
Flooding	(1)	2	3	4	5
Hailstorm	1	2	(3)	4	5
Hazardous Material Incident	1	2	(3)	4	5
Land Subsidence	1	2	3	(4)	5
Terrorism	1	2	3	(4)	5
Thunderstorm/Lightning	1	(2)	3	4	5
Urban Fire	1	2	3	4	(5)
Wildfire	1	2	(3)	4	5
Wind Storm/Tornado	1	(2)	3	4	5
Winter Storm	1	(2)	3	4	5

3. Have you ever received information about how to make your family and home safer from emergency situations?
   - ☑ Yes
   - ☐ No

[redacted]

4. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. (Please check one answer for each preparedness activity.)

In your household, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Unable to Do
A Attended meetings or received written information on emergency preparedness?	☐	☑	☐	☐
B. **Talked with members in your household about what to do in case of an emergency?**	☑	☐	☐	☐
C Developed a household emergency plan in order to decide what everyone would do in the event of an emergency?	☐	☑	☐	☐
D. **Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?**	☐	☐	☑	☐
E In the last year, has anyone in your household received CPR training?	☑	☐	☐	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☑ Yes
   - ☐ No

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☐ Yes
   - ☑ No

7. How much more money are you willing to spend to better protect your family and home from disaster?
   - ☐ $15,000 and above
   - ☐ $12,500 - $14,999
   - ☐ $10,000 - $12,499
   - ☐ $7500 - $9999
   - ☐ $5001 - $7499
   - ☐ Less than $5000
   - ☐ Nothing
   - ☑ Don't know
   - ☐ Other, please explain: _____

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 42

9. Gender
   - ☐ Male
   - ☑ Female

[redacted]

Households Hazards Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Greenbrier County hazard mitigation planning process. This questionnaire is designed to help the county and the municipalities of Alderson, Lewisburg, Quinwood, Rainelle, Renick (Falling Springs), Ronceverte, Rupert, and White Sulphur Springs to gauge public perceptions of hazard vulnerability throughout all of Greenbrier County. This information you provide will help reduce vulnerability by guiding local leaders as they prioritize mitigation projects.

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as a flood, wind storm, winter storm? NO
   - □ Drought
   - □ Flooding
   - □ Hazardous Material Incident
   - □ Terrorism
   - □ Urban Fire
   - □ Wind Storm/Tornado
   - □ Earthquake
   - □ Hailstorm
   - □ Land Subsidence
   - □ Thunderstorm/Lightning
   - □ Wildfire
   - □ Winter Storm

2. How concerned are you personally about the following hazards affecting Greenbrier County? (***Circle the corresponding number for each hazard.***)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	3	4	5
Earthquake	1	2	3	4	5
Flooding	1	2	3	4	5
Hailstorm	1	2	3	4	5
Hazardous Material Incident	1	2	3	4	5
Land Subsidence	1	2	3	4	5
Terrorism	1	2	3	4	5
Thunderstorm/Lightning	1	2	3	4	5
Urban Fire	1	2	3	4	5
Wildfire	1	2	3	4	5
Wind Storm/Tornado	1	2	3	4	5
Winter Storm	1	2	3	4	5

3. Have you ever received information about how to make your family and home safer from emergency situations?
   - ☑ Yes
   - □ No

4. In the following list, please check those activities that you <u>have done</u> in your household, <u>plan to do</u> in the near future, <u>have not done</u>, or are <u>unable to do</u>. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Un-able to Do
A. Attended meetings or received written information on emergency preparedness?	☑	☐	☐	☐
B. Talked with members in your household about what to do in case of an emergency?	☑	☐	☐	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☑	☐	☐	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☑	☐	☐	☐
E. In the last year, has anyone in your household received CPR training?	☑	☐	☐	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☑ Yes
   - ☐ No

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☑ Yes
   - ☐ No

7. How much more money <u>are you willing to spend</u> to better protect your family and home from disasters?
   - ☐ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☑ $1,000 - $2,499
   - ☐ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☐ Nothing
   - ☐ Don't know
   - ☐ Other, please explain: _____

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 59

9. Gender:
   - ☑ Male
   - ☐ Female

10. Please indicate your level of education:

- □ Grade school / no schooling
- □ Some high school
- □ High school graduate / GED
- □ Some college / trade school
- ☑ College degree
- □ Postgraduate degree
- □ Other

11. Zip Code: 24925

12. How long have you lived in Greenbrier County?

- □ Less than one year
- □ 1 – 5 years
- □ 5 – 9 years
- □ 10 – 19 years
- □ 20 years or more

OTHER COMMENTS:

THANK YOU FOR PROVIDING THIS INFORMATION

ARC/Linda Hays

Households Hazards Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Greenbrier County hazard mitigation planning process. This questionnaire is designed to help the county and the municipalities of Alderson, Lewisburg, Quinwood, Rainelle, Renick (Falling Springs), Ronceverte, Rupert, and White Sulphur Springs to gauge public perceptions of hazard vulnerability throughout all of Greenbrier County. This information you provide will help reduce vulnerability by guiding local leaders as they prioritize mitigation projects.

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as a flood, wind storm, winter storm?

□ Drought	□ Earthquake
☒ Flooding	□ Hailstorm
□ Hazardous Material Incident	□ Land Subsidence
□ Terrorism	□ Thunderstorm/Lightning
□ Urban Fire	□ Wildfire
□ Wind Storm/Tornado	☒ Winter Storm

2. How concerned are you personally about the following hazards affecting Greenbrier County? (***Circle the corresponding number for each hazard.***)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	3	4	(5)
Earthquake	1	2	3	4	(5)
Flooding	(1)	2	3	4	5
Hailstorm	1	2	3	(4)	5
Hazardous Material Incident	1	2	(3)	4	5
Land Subsidence	1	2	3	(4)	5
Terrorism	1	(2)	3	4	5
Thunderstorm/Lightning	1	2	3	(4)	5
Urban Fire	1	2	(3)	4	5
Wildfire	1	2	(3)	4	5
Wind Storm/Tornado	1	2	(3)	4	5
Winter Storm	1	(2)	3	4	5

3. Have you ever received information about how to make your family and home safer from emergency situations?

☒ Yes
□ No

4. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Un-able to Do
A. Attended meetings or received written information on emergency preparedness?	☒	☐	☐	☐
B. Talked with members in your household about what to do in case of an emergency?	☒	☐	☐	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☒	☐	☐	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☒	☐	☐	☐
E. In the last year, has anyone in your household received CPR training?	☒	☐	☐	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☒ Yes
   - ☐ No

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☒ Yes
   - ☐ No

7. How much more money are you willing to spend to better protect your family and home from disasters?
   - ☒ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☐ $1,000 - $2,499
   - ☐ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☐ Nothing
   - ☐ Don't know
   - ☐ Other, please explain: _____

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 58

9. Gender:
   - ☐ Male
   - ☒ Female

10. Please indicate your level of education:

- □ Grade school / no schooling
- □ Some high school
- □ High school graduate / GED
- ☒ Some college / trade school
- □ College degree
- □ Postgraduate degree
- □ Other

11. Zip Code: 24970

12. How long have you lived in Greenbrier County?

- □ Less than one year
- □ 1 – 5 years
- ☒ 5 – 9 years
- □ 10 – 19 years
- □ 20 years or more

OTHER COMMENTS:

THANK YOU FOR PROVIDING THIS INFORMATION

Households Hazards Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Greenbrier County hazard mitigation planning process. This questionnaire is designed to help the county and the municipalities of Alderson, Lewisburg, Quinwood, Rainelle, Renick (Falling Springs), Ronceverte, Rupert, and White Sulphur Springs to gauge public perceptions of hazard vulnerability throughout all of Greenbrier County. This information you provide will help reduce vulnerability by guiding local leaders as they prioritize mitigation projects.

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as a flood, wind storm, winter storm?

☒ Drought	☐ Earthquake
☐ Flooding	☐ Hailstorm
☐ Hazardous Material Incident	☐ Land Subsidence
☐ Terrorism	☒ Thunderstorm/Lightning
☐ Urban Fire	☐ Wildfire
☐ Wind Storm/Tornado	☐ Winter Storm

2. How concerned are you personally about the following hazards affecting Greenbrier County? (***Circle the corresponding number for each hazard.***)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	(2)	3	4	5
Earthquake	1	2	(3)	4	(5)
Flooding	1	2	(3)	4	5
Hailstorm	1	2	(3)	4	5
Hazardous Material Incident	1	2	(3)	4	5
Land Subsidence	1	2	3	(4)	5
Terrorism	1	2	(3)	4	5
Thunderstorm/Lightning	1	2	3	(4)	5
Urban Fire	1	2	3	4	(5)
Wildfire	1	2	3	(4)	5
Wind Storm/Tornado	1	2	3	(4)	5
Winter Storm	1	2	(3)	4	5

3. Have you ever received information about how to make your family and home safer from emergency situations?

☒ Yes
☐ No

4. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Un-able to Do
A. Attended meetings or received written information on emergency preparedness?	☒	☐	☐	☐
B. Talked with members in your household about what to do in case of an emergency?	☐	☐	☒	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☐	☐	☒	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☒	☐	☐	☐
E. In the last year, has anyone in your household received CPR training?	☒	☐	☐	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☐ Yes
   - ☒ No

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☒ Yes
   - ☐ No

7. How much more money are you willing to spend to better protect your family and home from disasters?
   - ☐ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☐ $1,000 - $2,499
   - ☒ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☐ Nothing
   - ☐ Don't know
   - ☐ Other, please explain: _____

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 51

9. Gender:
   - ☐ Male
   - ☒ Female

Households Hazards Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Greenbrier County hazard mitigation planning process. This questionnaire is designed to help the county and the municipalities of Alderson, Lewisburg, Quinwood, Rainelle, Renick (Falling Springs), Ronceverte, Rupert, and White Sulphur Springs to gauge public perceptions of hazard vulnerability throughout all of Greenbrier County. This information you provide will help reduce vulnerability by guiding local leaders as they prioritize mitigation projects.

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as a flood, wind storm, winter storm? no

   only serious incident was wind damage to parents' property on Rockland Rd. a few yrs. ago.

   - ☐ Drought
   - ☐ Flooding
   - ☐ Hazardous Material Incident
   - ☐ Terrorism
   - ☐ Urban Fire
   - ☐ Wind Storm/Tornado
   - ☐ Earthquake
   - ☐ Hailstorm
   - ☐ Land Subsidence
   - ☐ Thunderstorm/Lightning
   - ☐ Wildfire
   - ☐ Winter Storm

2. How concerned are you personally about the following hazards affecting Greenbrier County? (***Circle the corresponding number for each hazard.***)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	(3)	4	5
Earthquake	1	2	3	4	(5)
Flooding	1	2	(3)	4	5
Hailstorm	1	2	(3)	4	5
Hazardous Material Incident	1	2	(3)	4	5
Land Subsidence	1	2	(3)	4	5
Terrorism	1	2	3	(4)	5
Thunderstorm/Lightning	1	2	3	(4)	5
Urban Fire	1	2	(3)	4	5
Wildfire	1	(2)	3	4	5
Wind Storm/Tornado	1	2	(3)	4	5
Winter Storm	1	2	(3)	4	5

3. Have you ever received information about how to make your family and home safer from emergency situations?
   - ☑ Yes
   - ☐ No

4. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Un-able to Do
A. Attended meetings or received written information on emergency preparedness?	☐	☐	☑	☐
B. Talked with members in your household about what to do in case of an emergency?	☐	☐	☑	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☐	☐	☑	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☑	☐	☐	☐
E. In the last year, has anyone in your household received CPR training?	☐	☐	☑	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☑ Yes
   - ☐ No

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☑ Yes bought out of flood zone areas.
   - ☐ No

7. How much more money are you willing to spend to better protect your family and home from disasters?
   - ☐ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☐ $1,000 - $2,499
   - ☐ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☐ Nothing
   - ☐ Don't know
   - ☑ Other, please explain: already support police & fire dept. in our area.

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 55

9. Gender:
   - ☐ Male
   - ☑ Female

Households Hazards Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Greenbrier County hazard mitigation planning process. This questionnaire is designed to help the county and the municipalities of Alderson, Lewisburg, Quinwood, Rainelle, Renick (Falling Springs), Ronceverte, Rupert, and White Sulphur Springs to gauge public perceptions of hazard vulnerability throughout all of Greenbrier County. This information you provide will help reduce vulnerability by guiding local leaders as they prioritize mitigation projects.

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as a flood, wind storm, winter storm? NO
   - ☐ Drought
   - ☐ Flooding
   - ☐ Hazardous Material Incident
   - ☐ Terrorism
   - ☐ Urban Fire
   - ☐ Wind Storm/Tornado
   - ☐ Earthquake
   - ☐ Hailstorm
   - ☐ Land Subsidence
   - ☐ Thunderstorm/Lightning
   - ☐ Wildfire
   - ☐ Winter Storm

2. How concerned are you personally about the following hazards affecting Greenbrier County? (***Circle the corresponding number for each hazard.***)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	3	(4)	5
Earthquake	1	2	3	4	(5)
Flooding	1	2	3	(4)	5
Hailstorm	1	2	3	4	(5)
Hazardous Material Incident	1	2	3	(4)	5
Land Subsidence	1	2	3	4	(5)
Terrorism	1	2	3	4	(5)
Thunderstorm/Lightning	1	2	3	(4)	5
Urban Fire	1	2	3	(4)	5
Wildfire	1	2	3	4	(5)
Wind Storm/Tornado	1	2	3	4	(5)
Winter Storm	1	2	3	(4)	5

3. Have you ever received information about how to make your family and home safer from emergency situations?
   - ☑ Yes
   - ☐ No

4. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Un-able to Do
A. Attended meetings or received written information on emergency preparedness?	☑	☐	☐	☐
B. Talked with members in your household about what to do in case of an emergency?	☑	☐	☐	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☐	☐	☑	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☐	☐	☑	☐
E. In the last year, has anyone in your household received CPR training?	☐	☐	☑	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☑ Yes
   - ☐ No

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☑ Yes
   - ☐ No

7. How much more money are you willing to spend to better protect your family and home from disasters?
   - ☐ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☐ $1,000 - $2,499
   - ☐ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☐ Nothing
   - ☐ Don't know
   - ☑ Other, please explain: whatever is required - from reasonable possibility of disaster.

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 58

9. Gender:
   - ☑ Male
   - ☐ Female

Households Hazards Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Greenbrier County hazard mitigation planning process. This questionnaire is designed to help the county and the municipalities of Alderson, Lewisburg, Quinwood, Rainelle, Renick (Falling Springs), Ronceverte, Rupert, and White Sulphur Springs to gauge public perceptions of hazard vulnerability throughout all of Greenbrier County. This information you provide will help reduce vulnerability by guiding local leaders as they prioritize mitigation projects.

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as a flood, wind storm, winter storm?

☐ Drought	☐ Earthquake
☑ Flooding	☑ Hailstorm
☐ Hazardous Material Incident	☐ Land Subsidence
☐ Terrorism	☑ Thunderstorm/Lightning
☐ Urban Fire	☐ Wildfire
☑ Wind Storm/Tornado	☑ Winter Storm

2. How concerned are you personally about the following hazards affecting Greenbrier County? (***Circle the corresponding number for each hazard.***)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	(3)	4	5
Earthquake	1	2	3	4	(5)
Flooding	1	(2)	3	4	5
Hailstorm	1	2	(3)	4	5
Hazardous Material Incident	1	2	3	(4)	5
Land Subsidence	1	2	3	4	(5)
Terrorism	1	(2)	3	4	5
Thunderstorm/Lightning	1	(2)	3	4	5
Urban Fire	1	2	3	4	(5)
Wildfire	1	2	3	(4)	5
Wind Storm/Tornado	1	(2)	3	4	5
Winter Storm	1	(2)	3	4	5

3. Have you ever received information about how to make your family and home safer from emergency situations?

☐ Yes
☑ No

4. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Un-able to Do
A. Attended meetings or received written information on emergency preparedness?	☐	☐	☑	☐
B. Talked with members in your household about what to do in case of an emergency?	☑	☐	☐	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☑	☐	☐	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☐	☐	☑	☐
E. In the last year, has anyone in your household received CPR training?	☑	☐	☐	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☑ Yes
   - ☐ No

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☑ Yes
   - ☐ No

7. How much more money are you willing to spend to better protect your family and home from disasters?
   - ☐ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☐ $1,000 - $2,499
   - ☐ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☐ Nothing
   - ☐ Don't know
   - ☑ Other, please explain: Within reason

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 43

9. Gender:
   - ☐ Male
   - ☑ Female

Households Hazards Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Greenbrier County hazard mitigation planning process. This questionnaire is designed to help the county and the municipalities of Alderson, Lewisburg, Quinwood, Rainelle, Renick (Falling Springs), Ronceverte, Rupert, and White Sulphur Springs to gauge public perceptions of hazard vulnerability throughout all of Greenbrier County. This information you provide will help reduce vulnerability by guiding local leaders as they prioritize mitigation projects.

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as flood, wind storm, etc.?

- ☐ Drought
- ☐ Earthquake
- ☐ Flooding
- ☐ Hailstorm
- ☐ Hazardous Material Incident
- ☐ Land Subsidence
- ☐ Terrorism
- ☑ Thunderstorm/Lightning
- ☐ Urban Fire
- ☐ Wildfire
- ☐ Wind Storm/Tornado
- ☑ Winter Storm

2. How concerned are you personally about the following hazards affecting Greenbrier County? (***Circle the corresponding number for each hazard.***)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	(3)	4	5
Earthquake	1	2	3	(4)	5
Flooding	1	2	3	4	(5)
Hailstorm	1	(2)	3	4	5
Hazardous Material Incident	1	2	(3)	4	5
Land Subsidence	1	2	3	4	(5)
Terrorism	1	2	(3)	4	5
Thunderstorm/Lightning	(1)	2	3	4	5
Urban Fire	1	2	3	(4)	5
Wildfire	1	2	(3)	4	5
Wind Storm/Tornado	(1)	2	3	4	5
Winter Storm	(1)	2	3	4	5

3. Have you ever received information about how to make your family and home safer from emergency situations?

- ☐ Yes
- ☑ No

4. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Un-able to Do
A. Attended meetings or received written information on emergency preparedness?	☐	☐	☑	☐
B. Talked with members in your household about what to do in case of an emergency?	☐	☐	☑	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☐	☐	☑	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☐	☐	☑	☐
E. In the last year, has anyone in your household received CPR training?	☐	☐	☑	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☐ Yes
   - ☑ No

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☑ Yes
   - ☐ No

7. How much more money are you willing to spend to better protect your family and home from disasters?
   - ☐ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☑ $1,000 - $2,499
   - ☐ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☐ Nothing
   - ☐ Don't know
   - ☐ Other, please explain: _____

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 56

9. Gender:
   - ☐ Male
   - ☑ Female

Households Hazards Preparedness Questionnaire

2. How concerned are you personally about the following hazards affecting Greenbrier County? (*Circle the corresponding number for each hazard.*)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	3	4	5
Earthquake	1	2	3	4	5
Flooding	1	2	3	4	5
Hailstorm	1	2	3	4	5
Hazardous Material Incident	1	2	3	4	5
Land Subsidence	1	2	3	4	5
Terrorism	1	2	3	4	5
Thunderstorm/Lightning	1	2	3	4	5
Urban Fire	1	2	3	4	5
Wildfire	1	2	3	4	5
Wind Storm/Tornado	1	2	3	4	5
Winter Storm	1	2	3	4	5

4. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Un-able to Do
A. Attended meetings or received written information on emergency preparedness?	☑	☐	☐	☐
B. Talked with members in your household about what to do in case of an emergency?	☑	☐	☐	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☑	☐	☐	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☐	☑	☐	☐
E. In the last year, has anyone in your household received CPR training?	☐	☐	☑	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☑ Yes
   - ~~☑ No~~

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☐ Yes
   - ☑ No

7. How much more money are you willing to spend to better protect your family and home from disasters?
   - ☐ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☐ $1,000 - $2,499
   - ☐ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☐ Nothing
   - ☑ Don't know
   - ☐ Other, please explain: _____

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 35

9. Gender:
   - ☐ Male
   - ☑ Female

Households Hazards Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Greenbrier County hazard mitigation planning process. This questionnaire is designed to help the county and the municipalities of Alderson, Lewisburg, Quinwood, Rainelle, Renick (Falling Springs), Ronceverte, Rupert, and White Sulphur Springs to gauge public perceptions of hazard vulnerability throughout all of Greenbrier County. This information you provide will help reduce vulnerability by guiding local leaders as they prioritize mitigation projects.

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as a flood, wind storm, winter storm? N/O
   - ☐ Drought
   - ☐ Flooding
   - ☐ Hazardous Material Incident
   - ☐ Terrorism
   - ☐ Urban Fire
   - ☐ Wind Storm/Tornado
   - ☐ Earthquake
   - ☐ Hailstorm
   - ☐ Land Subsidence
   - ☐ Thunderstorm/Lightning
   - ☐ Wildfire
   - ☐ Winter Storm

2. How concerned are you personally about the following hazards affecting Greenbrier County? (***Circle the corresponding number for each hazard.***)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	(3)	4	5
Earthquake	1	2	3	4	(5)
Flooding	1	2	3	4	(5)
Hailstorm	1	2	(3)	4	5
Hazardous Material Incident	1	2	(3)	4	5
Land Subsidence	1	2	3	4	(5)
Terrorism	1	2	3	4	(5)
Thunderstorm/Lightning	1	(2)	3	4	5
Urban Fire	1	2	(3)	4	5
Wildfire	1	2	3	4	(5)
Wind Storm/Tornado	1	2	(3)	4	5
Winter Storm	1	2	(3)	4	5

3. Have you ever received information about how to make your family and home safer from emergency situations?
   - ☑ Yes
   - ☐ No

4. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Unable to Do
A. Attended meetings or received written information on emergency preparedness?	☑	☐	☐	☐
B. Talked with members in your household about what to do in case of an emergency?	☐	☐	☑	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☐	☐	☑	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☐	☐	☑	☐
E. In the last year, has anyone in your household received CPR training?	☑	☐	☐	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☐ Yes
   - ☑ No

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☐ Yes
   - ☑ No

7. How much more money are you willing to spend to better protect your family and home from disasters?
   - ☐ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☐ $1,000 - $2,499
   - ☐ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☑ Nothing
   - ☐ Don't know
   - ☐ Other, please explain: _____

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 48

9. Gender:
   - ☐ Male
   - ☑ Female

Households Hazards Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Greenbrier County hazard mitigation planning process. This questionnaire is designed to help the county and the municipalities of Alderson, Lewisburg, Quinwood, Rainelle, Renick (Falling Springs), Ronceverte, Rupert, and White Sulphur Springs to gauge public perceptions of hazard vulnerability throughout all of Greenbrier County. This information you provide will help reduce vulnerability by guiding local leaders as they prioritize mitigation projects.

HAZARD INFORMATION

1. In the past five (5) years, have you or someone in your household experienced a disaster such as a flood, wind storm, winter storm?

- □ Drought
- ☒ Flooding
- □ Hazardous Material Incident
- □ Terrorism
- □ Urban Fire
- □ Wind Storm/Tornado
- □ Earthquake
- □ Hailstorm
- □ Land Subsidence
- □ Thunderstorm/Lightning
- □ Wildfire
- ☒ Winter Storm
- ☒ POWER OUTAGES

2. How concerned are you personally about the following hazards affecting Greenbrier County? (***Circle the corresponding number for each hazard.***)

Disaster	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	1	2	3	4	5
Earthquake	1	2	3	4	(5)
Flooding	(1)	2	3	4	5
Hailstorm	1	2	3	(4)	5
Hazardous Material Incident	1	2	(3)	4	5
Land Subsidence	1	2	3	(4)	5
Terrorism	1	2	(3)	4	5
Thunderstorm/Lightning	1	2	3	4	(5)
Urban Fire	1	2	3	(4)	5
Wildfire	1	2	3	(4)	5
Wind Storm/Tornado	1	2	(3)	4	5
Winter Storm	1	(2)	3	4	5

3. Have you ever received information about how to make your family and home safer from emergency situations?

- ☒ Yes
- □ No

4. In the following list, please check those activities that you <u>have done</u> in your household, <u>plan to do</u> in the near future, <u>have not done</u>, or are <u>unable to do</u>. ***(Please check one answer for each preparedness activity.)***

In **your household**, have you or someone in your household:

Preparedness activity	Have Done	Plan to Do	Not Done	Un-able to Do
A. Attended meetings or received written information on emergency preparedness?	☒	☐	☐	☐
B. Talked with members in your household about what to do in case of an emergency?	☒	☐	☐	☐
C. Developed a "household emergency plan in order to decide what everyone would do in the event of an emergency?	☒	☐	☐	☐
D. Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)?	☒	☐	☐	☐
E. In the last year, has anyone in your household received CPR training?	☒	☐	☐	☐

HAZARD RISK REDUCTION

5. Did you consider the possible occurrence of an emergency when you bought/moved into your current home?
   - ☒ Yes
   - ☐ No

6. Would you be willing to spend more money on a home that had features that made it more disaster-resistant?
   - ☒ Yes
   - ☐ No

7. How much more money <u>are you willing to spend</u> to better protect your family and home from disasters?
   - ☒ $5,000 and above
   - ☐ $2,500 - $4,999
   - ☐ $1,000 - $2,499
   - ☐ $500 - $999
   - ☐ $100 - $499
   - ☐ Less than $100
   - ☐ Nothing
   - ☐ Don't know
   - ☐ Other, please explain: _____

GENERAL HOUSEHOLD INFORMATION

8. Please indicate your age: 73

9. Gender:
   - ☒ Male
   - ☐ Female

10. Please indicate your level of education:

- □ Grade school / no schooling
- □ Some high school
- □ High school graduate / GED
- ☒ Some college / trade school
- □ College degree
- □ Postgraduate degree
- □ Other

11. Zip Code: 24901

12. How long have you lived in Greenbrier County?

- □ Less than one year
- □ 1 – 5 years
- □ 5 – 9 years
- □ 10 – 19 years
- ☒ 20 years or more

OTHER COMMENTS:

THANK YOU FOR PROVIDING THIS INFORMATION