



# **REGION 8 PLANNING & DEVELOPMENT COUNCIL**

2018 Multi-Jurisdictional  
Hazard Mitigation Plan

**REGION 8**  
**PLANNING & DEVELOPMENT COUNCIL**  
**MULTI-JURISDICTIONAL**  
**HAZARD MITIGATION PLAN UPDATE 2018**



**PREPARED BY**  
**JH CONSULTING, LLC OF WEST VIRGINIA**  
**JANUARY, 2018**

## TABLE OF CONTENTS

<b>1.0 Introduction.....</b>	<b>1</b>
1.1 The Planning Process	4
1.2 Description of the Planning Area	11
<b>2.0 Risk Assessment.....</b>	<b>26</b>
2.1 Risk & Vulnerability	27
2.2 Hazards Overview	31
2.3 Hazard Profiles	36
2.3.1 Dam Failure	39
2.3.2 Drought	52
2.3.3 Earthquake	64
2.3.4 Epidemic	72
2.3.5 Flood	84
2.3.6 Hazmat	111
2.3.7 Land Subsidence	120
2.3.8 Severe Summer Weather	130
2.3.9 Severe Winter Weather	142
2.3.10 Terrorism	147
2.3.11 Wildfire	159
2.4 Asset Inventory	168
2.5 Development Trends	182
<b>3.0 Mitigation Strategy.....</b>	<b>187</b>
3.1 Hazard Mitigation Goals and Objectives	188
3.2 Hazard Mitigation Projects	189
3.3 Action Plan	192
<b>4.0 Plan Maintenance.....</b>	<b>209</b>
<b>5.0 Appendices.....</b>	<b>213</b>
Appendix 1: Source Data	
Appendix 2: Process and Participation	
Appendix 3: Inactive Projects	
Appendix 4: Hampshire County Floodplain Management Plan	
Appendix 5: Citations	
Appendix 6: Adopting Resolutions	

## LIST OF TABLES

1.1.2.A	Jurisdictional Involvement.....	5
1.1.2.B	Meeting Schedule.....	6
1.1.4.A	General Research.....	9
1.2.1.A	Region 8 Jurisdictions.....	11
1.2.2.A	Demographic Data for Region 8.....	12
1.2.4.A	Top Industries by County.....	15
1.2.4.B	Top 10 Employers in Region 8.....	16
1.2.5.A	Medical Services in Region 8.....	16
1.2.6.A	Media in Region 8.....	17
1.2.7.A	Utilities in Region 8.....	17
1.2.8.A	Jurisdictional Capabilities.....	21
1.2.8.B	Capability Self-Assessment.....	23
1.2.8.C	Self-Assessment: Project Considerations.....	23
1.2.9.A	Disaster Declarations in Region 8 Since 2007.....	24
2.2.1.A	Probability.....	27
2.2.1.B	Severity.....	28
2.2.1.C	Risk Assessment Matrix.....	28
2.1.3.A	Committee Risk Perspective.....	29
2.1.3.B	Hazard Level of Concern.....	30
2.2.1.A	Hazard Identification.....	31
2.3.A	Hazard Snapshots.....	37
2.3.1.A	Dams in Region 8.....	40
2.3.1.B	Dam Failure Risk Calculation.....	45
2.3.2.A	Palmer Drought Severity Index.....	52
2.3.2.B	Climate Normals in Region 8.....	53
2.3.2.C	Weeks in Drought Conditions Since 2000.....	54
2.3.2.D	USDA Census Data 1997-2002.....	56
2.3.2.E	Probability of Drought.....	57
2.3.2.F	Drought Risk Calculation.....	57
2.3.3.A	Grant County Expected Building Damage by Occupancy (HAZUS).....	67
2.3.3.B	Grant County HAZUS Building-Related Economic Loss Estimates.....	67



2.3.3.C	Hampshire County Expected Building Damage by Occupancy (HAZUS)..	67
2.3.3.D	Hampshire County HAZUS Building-Related Economic Loss Estimate.....	68
2.3.3.E	Hardy County Expected Building Damage by Occupancy (HAZUS).....	68
2.3.3.F	Hardy County HAZUS Building-Related Economic Loss Estimates.....	68
2.3.3.G	Mineral County Expected Building Damage by Occupancy (HAZUS).....	69
2.3.3.H	Mineral County HAZUS Building-Related Economic Loss Estimates.....	69
2.3.3.I	Pendleton County Expected Building Damage by Occupancy (HAZUS)....	69
2.3.3.J	Pendleton County HAZUS Building-Related Economic Loss Estimates.....	70
2.3.3.K	Earthquake Risk Calculation.....	70
2.3.4.A	Health Department Reported Diseases per County.....	74
2.3.4.B	Reportable Disease Summary.....	75
2.3.4.C	Epidemic Risk Calculation.....	77
2.3.5.A	Region 8 Communities Participating in the NFIP.....	84
2.3.5.B	Flood Events 1967-2017.....	88
2.3.5.C	Vulnerable Structures and Losses (HAZUS 2010).....	91
2.3.5.D	Repetitive Loss Properties in Region 8.....	91
2.3.5.E	Damages for Flood Events 1967-2017.....	91
2.3.5.F	Flood Risk Calculation.....	92
2.3.6.A	NRC Hazmat Incident Causes.....	111
2.3.6.B	NRC Incident Locations.....	112
2.3.6.C	Hazmat Incidents.....	112
2.3.6.D	Hazmat Risk Calculation.....	113
2.3.7.A	Land Subsidence Risk Calculation.....	123
2.3.8.A	Historical Occurrences of Severe Summer Weather.....	133
2.3.8.B	Severe Summer Weather Losses and Damages.....	134
2.3.8.C	Severe Summer Weather Risk Calculation.....	135
2.3.9.A	Historical Occurrences of Severe Winter Weather.....	143
2.3.9.B	Severe Winter Weather Losses and Damages.....	145
2.3.9.C	Severe Winter Weather Risk Calculation.....	145
2.3.10.A	Terrorist Activities in WV and Surrounding Region 8 States.....	149
2.3.10.B	Terrorism Risk Calculation.....	152
2.3.11.A	Wildfires in Region 8 (2008-2017).....	160
2.3.11.B	Wildfire Risk Calculation.....	161
2.4.A	Asset Inventory.....	169



2.5.A	Targeted Development Areas.....	182
3.2.2.A	Project Prioritization Matrix.....	190
3.3.A	Ongoing Mitigation Activities.....	192
3.3.B	Region 8 Mitigation Projects.....	198
5.1.A	Drought Conditions in Grant County	
5.1.B	Drought Conditions in Hampshire County	
5.1.C	Drought Conditions in Hardy County	
5.1.D	Drought Conditions in Mineral County	
5.1.E	Drought Conditions in Pendleton County	
5.1.F	SHELDUS Drought Data	
5.1.G	SHELDUS Hail Data	
5.1.H	SHELDUS Lightning Data	
5.1.I	SHELDUS Severe Storm/Thunderstorm Data	
5.1.J	SHELDUS Tornado Data	
5.1.K	SHELDUS Wind Data	
5.1.L	SHELDUS Heat Data	
5.1.M	NCEI Severe Summer Weather Data	
5.1.N	NCEI Severe Winter Weather Data	
5.1.O	SHELDUS Severe Winter Data	
5.1.P	NRC Hazardous Materials Incidents	
5.1.Q	PHMSA Hazardous Materials Incidents	



## 1.0 INTRODUCTION

This section presents an introduction to the hazard mitigation plan and defines the authority, scope and purpose of the plan.

### Plan Introduction

The *Region 8 Hazard Mitigation Plan* details natural and technological hazards that threaten Grant, Hampshire, Hardy, Mineral, and Pendleton Counties and their various municipalities. The plan fulfills the requirements set forth by the Disaster Mitigation Act of 2000 (DMA2K). This Act requires counties to formulate a hazard mitigation plan in order to be eligible for mitigation funds made available by the Federal Emergency Management Agency (FEMA).

### Plan Authority

This multi-jurisdictional 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 under Title 44: Emergency Services, Part 201.6. Specific reference is made to the Local Mitigation Planning Handbook (USDHS/FEMA, 2013).

### Plan Scope

The *Region 8 Hazard Mitigation Plan* includes all cities, villages, and townships within Grant, Hampshire, Hardy, Mineral, and Pendleton Counties. All hazards that have or can affect the residents of the region are analyzed. Hazard mitigation objectives, goals and projects are discussed, as are project lead agencies and potential funding sources.

### Plan Purpose

The purpose of the *Region 8 Hazard Mitigation Plan* is to identify and evaluate all natural and technological hazards that can and may affect Grant, Hampshire, Hardy, Mineral, and Pendleton Counties and to describe mitigation strategies to address these hazards.

## Organization of the Plan

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

- **Section 1.0: Introduction:** Outlines the process used to update the plan and describes the planning area.
- **Section 2.0: Risk Assessment:** Includes a description of risk, probability and severity; identifies and profiles the hazard risks most probable throughout the region. This section also analyzes other factors (cascading events and complicating variables) that contribute to or stem from a hazard. This section contains a list of critical, vulnerable, historic, special, and economic assets in the region. Regional development trends are included here.
- **Section 3.0: Mitigation Strategy:** Outlines the goals and objectives of hazard mitigation activities. It also identifies mitigation projects to be undertaken by the member governments in the region.
- **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.
- **Section 5.0:** Contains documentation of all meetings, source data for the hazards, completed surveys, text citations, and the adopting resolutions (once the plan has been approved).

## Changing Priorities

During this update process, the committee looked inward to their own communities and jurisdictions and outward to their surrounding jurisdictions and partners, striving for a whole community approach. Inwardly, this hazard mitigation plan committee prioritized having a comprehensive, manageable, realistic project list that jurisdictions could employ to achieve resilience in their communities. Outwardly, the committee members and Region 8 PDC reached out to surrounding jurisdictions, planning organizations, and a variety of stakeholders for input in the plan. The committee recognizes that mitigation efforts are valuable not only within the communities, but also when the cascading effects of hazards within a Region 8 community can affect other places and vice versa.



## **2018 Updates**

The plan organization follows the previous plan's very closely; where appropriate, sections have been updated to reflect the most recent available information. In general, the plan has been reformatted to present information in a more user-friendly way (i.e., tables and graphics where appropriate). Each section includes a "2018 Update" where it describes the changes and updates more specifically.

## 1.1 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.

### 2018 UPDATE

This portion of the plan has mostly changed since the previous plan submittal; all information about the process is new, only one section describes the previous process of 2012. Plan update processes before 2012 have been omitted.

#### 1.1.1 Plan Development Process of 2017

The Region 8 Planning and Development Council (PDC), an existing organization that addresses issues related to economic and community development, utilized the services of a consultant, JH Consulting, LLC, to navigate the plan updating process. The *Region 8 Hazard Mitigation Plan* update of 2017 consisted of integrating two committees: a planning and a steering committee. The Region 8 PDC members served as the planning committee for the plan update and appointed individuals to a steering committee.

A more hands-on steering committee was formed consisting of members from the Region 8 PDC, all five representative counties, and two jurisdictions. The remaining jurisdictions channeled their updates to the plan through the county representatives on the steering committee and the consultant. For more information on how the steering committee and all jurisdictions in Region 8 participated in this process, see [Section 1.1.2 Jurisdictional Involvement](#).

### 1.1.2 Jurisdictional Involvement

All the jurisdictions and steering committee members had the opportunity to be involved in a variety of activities ranging from in-person meetings, teleconferences, email, and phone correspondence to discussing hazards, capabilities, projects, and development trends and challenges in their communities. The representatives from each jurisdiction and a description of how each one participated in the process, is outlined in [Table 1.1.2.A](#).

TABLE 1.1.2.A JURISDICTIONAL INVOLVEMENT			
<i>Jurisdiction</i>	<i>Participation Level</i>	<i>Representative(s)</i>	<i>Title</i>
Bayard, Town of	2, 3	Steven Durst	Mayor
Capon Bridge, Town of	2, 3	Penny Feather	Clerk
Carpendale, Town of	3	Butch Armentrout	Mayor
		Rhonda Vanmeter	
Elk Garden, Town of	3	Tom Braithwaite	Councilman
Franklin, Town of	1, 2, 3, 4	Frank Wehrle	Floodplain Manager
Grant County	1, 2, 3	Peggy Bobo-Alt	OEM Director
		Cullen Sherman	Sanitarian
Hampshire County	1, 2, 3, 4	Brian Malcolm	HSEM Director
Hardy County	1, 2, 3	Paul Lewis	OEM Director
		Melissa Scott	Floodplain Manager
Keyser, City of	2, 3	Brandi Paugh	Recorder
Mineral County	1, 2, 3, 4	Luke McKenzie	HSEM Director
		Drew Brubaker	Commissioner
		Roger Leatherman	Commissioner
Moorefield, City of	2, 3	Gary Stalnaker	Mayor
Pendleton County	1, 2, 3	Bruce Minor	OEM Director
		Gene McConnell	Commissioner
Petersburg, City of	3	Sheila Vanmeter	City Manager
Piedmont, City of	2, 3	Ben Smith	Mayor
Ridgeley, Town of	3	Mark Jones	Mayor
Romney, City of	1, 2, 3	Jessica Szabo	City Administrator
Wardensville, Town of	2, 3	Greg Alderman	Mayor
Region 8 PDC	1, 2, 3, 4	Terry Lively	Executive Director
		Carla Dent	Office Assistant
<ol style="list-style-type: none"> <li>1. Involved in the steering committee by attending meetings and direct contact with the consultant.</li> <li>2. Completed or provided at least one of the following: asset inventory update, jurisdictional project status update, new project worksheet completion, hazard information for the jurisdiction, NFIP survey, and/or the online capabilities survey.</li> <li>3. Had direct contact with the Region 8 PDC, a steering committee member or the consultant about updates in their jurisdiction relevant to the project.</li> <li>4. Posted or published the public survey online or in print.</li> </ol>			

Planning and steering committee members attended several in-person and teleconference meetings throughout the update process. The following table describes the meeting types, dates, and what was discussed as part of the update.

TABLE 1.1.2.B MEETING SCHEDULE		
Type	Date	Topic
Planning (In Person)	July 20, 2017	<ul style="list-style-type: none"> <li>• Introduction to hazard mitigation plan update process</li> <li>• Selection of the steering committee to work with the consultant.</li> </ul>
Steering (In Person)	August 8, 2017	<ul style="list-style-type: none"> <li>• Overview of the hazard mitigation planning process</li> <li>• Review and approval of the hazard list</li> <li>• Activities:               <ul style="list-style-type: none"> <li>○ Risk Assessment Matrix</li> <li>○ Asset Inventory updates</li> <li>○ Hazard occurrence narratives</li> <li>○ Capabilities assessment survey</li> </ul> </li> <li>• Discussion of public involvement strategies</li> </ul>
Steering (In Person)	September 11, 2017	<ul style="list-style-type: none"> <li>• Review and update of goals and objectives</li> <li>• Review of public survey results thus far</li> <li>• NFIP survey completion request</li> <li>• Update of previous 2012 plan project status</li> </ul>
Planning (In Person)	September 21, 2017	<ul style="list-style-type: none"> <li>• Update to the committee of when the steering committee had met and next meetings.</li> <li>• All encouraged to attend next steering committee meeting</li> <li>• Update about tasks the committee members have completed and review of goals and objectives</li> </ul>
Steering (Teleconference)	September 26, 2017	<ul style="list-style-type: none"> <li>• Review and approval of new goals and objectives</li> <li>• Project status update request</li> </ul>
Steering (In Person)	October 25, 2017	<ul style="list-style-type: none"> <li>• Review of public survey results thus far</li> <li>• Reminder of tasks to be completed (asset lists, project status updates, online capabilities survey, sharing of public survey link)</li> <li>• New projects discussion and activity</li> <li>• Discussion on plan maintenance and integration procedures</li> <li>• Discussion on present and future development in the communities that could be affected by hazards</li> </ul>

The Region 8 PDC plans to hold one more meeting relating to hazard mitigation during their regular quarterly PDC meeting on June 21, 2018; this event brings together all the jurisdictional representatives from the region and gives them the opportunity to further discuss mitigation and hazards in their area. This meeting comes soon after all the counties received disaster declarations from the floods at the beginning of June, 2018.

### 1.1.3 Whole Community Approach

The Region 8 PDC recognizes that involving the right partners is crucial to the success of the project. For this reason, it involved community members from various sectors within the region. For example, planning committee members were representatives from sectors that are affected by mitigation action or policy: governmental, quasi-governmental organizations, private businesses, economic assets, and higher education.

Government

Grant County Commission  
Petersburg Mayor  
Bayard Mayor  
Romney Mayor  
Hampshire County Commission  
Wardensville Mayor  
Mineral County Commissioner  
Carpendale Mayor  
Ridgeley Mayor  
Keyser Mayor  
Piedmont Mayor  
Elk Garden Council  
Franklin Council  
Capon Bridge Mayor  
Moorefield Mayor  
Pendleton County Commission  
Hardy County Commission

Quasi-Government

Grant County Development Authority  
Region 7 Workforce Investment Board  
Hardy County Rural Development Authority

Private Business

Bean & Bean Attorneys  
Insurance Company  
Farmers  
Bed and Breakfast

Economic Asset

Capon Valley Bank  
Pendleton Community Bank  
Grant County Bank

Higher Education

Workforce Education EWVC

The Region 8 PDC also invited other partners that were not on the planning committee to provide feedback about hazards in their environments and to comment on their risks. The Region 8 PDC reached out to the following entities (see [Appendix 2: Process and Participation](#) for letters and emails sent out and responses received).

Quasi-Government

Region 4 Planning and Development Council  
Region 7 Planning and Development Council  
Region 9 Planning and Development Council  
Mineral County Board of Education  
Hardy County Board of Education  
Grant County Board of Education  
Pendleton County Board of Education

Higher Education

Eastern WV Community & Technical College

Private Business

Pilgrim's Pride  
Allegheny Dimension  
American Woodmark  
Judy's Drug Store

Healthcare

Grant Memorial Hospital  
Grant County Rehabilitation Center  
Potomac Valley Hospital

The Region 8 steering committee recognized the need early on in the process for a different approach to engaging the public; in the past, public meetings have been minimally attended by the public. Members of the steering committee posted and published the link to an online survey on their social media pages and in the newspaper (see [Appendix 2: Process and Participation](#) for screenshots of postings and public survey results). Through this they were able to attain 58 responses that indicated several things:

- the hazard that the public who took the survey is most concerned about is severe winter weather, followed closely by flooding, severe summer weather, and wildfires,
- 89% of the participants rated their community's ability to handle hazard events as average, good, or excellent,
- 59% of participants received warning information via social media, followed by radio, television, and text message,
- 40% of the participants do not have a 72-hour emergency kit in their household,
- 55% of the participants do not know if they live in a special flood hazard area (SFHA),
- 72% are willing to spend their own money on mitigation activities for their home, but only 52% have performed any improvements to their home to reduce their risk (mainly tree maintenance or removal and roof repair or replacement), and
- 25% of the participants indicated that they, or someone in their household, have a functional or access need that service providers should be aware of in an emergency.

Select comments that people had who took the survey included the need for stricter regulations in reference to building in the floodplain, the concern for pandemics rather than natural hazards, and the need to be provided a 911 address.

#### **1.1.4 Research Conducted**

The research conducted for the risk assessment phase of this update included data from federal, state, higher education, and mass media sources. The research aim was primarily to validate and describe the hazards included for consideration in this plan. Specific sources relative to individual hazards are listed in [Appendix 5: Citations](#).

The consultant reviewed a number of existing plans and reports to (a) identify any obvious inconsistencies between other development and mitigation efforts, (b) as baseline

information for such sections as Analyzing Development Trends, and (c) to support discussions surrounding mitigation projects. Those documents included the following.

TABLE 1.1.4.A GENERAL RESEARCH		
<i>Document Type</i>	<i>Document Citation</i>	<i>How Incorporated Into Plan</i>
Technical Information	USDHS FEMA Region 2I. (July, 2015). <i>Plan Integration: Linking Local Planning Efforts</i> . Federal Government: Washington, D.C.	Used as guidance on incorporating local planning efforts/plans into the planning process.
Technical Information	USDHS FEMA. (June, 2016). <i>National Mitigation Framework</i> . Federal Government: Washington, DC	Used as general guidance on mitigation planning.
Technical Information	USDHS FEMA. (May, 2005). <i>Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning</i> . Federal Government: Washington, D.C.	Used as general guidance for incorporating historic property and cultural protection.
Technical Information	USDHS FEMA. (March, 2013). <i>Local mitigation planning handbook</i> . Federal Government: Washington, D.C.	Used as general guidance on revised mitigation planning process
Technical Information	USDHS FEMA. (March, 2013). <i>Integrating Hazard Mitigation Into Local Planning</i> . Federal Government: Washington, D.C.	Used as general guidance on existing plan integration for hazard mitigation
Plan	Region 8 Planning and Development Council. (2017). <i>FY 2018 Regional Development Plan Update Comprehensive Economic Development Strategy</i> . Regional: Petersburg, WV.	Used for investigation of current mitigation projects and development trends in the area.
Report	Bureau of Business & Economic Research. (2014). <i>Potomac Highlands Economic Outlook</i> . Regional: Morgantown, WV.	Used as reference for economic status and development for the region.
Plan	Hampshire County (n.d.). <i>Floodplain Management Plan</i> . County Government: Romney, WV.	Used as reference for flooding in Hampshire County.
Plan	Hampshire County. (2009). <i>Hampshire County Comprehensive Plan</i> . County Government: Romney, WV.	Used for investigation of current mitigation projects and development trends in Hampshire County.
Plan	Town of Franklin. (2016). <i>Source Water Protection Plan</i> . Local Government: Franklin, WV.	Used for investigation of current mitigation projects and plans for Franklin.
Plan	Grant County Planning Commission. (2013). <i>Grant County Plan</i> . County Government: Morgantown, WV.	Used for investigation of current mitigation projects and development trends in Grant County.
Plan	Hardy County Planning Office. (August, 2011). <i>Hardy County Comprehensive Plan</i> . County Government: Moorefield, WV.	Used for investigation of current mitigation projects and development trends in Hardy County.
Plan	Mineral County Development Authority. (2014). <i>2014 Strategic Plan for the Mineral County Development Authority</i> . County Government: Keyser, WV.	Used for investigation of current mitigation projects and development trends in Mineral County.
Plan	Eastern Panhandle Health Response Team. (June, 2016). <i>All-Hazards Response Plan</i> . Regional.	Used for investigation of current mitigation projects and epidemiologic capabilities in the region.

### **1.1.5 Implementing the Plan and Monitoring the Process**

Region 8 stakeholders realize that the plan must remain viable in order to appropriately guide mitigation in the region. To that end, plan implementation (i.e., the mitigation strategy and project prioritization) is presented in [Section 3.0 Action Plan](#). The monitoring process is presented in [Section 4.0 Plan Maintenance](#).

### **1.1.6 Plan Development Process of 2012**

The previous Region 8 Hazard Mitigation Plan update of 2012 represented the third step in the evolution of the hazard mitigation plan; it was a consolidation of individual county plans compiled by the Region 8 Planning and Development Council (PDC) between 2003 and 2010. To accomplish this goal, the PDC hired a contractor to work with both the Council and its member governments to create a document that was truly regional, yet represented the individual interests of the PDC's member governments. As a part of this effort, the contractor coordinated with each county to update any projects and/or risks necessary since the 2009/2010 updates.

The PDC frequently updated its member governments on the status of this project at regularly-scheduled council meetings. Further, a public meeting was held on October 13, 2011, at the PDC office to encourage public participation in the development of the document. The meeting was minimally attended by the public. Further, upon completion of the update, the PDC published an advertisement in each of the local newspapers serving the region inviting the public to visit the PDC office, review the plan, and list any comments on a PDC-provided form. The PDC posted the updated document and a comment form on its website.



## 1.2 DESCRIPTION OF THE PLANNING AREA

### 2017 UPDATE

As this section was updated, the section for development trends was moved to its own section in the risk assessment; geographical descriptions of the region as well as information on demographics, transportation, and utilities were updated. New subtitles under this section include medical services, media, jurisdictional capabilities, and disaster declarations.

### 1.2.1 Regional Geography, Climate, and Environment

Region 8 is located on the Eastern Panhandle of West Virginia between Maryland and Virginia. It consists of five counties, Grant, Hampshire, Hardy, Mineral and Pendleton, and all their municipalities which include a total of eight towns and three cities.

The Region 8 counties are nestled in the heart of the Appalachian region in an area called the Potomac Highlands. Some areas have mountain elevations of up to 4,500 feet. West Virginia has several physiographic provinces; most of the geographic area of Region 8 is located in the Valley and Ridge Province, and a small part in the Allegheny Mountain Section, divided by the Allegheny Font, a prominent geological feature which runs northeast-southwest across the state. The Valley and Ridge Province in the east contains folded and faulted rocks that range in age from late Precambrian to early Mississippian and the Allegheny Mountain Section combines elements of the folded mountains to the east and the dissected plateau (WVGES, 2017).

The main rivers in the region include the North Branch and South Branch of the Potomac River, Cacapon River, and North and South Forks of the South Branch which all flow in a northeastern direction to the Potomac River, ultimately ending up in the Chesapeake Bay, all forming part of the Chesapeake Bay Watershed (Geology.com, n.d.).

The Allegheny Mountains create a rain shadow, thus the western part of the state receives more precipitation than the eastern panhandle, but the mountains receive the

Name	Type	County
Bayard	Town	Grant
Capon Bridge	Town	Hampshire
Carpendale	Town	Mineral
Elk Garden	Town	Mineral
Franklin	Town	Pendleton
Grant	County	N/A
Hampshire	County	N/A
Hardy	County	N/A
Keyser	City	Mineral
Mineral	County	N/A
Moorefield	Town	Hardy
Pendleton	County	N/A
Petersburg	City	Grant
Piedmont	City	Mineral
Ridgeley	Town	Mineral
Romney	City	Hampshire
Wardensville	Town	Hardy

most. Annual precipitation in the Allegheny Mountains is 53.8 inches while in the Ridge and Valley it is only 36.6 inches. Elevation also plays an important role in precipitation; the average annual precipitation increases by 6" as the elevation increases from 2,000 - 3,000 ft. on the western side of the mountains. On the eastern side annual precipitation decreases by 9" as elevation decreases from 3,000 - 2,000 ft.

The average annual temperature in, in the Allegheny Mountains is 49.4 degrees F, and 52.8 degrees F in the Ridge and Valley. Mean annual temperature decreases by 2.9 F for each 1,000 foot increase in elevation (Pauley, n.d.).

There are eight areas in the Potomac Highlands that are designated as environmentally sensitive because of breeding grounds for native wildlife, wilderness areas, recreational areas, and underground cavern sites. The region has ten rare species of plants and various endangered or threatened wildlife species (CEDS, 2017).

### 1.2.2 Demographics

From the census in 2000 to 2010, Hampshire and Hardy counties saw a 10 to 24.9% increase in population; Grant and Mineral Counties also experienced a growth of around 0 to 9.9%, and Pendleton County lost from 0.01-10% of its population. According to the Census, population change in the United States from 2010 to January 1, 2018 is 5.9% increase. West Virginia is the state that lost most population in this time period (-2%). However, Census information indicates that since the last update of this plan in 2012, all counties have experienced at least some population growth.

Fact	Grant County	Hampshire County	Hardy County	Mineral County	Pendleton County	Totals/Average
<i>Population</i>						
Population estimates, July 1, 2016, (V2016)	11,732	23,301	13,889	27,411	7,051	83,384
Persons under 5 years, percent, July 1, 2016, (V2016)	5.20%	4.90%	5.20%	5.50%	4.50%	5.06%
Persons under 18 years, percent, July 1, 2016, (V2016)	19.50%	19.90%	20.10%	20.10%	17.50%	19.42%
Persons 65 years and over, percent, July 1, 2016, (V2016)	23.70%	20.90%	21.00%	20.60%	26.80%	22.60%
Female persons, percent, July 1, 2016, (V2016)	50.10%	49.10%	49.80%	50.30%	49.40%	49.74%
White alone, percent, July 1, 2016, (V2016)	97.70%	97.00%	93.70%	94.80%	96.20%	95.88%
Black or African American alone, percent, July 1, 2016, (V2016)	1.00%	1.20%	3.50%	3.00%	2.10%	2.16%
American Indian and Alaska Native alone, percent, July 1, 2016, (V2016)	0.10%	0.20%	0.20%	0.20%	0.30%	0.20%

TABLE 1.2.2.A DEMOGRAPHIC DATA FOR REGION 8						
Fact	Grant County	Hampshire County	Hardy County	Mineral County	Pendleton County	Totals/Average
Asian alone, percent, July 1, 2016, (V2016)	0.20%	0.30%	1.00%	0.50%	0.10%	0.42%
Two or More Races, percent, July 1, 2016, (V2016)	0.90%	1.20%	1.50%	1.40%	1.30%	1.26%
Hispanic or Latino, percent, July 1, 2016, (V2016)	1.30%	1.40%	4.80%	0.90%	1.20%	1.92%
White alone, not Hispanic or Latino, percent, July 1, 2016, (V2016)	96.70%	95.80%	89.90%	94.10%	95.10%	94.32%
Veterans, 2011-2015	870	1,615	1,110	2,169	706	6,470
Foreign born persons, percent, 2011-2015	0.10%	0.40%	2.70%	0.50%	0.50%	4.20%
<i>Housing</i>						
Housing units, July 1, 2016, (V2016)	6,583	13,870	8,168	13,106	5,179	46,906
Median value of owner-occupied housing units, 2011-2015	\$124,900	\$121,400	\$118,800	\$128,300	\$100,500	\$118,780
Households, 2011-2015	4,175	10,194	5,156	11,289	3,095	33,909
Language other than English spoken at home, percent of persons age 5 years+, 2011-2015	1.90%	1.40%	5.70%	1.30%	1.00%	2.26%
<i>Education</i>						
High school graduate or higher, percent of persons age 25 years+, 2011-2015	81.90%	78.20%	79.40%	88.70%	80.20%	81.68%
Bachelor's degree or higher, percent of persons age 25 years+, 2011-2015	12.30%	10.10%	14.00%	12.40%	15.30%	12.82%
<i>Health</i>						
With a disability, under age 65 years, percent, 2011-2015	11.10%	16.80%	12.20%	16.00%	12.80%	13.78%
Persons without health insurance, under age 65 years, percent	7.70%	9.40%	9.70%	6.80%	8.40%	8.40%
<i>Economy</i>						
In civilian labor force, total, percent of population age 16 years+, 2011-2015	55.00%	50.10%	58.30%	52.00%	47.80%	52.64%
Mean travel time to work (minutes), workers age 16 years+, 2011-2015	27.2	38.1	25.3	27.9	30.2	29.74
Median household income (in 2015 dollars), 2011-2015	\$39,088	\$27,995	\$40,303	\$36,153	\$36,953	\$36,098.40
Per capita income in past 12 months (in 2015 dollars), 2011-2015	\$20,052	\$18,477	\$22,195	\$20,093	\$21,979	\$20,559.20
Persons in poverty, percent	15.90%	18.60%	14.40%	15.60%	16.40%	16.18%
Total employment, percent change, 2014-2015	3.20%	1.60%	1.50%	-4.90%	-3.30%	-0.38%
<i>Other</i>						
Population per square mile, 2010	25	37.4	24.1	86.1	11.1	36.74
Land area in square miles, 2010	477.37	640.25	582.31	327.83	696.05	2723.81

### 1.2.3 Transportation

#### Roads

The transportation network of the Region 8 area includes four-lane, divided highways, two-lane roadways, and single-lane roadways. This network passes through a



rural and mountainous area (often referred to as the “Potomac Highlands”); therefore, many of the routes are curvy and traverse steep grades. The primary and secondary transportation routes through Region 8 are as follows:

<u>Primary Routes</u>	<u>Secondary Routes</u>
US Route 48 (Corridor H)	State Route 28
US Route 33	State Route 46
US Route 50	State Route 55
US Route 220	State Route 93
	State Route 259

Corridor H is a four-lane divided highway that is currently under construction. All sections of the corridor are constructed and open to traffic except the section between Wardensville and Virginia; the “final design of this segment through Hardy County is anticipated to begin in 2020. Construction tentatively is scheduled to begin in 2027” (WVDOH, 2017). This route, when completed, will run through Grant and Hardy Counties and is expected to bring significant development to the area. With that development could come additional heavy traffic as well as an increased risk of transportation-based hazardous material incidents. Additionally, it may provide a major east-west thoroughfare through the northern portions of West Virginia. Some plans have called for it to be used as an evacuation route for populations leaving the National Capital Region (NCR) should a catastrophic incident occur in the Washington, D.C. and/or Baltimore areas.

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

### Rail

Four of the five Region 8 counties have railroads running through them. The Capitol Limited (Amtrak) runs along the Potomac River at the northern border of the State with Maryland in Mineral and Hampshire Counties. The Potomac Eagle Railroad is a scenic railroad that runs roughly north to south in Hardy and Hampshire Counties. The South Branch Valley Railroad in Grant County provides freight and passenger service to the state’s eastern panhandle (WVDOT, n.d.). At least four railroad projects were proposed in Pendleton County, but none materialized. Pendleton never obtained a permanent railroad,

although several temporary logging railroads penetrated the county in the early 20th century (Taylor, 2013).

Air

There is one airport, categorized as a general aviation facility in Region 8: the Grant County Airport that serves Petersburg.

**1.2.4 Economy**

In all five counties, the economy (i.e., local work force) is driven by education, healthcare, and social assistance and manufacturing whereas five years ago it was government and the trade, transportation, and utilities industries. [Table 1.2.4.B](#) shows the top five industries in each county, with the percent of individuals employed by each.

TABLE 1.2.4.A TOP INDUSTRIES BY COUNTY					
County	INDUSTRY 1 Name (%)	INDUSTRY 2 Name (%)	INDUSTRY 3 Name (%)	INDUSTRY 4 Name (%)	INDUSTRY 5 Name (%)
Grant	Education, Healthcare & Social Assistance (21.5%)	Manufacturing (16.8%)	Construction (15.0%)	Retail Trade (9.8%)	Transportation, Warehousing, and Utilities (6.5%)
Hampshire	Education, Healthcare & Social Assistance (26.2%)	Manufacturing (10.1%)	Retail Trade (14.8%)	Construction (10.1%)	Public Administration (6.9%)
Hardy	Manufacturing (26.6%)	Education, Healthcare & Social Assistance (20.2%)	Retail Trade (10.5%)	Arts, Entertainment, Recreation, Accommodation & Food Services (9.9%)	Construction (6.0%)
Mineral	Education, Healthcare & Social Assistance (24.5%)	Manufacturing (18.3%)	Retail Trade (13.7%)	Arts, Entertainment, Recreation, Accommodation & Food Services (10.0%)	Public Administration (7.5%)
Pendleton	Education, Healthcare & Social Assistance (27.1%)	Manufacturing (12.4%)	Construction (12.2%)	Retail Trade (10.5%)	Public Administration (8.9%)

Source: WVU County Data Profiles (2016)

[Table 1.2.4.B](#) shows the top ten employers in each county. The county Board of Education is one of the top three employers in every county.



TABLE 1.2.4.B TOP 10 EMPLOYERS IN REGION 8					
	Grant	Hampshire	Hardy	Mineral	Pendleton
1	Grant Memorial Hospital	Hampshire County Board of Education	Pilgrim's Pride Corporation of West Virginia	Alliant Techsystems, Inc.	Pendleton County Board of Education
2	Virginia electric and Power Company	West Virginia Schools for the Deaf and the Blind	American Woodmark Corporation	Mineral County Board of Education	Pendleton Manor, Inc.
3	Grant County Board of Education	Valley Health System, Inc.	Hardy County Board of Education	IBM Corporation	US Department of Defense
4	APCom Power Inc.	Potomac Comprehensive Diagnostic Guidance Center	Wal-Mart Stores, Inc.	Wal-Mart Stores, Inc.	Greer Industries, Inc.
5	Power Piping Company	Hampshire County Committee on aging	Eastern WV Community & Technical College	West Virginia University	Allegheny Wood Products, Inc.
6	Grant County Nursing Home	Hampshire County Commission	Summit Community Band, Inc	West Virginia Department of Highways	Pendleton Senior and Family Service
7	WACO, Inc.	Bank of Romney	E.A. Hawse Health Center, Inc.	Potomac Valley Hospital of West Virginia	Pendleton Community Care, Inc.
8	A.L.L. Construction, Inc.	Romney Health Care Center	E.A. Hawse Nursing and Rehabilitation Center, Inc.	Lumber and Things, Inc.	Pendleton Community Bank, Inc.
9	Allegheny Wood Products, Inc.	West Virginia Regional Jail & Correctional Facility Authority	Hardy County Commission	Automated Packaging Systems, Inc.	Hinkle Trucking, Inc.
10	Commission on Aging Family Service	Maharishi Purusha Program, Inc.	Packers Sanitation Services, Inc.	Heartland Employment Services, Inc.	Franklin IGA, Inc.

Source: Work Force West Virginia Profiles (2014).

### 1.2.5 Medical Services

A combination of private and public hospitals and free clinics exist in the counties of Region 8. [Table 1.2.5.A](#) outlines these hospitals in clinics in the area.

TABLE 1.2.5.A MEDICAL SERVICES IN REGION 8		
County	Name	Location
Grant	Grant Memorial Hospital	Petersburg
	Grant Pediatrics Interna Free Clinic	Petersburg
	Mt. Storm Health Center	Mt. Storm
Hampshire	Hampshire Memorial Hospital	Romney
Hardy	Potomac Valley Family Medicine	Moorefield
	E.A. Hawse Health Center	Baker
	E.A. Hawse Nursing Rehab Clinic	Baker
	E.A. Hawse Health Center	Mathias
	EZCare Walk-In Medical Center	Moorefield
Mineral	Potomac Valley Hospital	Keyser
Pendleton	Pendleton Community Care	Franklin
	North Fork Primary Care Clinic	Riverton

Source: [theagapecenter.com](http://theagapecenter.com), [freeclinics.com](http://freeclinics.com)



### 1.2.6 Media

The type of media in Region 8 with most variety is the non-daily newspapers (six) followed by radio stations (three) and one each daily newspaper, college newspaper, and college radio.

TABLE 1.2.6.A MEDIA IN REGION 8		
Type of Media	Name	Location
Daily Newspaper	Mineral Daily News-Tribune	Keyser
Non-Daily Newspaper	Echo (Weekender)	Keyser
Non-Daily Newspaper	Moorefield Examiner	Moorefield
Non-Daily Newspaper	Piedmont Herald	Piedmont
Non-Daily Newspaper	Grant County Press	Petersburg
Non-Daily Newspaper	Hampshire Review	Romney
Non-Daily Newspaper	Pendleton Times	Franklin
College Newspaper	Pasquino	Keyser
Radio	WQZK-FM 94.1	Keyser
Radio	WVa Public Radio-FM 89.5	Petersburg
Radio	WKLP-AM 1390	Keyser
College Radio	WJGF-FM 104.1	Romney

Source: wwmediaguide.com

### 1.2.7 Utilities

In Region 8 there are several services for utilities such as cable television, electric, gas, sewer, solid waste, and water. [Table 1.2.7.A](#) outlines each type of utility and the providers for the counties.

TABLE 1.2.7.A UTILITIES IN REGION 8	
County	Utility Name
<i>Cable Television</i>	
Grant	C T & R Cable
Grant	Cequel III Communications II LLC
Grant	Shenandoah Cable Television, LLC
Hampshire	Atlantic Broadband (Penn), LLC
Hardy	Hardy Telecommunications, Inc.
Hardy	Atlantic Broadband (Penn), LLC
Hardy	C T & R Cable
Mineral	Atlantic Broadband (Penn), LLC
Mineral	Cequel III Communications II LLC
Mineral	Shenandoah Cable Television, LLC
Mineral	Comcast Communications
Pendleton	Cequel III Communications II LLC
Pendleton	Shenandoah Cable Television, LLC
Pendleton	Spruce Knob Seneca Rocks Telephone, Inc.
<i>Electric</i>	

<b>TABLE 1.2.7.A UTILITIES IN REGION 8</b>	
<i>County</i>	<i>Utility Name</i>
Grant	Monongahela Power Company
Grant	The Potomac Edison Company
Hampshire	The Potomac Edison Company
Hardy	The Potomac Edison Company
Mineral	Monongahela Power Company
Mineral	The Potomac Edison Company
Pendleton	Monongahela Power Company
Grant	Mt. Storm Wind Force, LLC
Grant	New Creek Wind, LLC
Grant	Shell WindEnergy, Inc.
Mineral	Pinnacle Wind, LLC
Grant	Trans-Allegheny Interstate Line Company
Hampshire	Trans-Allegheny Interstate Line Company
Hardy	Trans-Allegheny Interstate Line Company
<i>Gas</i>	
Grant	Mountaineer Gas Company
Hardy	Mountaineer Gas Company
Mineral	Mountaineer Gas Company
<i>Sewer</i>	
Hardy	Moorefield/Hardy County Wastewater Authority
Mineral	Fountainhead Homeowners Association, Inc.
Grant	Mountain Top Public Service District
Hampshire	Central Hampshire Public Service District
Hardy	Hardy County Public Service District
Mineral	New Creek Public Service District
Mineral	Frankfort Public Service District
Mineral	Mountain Top Public Service District
Grant	City of Petersburg Sewer Department
Hampshire	Town of Capon Bridge (Sewer)
Hampshire	City of Romney (Sewer Department)
Hardy	Town of Moorefield
Hardy	Town of Wardensville
Mineral	Town of Carpendale (Sewer)
Mineral	City of Keyser Sewer Department
Mineral	City of Piedmont (Sewer)
Mineral	Town of Ridgeley
Pendleton	Town of Franklin Sewer System
Grant	C & J Utilities, LLC
Hampshire	P & P Enterprises Utilities, LLC
Mineral	Lakewood Utilities, Inc.
<i>Solid Waste</i>	
Grant	Petersburg Transfer Station
Grant	Region Eight Solid Waste Authority
Grant	LCS Services
Hampshire	LCS Services
Hardy	LCS Services





TABLE 1.2.7.A UTILITIES IN REGION 8	
County	Utility Name
Mineral	LCS Services
Pendleton	LCS Services
<i>Telephone</i>	
Grant	Citizens Telecommunications Company of WV
Grant	Frontier West Virginia Inc.
Hampshire	Citizens Telecommunications Company of WV
Hardy	Hardy Telecommunications, Inc.
Hardy	Citizens Telecommunications Company of WV
Mineral	Citizens Telecommunications Company of WV
Mineral	Frontier West Virginia Inc.
Pendleton	Spruce Knob Seneca Rocks Telephone, Inc.
Pendleton	Frontier West Virginia Inc.
<i>Water</i>	
Grant	Grant County Public Service District
Grant	Mountain Top Public Service District
Hampshire	Central Hampshire Public Service District
Hardy	Hardy County Public Service District
Mineral	Fountain Public Service District
Mineral	Frankfort Public Service District
Mineral	Mountain Top Public Service District
Pendleton	Pendleton County Public Service District
Grant	Petersburg Water Department City of
Hampshire	Town of Capon Bridge (Water)
Hampshire	City of Romney (Water Department)
Hardy	Moorefield Municipal Water Works
Hardy	Town of Wardensville
Mineral	Town of Carpendale (Water)
Mineral	City of Keyser Water Department
Mineral	City of Piedmont Municipal Water Department
Mineral	Town of Ridgeley (Water Department)
Pendleton	Franklin Municipal Water Department
Hampshire	P & P Enterprises Utilities, LLC
Mineral	Lakewood Utilities, Inc.
Mineral	Mountain View Water System LLC
Hardy	Hardy County Rural Development Authority
Mineral	New Creek Water Association, Inc.

Source: Public Service Commission of West Virginia

### 1.2.8 Jurisdictional Capabilities

The counties and municipalities within Region 8 PDC have a number of capabilities that can support mitigation efforts including comprehensive plans, building codes, subdivision and land use ordinances, zoning ordinances, and floodplain regulations. The

PDC's consultant worked with steering committee members to complete a "capabilities assessment." Steering committee members answered questions about the following plans, codes, and ordinances from the perspectives of their home jurisdictions.

- **Comprehensive Plans:** Comprehensive plans promote sound land use and regional cooperation among local governments to address planning issues. These plans serve as the official policy guide for influencing the location, type, and extent of future development by establishing the basic decision-making and review processes on zoning matters, subdivision and land development, land uses, public facilities, and housing needs over time.
- **Building Codes:** Building codes regulate construction standards for new construction and substantially renovated buildings. Standards can be adopted that require resistant or resilient building design practices to address hazard impacts common to a given community.
- **Subdivision and Land Use Development Ordinances:** Subdivision and land development ordinances (SALDOs) are intended to regulate the development of housing, commercial, industrial or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. Within these ordinances, guidelines on how land will be divided, the placement and size of roads and the location of infrastructure can reduce exposure of development to hazard events.
- **Zoning Ordinances:** Zoning ordinances allow for local communities to regulate the use of land in order to protect the interests and safety of the general public. Zoning ordinances can address unique conditions or concerns within a given community. They may be used to create buffers between structures and high-risk areas, limit the type or density of development and/or require land development to consider specific hazard vulnerabilities.
- **National Flood Insurance Program (NFIP) Participation and Floodplain Management Ordinances:** Through administration of floodplain ordinances, municipalities can ensure that all new construction or substantial improvements to existing structures located in the floodplain are flood-proofed, dry-proofed, or built above anticipated flood elevations. Floodplain ordinances may also prohibit development in certain areas altogether. The National Flood Insurance Program (NFIP) establishes minimum ordinance requirements which must be met in order for

that community to participate in the program. However, a community is permitted and encouraged to adopt standards which exceed NFIP requirements.

**TABLE 1.2.8.A JURISDICTIONAL CAPABILITIES**

<i>Jurisdiction</i>	Comprehensive Plan	Building Codes	Participate in NFIP	Subdivision or Land Use Ordinance	Zoning Ordinance	Capital Budget Funds for Mitigation Projects	Public Works Budget for Mitigation projects
Grant County	YES	NO	YES*	YES	NO	NO	NO
Hampshire County	YES	YES	YES*	YES	NO	NO	NO †
Hardy County	YES	NO	YES	YES	YES	NO	NO
Mineral County	YES	NO	YES	YES	NO	NO †	NO †
Pendleton County	NO	NO	YES*	NO	NO	NO	NO
Bayard, Town of	NO	YES	YES*	NO	NO	NO †	NO †
Franklin, Town of	YES	YES	YES*	NO	NO	NO †	NO †
Keyser, City of	NO	NO	YES	NO	NO	NO	NO
Moorefield, City of	YES	YES	YES*	YES	YES	NO †	YES
Piedmont, City of	NO	YES	YES	NO	NO	NO	NO
Romney, City of	NO	NO	YES	NO	YES	NO †	NO †
Wardensville, Town of	YES	NO	YES	YES	YES	NO †	NO †

\* Exceeds the minimum standards of NFIP Requirements  
† No, but willing to consider for future projects

### Administrative and Technical Capability

Administrative capability is described by an adequacy of departmental and personnel resources for the implementation of mitigation-related activities. Technical capability relates to an adequacy of knowledge and technical expertise of local government employees or the ability to contract outside resources for this expertise to effectively execute mitigation activities. Common examples of skill sets and technical personnel for hazard mitigation include planners with knowledge of land development/management practices, engineers or professionals trained in construction practices related to buildings and/or infrastructure (e.g., building inspectors), planners or engineers with an understanding of natural and/or human caused hazards, emergency managers, floodplain managers, land surveyors, scientists familiar with hazards in the community, staff with the education or expertise to assess community vulnerability to hazards, personnel skilled in geographic information systems, resource development staff or grant writers, and fiscal staff to handle complex grant application processes.

### Fiscal Capability

The decision and capacity to implement mitigation-related activities is often strongly dependent on the presence of local financial resources. While some mitigation actions are less costly than others, it is important that money is available locally to implement policies and projects. Financial resources are particularly important if communities are trying to take advantage of state or federal mitigation grant funding opportunities that require local-match contributions. Federal programs which may provide financial support for mitigation activities include, but are not limited to:

- Community Development Block Grant (CDBG),
- Disaster Housing Program,
- Emergency Conservation Program,
- Emergency Management Performance Grants (EMPG),
- Emergency Watershed Protection Program,
- Hazard Mitigation Grant Program (HMGP),
- Flood Mitigation Assistance Program,
- Non-Insured Crop Disaster Assistance Program,
- Pre-Disaster Mitigation Program,
- Repetitive Flood Claims Program (RFC),
- Section 108 Loan Guarantee Programs,
- Severe Repetitive Loss (SRL) Program, and
- Weatherization Assistance Program.

### Political Capability

One of the most difficult capabilities to evaluate involves the political will of a jurisdiction to enact meaningful policies and projects designed to mitigate hazard events. The adoption of hazard mitigation measures may be seen as an impediment to growth and economic development. In many cases, mitigation may not generate interest among local officials when compared with competing priorities. Therefore, the local political climate must be considered when designing mitigation strategies, as it could be the most difficult hurdle to overcome in accomplishing the adoption or implementation of specific actions.

### Self-Assessment

Representing the largest jurisdictions in Region 8, committee members completed a self-assessment for their jurisdictions to serve as representative capabilities within the region to effectively implement hazard mitigation activities. As part of this process, the Region 8 consultant encouraged members to consider barriers to implementing proposed mitigation strategies in addition to the mechanisms that could enhance or further such strategies. In response to the survey questionnaire, local officials classified each of the capabilities as either “limited,” “moderate,” or “high.” [Table 1.2.8.B](#) summarizes the results of the self-assessment survey as a percentage of the eight responses received.

<i>Capability</i>	<i>High</i>	<i>Moderate</i>	<i>Limited</i>
Planning & Regulatory	14.29%	57.14%	28.57%
Administrative & Technical	14.29%	42.86%	42.86%
Fiscal	0%	28.57%	71.43%
Political	0%	71.43%	28.47%

The 2017 self-assessment also included four questions to gauge community receptiveness to several types of mitigation strategies. [Table 1.2.8.C](#) details the results.

<i>Sample Mitigation Strategy</i>	<i>Very Willing</i>	<i>Willing</i>	<i>Neutral</i>	<i>Unwilling</i>	<i>Very Much Unwilling</i>
XYZ community guides development away from known hazard areas.	21.43%	42.86%	21.43%	14.29%	0%
XYZ community restricts public investments or capital improvements within hazard areas.	7.14%	50%	28.57%	14.29%	0%
XYZ community enforces local development standards (e.g., building codes, floodplain management ordinances, etc.) that go beyond minimum state or federal requirements.	14.29%	27.14%	21.43%	7.14%	0%
XYZ community offers financial incentives (e.g., through property tax credits) to individuals and businesses that employ resilient construction techniques (e.g., voluntarily elevate structures, employ landscape designs that establish buffers, install green infrastructure elements, etc.).	7.14%	28.57%	42.86%	21.43%	0%

### 1.2.9 Disaster Declarations

When a hazard incident occurs in a state, and the capabilities exceed those of the state, after the preliminary damage assessment, the Governor can request that the President declare an emergency or a disaster.

- **Emergency Declarations:** The President can declare an emergency for any occasion or instance when the President determines federal assistance is needed. Emergency declarations supplement State and local or Indian tribal government efforts in providing emergency services, such as the protection of lives, property, public health, and safety, or to lessen or avert the threat of a catastrophe in any part of the United States. The total amount of assistance provided for in a single emergency may not exceed \$5 million. The President shall report to Congress if this amount is exceeded.
- **Major Disaster Declarations:** The President can declare a major disaster for any natural event, including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought, or, regardless of cause, fire, flood, or explosion, that the President determines has caused damage of such severity that it is beyond the combined capabilities of state and local governments to respond. A major disaster declaration provides a wide range of federal assistance programs for individuals and public infrastructure, including funds for both emergency and permanent work. Assistance available under a major disaster declaration includes individual, public, and hazard mitigation.

West Virginia is no stranger to emergency and disaster declarations. The majority of the declarations that the state has had are due to severe storms and flooding. The table below outlines the declarations in Region 8 counties alone since 2007.

<i>Declaration Number</i>	<i>Event Type</i>	<i>Counties Affected</i>	<i>Dates of Event</i>	<i>Public Assistance</i>
DR-4093	Hurricane Sandy	Pendleton	October 29, 2012 - November 8, 2012	\$9.75 per capita
DR-4071	Severe Storms and Straight-Line Winds	Grant Hardy Pendleton	June 29, 2012 - July 8, 2012	\$11,718,720.76 per event
EM-3345	Severe Storms	Grant Hampshire Hardy Mineral Pendleton	June 29, 2012 - July 10, 2012	N/A
DR-1903	Severe Winter Storms and Snowstorms	Grant Hampshire Hardy Mineral	February 5, 2010 - February 11, 2010	\$3,302,658.43 per event

<b>TABLE 1.2.9.A DECLARATIONS IN REGION 8 SINCE 2007</b>				
<i>Declaration Number</i>	<i>Event Type</i>	<i>Counties Affected</i>	<i>Dates of Event</i>	<i>Public Assistance</i>
DR-1881	Severe Winter Storm and Snowstorm	Pendleton	December 18, 2009 - December 20, 2009	\$3.66 per capita
DR-1696	Severe Storms, Flooding, Landslides, and Mudslides	Grant Hardy Pendleton	April 14, 2007 - April 18, 2007	\$6,708,634.83 per event

On June 3, 2018, West Virginia Governor declared a state of emergency for all Region 8 PDC counties due to heavy rainfall that caused significant flooding.



## 2.0 RISK ASSESSMENT

§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.

### 2018 UPDATE

Risk calculations have been moved to their own section here, formatted, updated, and expanded upon since the last plan update. Analysis of impacts and vulnerability for each hazard is new to this plan. All tables, maps, and charts have been updated to reflect the most up-to-date data available from a variety of sources.

### OVERVIEW

A risk assessment analyzes “the potential for damage, loss, or other impacts created by the interaction of hazards with community assets” (FEMA, 2013). The risk assessment section contains information on:

- identified hazards that threaten the region in profiles,
- the vulnerability of the area as it relates to its assets,
- a list of community assets for Region 8, and
- an analysis of planned development and development challenges.



## 2.1 RISK & VULNERABILITY

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

§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.

### 2.1.1 Risk

One of the components of the risk assessment is determining both the probability of a hazard occurring and the potential severity of that hazard event. This process helps identify which hazards pose the most significant risk to Region 8 counties and municipalities. The probability and severity of an event are largely based on historical research. The probability of an event happening is determined based on the number of events that have occurred within a certain timeframe. The timeframe is based on information available from different resources and varies depending on the data. Different sources provide data on the number of events throughout a period of years. This data is used to calculate probability.

The probability of occurrence is broken down into five categories as seen in the table to the right. The chance of occurrence of a hazard within the next year can be quantified based on historical data. This can be expressed in a numerical measure or as a percentage of 0-100 percent. It is calculated by adding the total occurrences of a specific hazard and dividing it by the years of available data.

TABLE 2.2.1.A. PROBABILITY		
Value	Description	Definition
1.1+ (101%)	Frequent	Will occur several times during a year
.76 - 1.0 (76 - 100%)	Probable	Likely to occur a few times in a year
.51 - .75 (51 - 75%)	Occasional	Likely to occur sometime during a year
.26 - .50 (26 - 50%)	Remote	Unlikely to occur in a year
0 - .25 (0 - 25%)	Improbable	So unlikely that it can be assumed it will not occur in a year

Although some hazards have no recorded occurrences, the risk may still exist. Since non-natural hazards generally do not depend on weather patterns to occur, they are not informed by this type of historical data. Non-natural and technological hazards are nearly impossible to assign a measurement of probability.

The severity of an event is based on three main factors: 1) the historical deaths, injuries, and property/crop damage; 2) the extent of potential secondary and/or cascading impacts of the hazard and; 3) the potentially impacted geographic area as determined

through risk mapping. Generally, the severity estimations will be less exact than probability estimations. The four classifications of severity are shown on the right.

The combination of hazard probability and hazard severity results are shown in a table known as the Risk Assessment Matrix. There are many definitions for the level of risk (i.e. low or very low, high or very high); for the purposes of this plan, the determinations are made to follow the *2013 West Virginia Statewide Hazard Mitigation Plan Update* document so as to align this regional plan with the state’s plan. The matrix is designed to show the hazards that are of most concern to Region 8. Each profile details the level of severity and probability, therefore generating the level of risk.

TABLE 2.2.1.B. SEVERITY	
Description	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

TABLE 2.2.1.C. RISK ASSESSMENT MATRIX						
		PROBABILITY				
		Frequent	Probable	Occasional	Remote	Improbable
SEVERITY	Catastrophic	High	High	Medium High	Medium	Medium Low
	Critical	Medium High	Medium High	Medium	Medium Low	Low
	Marginal	Medium High	Medium	Medium Low	Low	Low
	Negligible	Medium	Medium Low	Medium Low	Low	Low

### 2.1.2 Vulnerability

Vulnerability is a “measure of propensity of an object, area, individual, group, community, country, or other entity to incur the consequences of a hazard” (Coppola, 2015, p. 33). There are many aspects that contribute to the vulnerability of a people; these can include income disparity, class, race or ethnicity, gender, age, disability, health, and literacy (Thomas & Phillips, 2013, p. 2, 3). The following is a brief description of how each of the aspects can contribute to vulnerability to disasters.

- **Income Disparity:** Income disparities produce different outcomes from disasters that can cause more human suffering, and requiring more external support.
- **Class:** Lower-income families tend to live in housing that suffers disproportionately during disasters.
- **Race or Ethnicity:** Warning messages tend to be issued in the dominant language with an expectation that people will take the recommended action immediately.

- **Gender:** Domestic and stranger violence increases after a disaster. Although women tend to be the ones most likely to secure relief aid for the family, they are underrepresented and underused in recovery efforts.
- **Age:** Elderly populations are frequently reluctant to seek assistance before and secure aid after a disaster out of concern that they may lose their independence.
- **Disability:** People with disabilities experience challenges in acquiring transportation to evacuate areas as well as to access appropriate shelters and post-disaster housing.
- **Health:** Disasters can disrupt access to care. Individuals on health services are faced with life threatening circumstances if these services cannot be accessed. Disasters tend to exasperate chronic and mental health conditions.
- **Literacy:** Many emergency preparedness materials are available in written form. Few options exist for people with low reading levels, other languages, or cognitive abilities.

### 2.1.3 Perceptions

During the first steering committee meeting, members had a chance to rank each hazard identified herein according to their perception of its probability and severity. Members filled out risk assessment matrices and then they were averaged out. The table on the right denotes the perspective of hazards that the

Hazard	Committee Probability Perspective	Committee Severity Perspective	Committee Risk Assessment
Dam Failure	Remote	Critical	Medium Low
Drought	Occasional	Marginal	Medium Low
Earthquake	Remote	Critical	Medium Low
Epidemic	Remote	Critical	Medium Low
Flood	Probable	Catastrophic	High
Hazmat	Remote	Critical	Medium Low
Land Subsidence	Remote	Marginal	Low
Severe Summer Weather	Probable	Marginal	Medium
Severe Winter Weather	Probable	Marginal	Medium
Terrorism	Remote	Critical	Medium Low
Wildfire	Occasional	Marginal	Medium Low

committee members have as a whole. The steering committee feels that the hazard of highest risk in the region is flooding, while land subsidence is a low risk to the area.

Members of the public (through the online survey) and the steering committee were both asked about their level of concern for each hazard. The following table shows the committee's and the public's responses side by side to compare. In most cases the public and the committee are equally concerned with the hazards. However, in some instances, there are differences. For example, the committee members are more concerned with



flooding than the general public; this may be due to the deeper knowledge committee members have about occurrences in their areas. In contrast, the public is more concerned about severe summer weather and wildfires than the committee.

TABLE 2.1.3.B HAZARD LEVEL OF CONCERN		
<i>Hazard</i>	<i>Committee</i>	<i>Public</i>
Dam Failure	Somewhat Concerned	Somewhat Concerned
Drought	Somewhat Concerned	Somewhat Concerned
Earthquake	Somewhat Concerned	Somewhat Concerned
Epidemic	Somewhat Concerned	Somewhat Concerned
Flooding	Very Concerned	Concerned
Hazmat	Concerned	Concerned
Land Subsidence	Somewhat Concerned	Somewhat Concerned
Severe Summer Weather	Somewhat Concerned	Concerned
Severe Winter Weather	Concerned	Concerned
Terrorism	Somewhat Concerned	Somewhat Concerned
Wildfire	Somewhat Concerned	Concerned

## 2.2 HAZARDS OVERVIEW

§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.

### 2.2.1 Hazard Identification

A variety of natural and human-caused profiles were analyzed for inclusion in this plan. The following is a list of the hazards that were analyzed and how they are included or why they are excluded from this plan. Those included are described in the profiles in the following sections.

TABLE 2.2.1.A HAZARD IDENTIFICATION			
<i>Hazard</i>	<i>Status</i>	<i>Description</i>	<i>Research Sources</i>
Avalanche	Not Included	Avalanches happen mainly in the western United States and Canada.	<ul style="list-style-type: none"> <li>• Keller, Devecchio, 2015 p. 229</li> </ul>
Coastal Erosion	Not Included	The Atlantic East Coast, where coastal erosion is nearest, is approximately 350 miles away and the Pacific West Coast is approximately 2,200 miles away.	<ul style="list-style-type: none"> <li>• Google Earth</li> </ul>
Dam Failure	Included	See Section 2.3.1 Dam Failure. Included due to the presence of dams in the region.	<ul style="list-style-type: none"> <li>• Association of State Dam Safety Officials</li> <li>• National Performance of Dams Program</li> <li>• National Inventory of Dams</li> </ul>
Drought	Included	See Section 2.3.2 Drought. Included because the area has experienced droughts in the past.	<ul style="list-style-type: none"> <li>• USDA Census of Agriculture</li> <li>• National Integrated Drought Information System</li> <li>• National Centers for Environmental Information (NOAA)</li> <li>• Spatial Hazard Events and Losses Database (SHELDUS)</li> </ul>
Earthquake	Included	See Section 2.3.3 Earthquake. Included because there are occurrences of earthquakes in the past.	<ul style="list-style-type: none"> <li>• Association of American State Geologists</li> <li>• United States Geological Service</li> </ul>
Epidemic	Included	See Section 2.3.4 Epidemic. Included because the potential for epidemics is always present.	<ul style="list-style-type: none"> <li>• Centers for Disease Control and Prevention</li> <li>• Local Health Departments</li> <li>• WV Department of Health and Human Resources</li> </ul>
Extreme Temperatures	Included	See Section 2.3.8 Severe Summer Weather. Included because the area experiences many occurrences of severe summer weather including extreme heat.	<ul style="list-style-type: none"> <li>• National Centers for Environmental Information (NOAA)</li> <li>• Northeast Regional Climate Center</li> <li>• Spatial Hazard Events and Losses Database (SHELDUS)</li> </ul>
Flood	Included	See Section 2.3.5 Flood. Included because the region has experienced many floods.	<ul style="list-style-type: none"> <li>• Federal Emergency Management Agency Flood Rate Map</li> <li>• National Centers for Environmental Information (NOAA)</li> </ul>

TABLE 2.2.1.A HAZARD IDENTIFICATION			
Hazard	Status	Description	Research Sources
			<ul style="list-style-type: none"> <li>U.S. Environmental Protection Agency</li> <li>Spatial Hazard Events and Losses Database (SHELDUS)</li> </ul>
Hail	Included	See Section 2.3.8 Severe Summer Weather. Included because the area experiences many occurrences of severe summer weather including hail.	<ul style="list-style-type: none"> <li>National Centers for Environmental Information (NOAA)</li> <li>Northeast Regional Climate Center</li> <li>Spatial Hazard Events and Losses Database (SHELDUS)</li> </ul>
Hazardous Materials Incident	Included	See Section 2.3.6. Hazardous Materials Incident. Included because the roads and facilities are susceptible to hazardous materials incidents at any time.	<ul style="list-style-type: none"> <li>Federal Railroad Administration</li> <li>Pipeline and Hazardous Materials Safety Administration</li> <li>National Transportation Safety Board</li> <li>National Pipeline Mapping System</li> <li>USCG National Response Center</li> </ul>
Hurricanes	Not Included	The Atlantic East Coast, where hurricane paths are nearest, is approximately 350 miles away and the Pacific West Coast is approximately 2,200 miles away.	<ul style="list-style-type: none"> <li>Google Earth</li> </ul>
Landslide	Included	See Section 2.3.7 Land Subsidence. Included because there have been instances of land and rock slides in the area.	<ul style="list-style-type: none"> <li>United States Geological Service</li> <li>West Virginia Division of Highways</li> <li>Spatial Hazard Events and Losses Database (SHELDUS)</li> </ul>
Lightning	Included	See Section 2.3.8 Severe Summer Weather. Included because the area experiences many occurrences of severe summer weather including lightning	<ul style="list-style-type: none"> <li>National Centers for Environmental Information (NOAA)</li> <li>Northeast Regional Climate Center</li> <li>Spatial Hazard Events and Losses Database (SHELDUS)</li> </ul>
Sea Level Rise	Not Included	Sea level rise occurs in the ocean; the Atlantic East Coast is approximately 350 miles away and the Pacific West Coast is approximately 2,200 miles away.	<ul style="list-style-type: none"> <li>Google Earth</li> </ul>
Storm Surge	Not Included	Storm surges occur in the ocean; the Atlantic East Coast is approximately 350 miles away and the Pacific West Coast is approximately 2,200 miles away.	<ul style="list-style-type: none"> <li>Google Earth</li> </ul>
Terrorism	Included	See Section 2.3.10 Terrorism. Included because the potential for terrorist activities in the region is present.	<ul style="list-style-type: none"> <li>Study of Terrorism and Responses to Terrorism (START)</li> <li>West Virginia Department of Military Affairs and Public Safety (DMAPS)</li> </ul>
Tornado	Included	See Section 2.3.8 Severe Summer Weather. Included because the area experiences many occurrences of severe summer weather including tornadoes.	<ul style="list-style-type: none"> <li>National Centers for Environmental Information (NOAA)</li> <li>The Tornado Project</li> <li>Spatial Hazard Events and Losses Database (SHELDUS)</li> </ul>
Tsunamis	Not Included	The Atlantic East Coast, where tsunamis would be closest, is approximately 350 miles away and the Pacific West Coast is approximately 2,200 miles away.	<ul style="list-style-type: none"> <li>Google earth</li> </ul>
Wind	Included	See Section 2.3.8 Severe Summer Weather. Included because the area experiences many occurrences of severe summer weather including wind events.	<ul style="list-style-type: none"> <li>National Centers for Environmental Information (NOAA)</li> <li>Northeast Regional Climate Center</li> </ul>

TABLE 2.2.1.A HAZARD IDENTIFICATION			
<i>Hazard</i>	<i>Status</i>	<i>Description</i>	<i>Research Sources</i>
			<ul style="list-style-type: none"> <li>• Spatial Hazard Events and Losses Database (SHELDUS)</li> </ul>
Winter Weather	Included	See Section 2.3.9 Severe Winter Weather. Included because the area experiences many occurrences of severe winter weather.	<ul style="list-style-type: none"> <li>• National Centers for Environmental Information (NOAA)</li> <li>• Northeast Regional Climate Center</li> <li>• Spatial Hazard Events and Losses Database (SHELDUS)</li> </ul>
Wildfire	Included	See Section 2.3.11 Wildfire. Included because there have been occurrences of wildfires in the area.	<ul style="list-style-type: none"> <li>• National Centers for Environmental Information (NOAA)</li> <li>• West Virginia Division of Forestry</li> <li>• Spatial Hazard Events and Losses Database (SHELDUS)</li> </ul>
Volcanoes	Not Included	The closest monitored volcano is in Yellowstone National Park in Wyoming and is approximately 1,550 miles away.	<ul style="list-style-type: none"> <li>• Google Earth</li> <li>• United States Geological Survey</li> </ul>

The steering committee settled on a list of 11 hazards. In order to maintain a manageable list, the committee grouped certain hazards under one profile heading; for example, hail, lightning, tornadoes, and wind were grouped under severe summer weather.

- Dam Failure
- Drought
- Earthquake
- Epidemic
- Flood
- Hazardous Materials Incident
- Land Subsidence
- Severe Summer Weather
  - Hail
  - Lightning
  - Tornado
  - Wind
- Severe Winter Weather
  - Blizzard
  - Ice Storm
  - Winter Storm
  - Winter Weather
- Terrorism
- Wildfire

### 2.2.2 Complicating Variables

Direct consequences of disasters can include fatalities, injuries, and damages to humans, animals or property. However, disasters do not end there; there are a number of indirect effects, both tangible and intangible associated with disasters even before a disaster strikes. Some examples of these include loss of livelihood and income, loss of community and population, mental and psychosocial impacts, costs of rebuilding, repair or replacement, loss of inventory, wages and tax revenue, etc. (Coppola, 2015). All of these also have a cost associated with them but it is much more difficult to assign a specific dollar value and quantify accurately.

A variety of situations could occur that would result in a disruption to a number of critical systems throughout Region 8 counties. Some hazards are complicated by a series of loosely-related variables; these are often considered *cascading hazards*. For example, high winds may cause sporadic damage throughout the county, but often do not become a significant countywide concern until a large number of residents are without power.

A single event may not always reach all impacts described herein. However, it is important to understand that the impacts of hazards go beyond what is seen immediately before or after the event or incident. The effects of one event can be years or months in the making and last months or even years, especially where public health, social, economic, environmental and infrastructure impacts are concerned.

### 2.2.3 Hazards and Climate Change

Many natural hazards are related to climate such as droughts, severe weather, floods and wildfires. There is an important distinction between weather and climate. Weather refers to the atmospheric conditions of a geographical region over a short period of time, such as days or weeks. Climate, in contrast, refers to the atmospheric conditions of a geographical area over long periods of time, such as years, or even decades (Keller, Devecchio, 2015, pp. 406-407).

According to the U.S. Global Change Research Program (2016), there are several weather and climate changes that have already been observed in the United States.

- Since recordkeeping began in 1895, the average U.S. temperature has increased by 1.3°F to 1.9°F with most of the increase happening since 1970. In addition, the first decade of the 2000s has been the warmest on record.



- The average precipitation across the U.S. has increased since 1900 with some areas experiencing higher than the national average and some lower. Heavy downpours are increasing, especially over the last 30-50 years.
- Drought events have increased in the west. Changes in precipitation and runoff, combined with changes in consumption and withdrawal, have reduced surface and groundwater supplies in many areas.
- Some types of severe weather events have experienced changes; heat waves are more frequent and intense, and cold waves have become less frequent and intense overall.
- The intensity, frequency, and duration of North Atlantic hurricanes have increased since the early 1980s.

Climate change can have a significant impact on human health and the environment. The changes mentioned above can affect the environment by leading to changes in land-use, ecosystems, infrastructure conditions, geography and agricultural production. Extreme heat, poor air quality, reduced food and water supply and quality, changes in infectious agents and population displacement can lead to public health concerns such as heat-related illnesses, cardiopulmonary illnesses, food, water and vector-borne diseases and have consequences on mental health and stress (USGCRP, 2016).

The National Climate Assessment (NCA) defined climate trends for national U.S. regions in 2014. The major trends are seen to be

- wildfires and heat waves on the west coast,
- rising temperatures and increased severity and frequency of winter storms in the middle of the country,
- more rain and flooding in the Midwest and northeastern parts of the country, and
- an increase in sea levels in the mid-Atlantic with an increase of hurricane activity in the southeastern states.

In West Virginia, the trend will be an increase in extreme precipitation which will lead to more events of hazards such as flooding, and possible dam failures or reportable disease epidemics.

## 2.3 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 following table contains a summary of all the hazards analyzed, presented in alphabetical order. For a detailed description of the hazards and methodology for the information presented in the table, refer to each separate profile.

TABLE 2.3.A. HAZARD SNAPSHOTS

Hazard	Period of Occurrence	Warning Time	Potential Impacts	Probability	Severity	Risk	Loss/Damage Estimate
Dam Failure	At any time	Minimal – depends on frequency of inspection and maintenance practices.	Potential loss of human life, economic loss, environmental damage, disruption of lifeline facilities.	Improbable	Critical	Low	Cost of maintenance or repair depends on each dam.
Drought	Summer months or extended periods with no precipitation	Weeks	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 agribusiness losses. Minimal risk of damage or cracking to structural foundations, due to soils.	Remote	Negligible	Low	Agricultural losses over a period of several years have not occurred due to drought conditions.
Earthquake	At any time	None	According to FEMA, areas with a PGA of 2 to 4 (0.02 to 0.04) will incur little to no damage with no function loss.	Improbable	Marginal	Low	Over \$443 billion in a worst case scenario.
Epidemic	At any time	Months to weeks	Potential loss of human life, economic loss, disruption of lifeline facilities	Occasional	Critical	Medium	Ob average, about \$488 per person per year.
Flood	Potomac 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	River Flood – 3 to 5 days Flash Flood – Minutes to hours	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.	Frequent	Critical	Medium High	NCEI and SHELDUS estimates over \$186 million for damages
Hazardous Materials	At any time	None	Potential loss of human life, economic loss, environmental damage	Frequent	Negligible	Medium	PHMSA data indicates that each incident could cost, on average \$28,500.
Land	At any time – Chance	Weeks to months – Some	Economic losses such as decreased land	Occasional	Negligible	Medium	DOH cost to repair

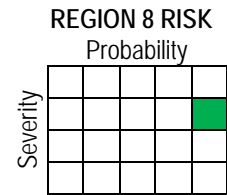


**TABLE 2.3.A. HAZARD SNAPSHOTS**

<i>Hazard</i>	<i>Period of Occurrence</i>	<i>Warning Time</i>	<i>Potential Impacts</i>	<i>Probability</i>	<i>Severity</i>	<i>Risk</i>	<i>Loss/Damage Estimate</i>
Subsidence	of occurrence increases following long periods of heavy rain, snowmelt, or near construction activity.	instances of land subsidence can occur quickly without warning, but often in the context of other storm events.	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.			Low	road slips averages between \$25K and \$50K.
Severe Summer Weather	Hail – at any time, during thunderstorms. Thunderstorm – spring, summer, and fall months. Wind and tornado – at any time, primarily between months of March and August.	Hail – minutes to hours Thunderstorm – minutes to hours Wind and tornado – minutes to hours.	Hail - Large hail can minimally damage property (facilities) as well as crops Thunderstorm: Utility damage and outages, infrastructure damage (transportation and communication systems). Impacts human life, health, and public safety. Wind and tornado - 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	Frequent	Critical	Medium High	Average cost per event is over \$5K.
Severe Winter Weather	During winter months	Snow – Days Ice – Minutes to hours	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	Frequent	Marginal	Medium High	Average cost per event is over \$2K
Terrorism	At any time	Minimal – Depends on the presence of a threat	Potential loss of human life, economic loss, environmental damage, disruption of lifeline facilities.	Improbable	Critical	Low	N/A
Wildfire	At any time – primarily during summer months	Minimal	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.	Frequent	Negligible	Medium	Federal cost of firefighting averages around \$285 per acre.

### 2.3.1 Dam Failure

A dam is a barrier, generally made of earth, concrete, or rock fill, that impounds water.



#### HAZARD OVERVIEW

The West Virginia Department of Environmental Protection (WVDEP) defines dams as man-made barriers or obstructions that impounds water and must be at least 25 feet or more in height and impound 15 or more acre-feet of water volume (WVDEP, 2009). The WVDEP is responsible for inspecting existing dams and those under construction, reviewing design plans, and reporting emergencies (WVDEP, 2016). There are four categories of dams; the Mine Safety and Health Administration defines them as follows.

- **Class 1 or High Hazard:** failure would probably cause loss of human life.
- **Class 2 or Significant Hazard:** failure would likely not result in loss of human life, but can cause economic loss, environmental damage, or disruption of lifeline facilities.
- **Class 3 or Low Hazard:** failure would result in no probable loss of human life and low economic and/or environmental loss.
- **Class 4 or Negligible Hazard:** losses would mainly be restricted to the dam.

Dams are used for a variety of purposes. In Region 8, the majority of the dams are used for flood control, water supply or recreation. The following describes these types of dams.

- **Flood Control:** Prevents loss of life and property caused by flooding. They impound floodwaters and either release them under control to the river below or store or divert the water for other uses.
- **Recreation:** These are designed for boating, skiing, camping, picnic areas, and boat launches and can all be supported by these dams.
- **Water Supply:** This type of type of dam is used to gather and supply water from rivers to urban areas.

#### POSSIBLE CAUSES

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 types of dam failures: hydraulic, seepage, and structural.

- **Hydraulic Failure (Overtopping):** 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 (Piping):** 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. “When trees and woody plants are allowed to grow on earthen dams, they can hinder safety inspections, can interfere with safe operation, or can even cause dam failure” (USDHS, 2005).

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.

## LOCATION AND EXTENT

There are 88 dams reported in the National Inventory of Dams for the counties of Region 8; 23 in Grant County, 4 in Hampshire County, 10 in Hardy County, 32 in Mineral County, and 19 in Pendleton County. Of the total dams, 58 are classified as high hazard dams, 24 are significant hazard, 3 are low hazard, and 3 are unknown.

TABLE 2.3.1.A DAMS IN REGION 8

Dam Name	Owner Type	Height (ft.)	Hazard Class	Primary Purpose	Dam Type	River	County
Elk Run WS Reservoir	Private	25	Unknown	Water supply	Other	-	Grant
Lunice Creek No. 09	Local government	87	High	Flood control	Earth	North Fork	Grant

**TABLE 2.3.1.A DAMS IN REGION 8**

<i>Dam Name</i>	<i>Owner Type</i>	<i>Height (ft.)</i>	<i>Hazard Class</i>	<i>Primary Purpose</i>	<i>Dam Type</i>	<i>River</i>	<i>County</i>
Lunice Creek No. 10	Local government	87	High	Flood control	Earth	Saltblock Run	Grant
Lunice Creek No. 11	Local government	83.4	High	Flood control	Earth	Lunice Creek	Grant
Mill Run WS Dam	Private	17	High	Water supply	Other	Mill Run	Grant
Mt. Storm Lake Dam	Public utility	153	High	Other	Rock fill, earth	Stony River	Grant
N&S Mill Creek No. 03	Local government	89	Significant	Flood control	Earth	Rough Run	Grant
N&S Mill Creek No. 04	Local government	68	Significant	Flood control	Earth	South Mill Creek	Grant
N&S Mill Creek No. 16	Local government	67	High	Flood control	Earth	Gum hollow	Grant
N&S Mill Creek site No. 07	Local government	75.2	High	Flood control	Rock fill, earth	South Mill Creek	Grant
New Creek No. 12 Dam	Local government	77	High	Flood control	Earth	U.T. Of New Creek	Grant
New Creek No. 14 Dam	Local government	110	High	Flood control	Earth	Linton Creek	Grant
Patterson Creek No. 01 Dam	Local government	52	High	Flood control	Earth	Patterson Creek	Grant
Patterson Creek No. 02 Dam	Local government	57.5	High	Flood control	Earth	Tr-Patterson Creek	Grant
Patterson Creek No. 03 Dam	Local government	55.5	High	Flood control	Earth	Thorn Run	Grant
Patterson Creek No. 04 Dam	Local government	69	Significant	Flood control	Earth	Middle Fork	Grant
Patterson Creek No. 06 Dam	Local government	82	High	Flood control	Earth	Elklick Run	Grant
Patterson Creek No. 12 Dam	Local government	75	Significant	Flood control	Earth	Thorn Run	Grant
Patterson Creek No. 13 Dam	Local government	86	Significant	Flood control	Earth	Rossen Run	Grant
Patterson Creek No. 41 Dam	Local government	88	High	Flood control	Earth	North Fork	Grant
Patterson Creek No. 49 Dam	Local government	48	High	Flood control	Earth	Patterson Creek	Grant
Pond No. 01 Dam	Public utility	0	Unknown	Water supply	Earth	Buffalo Creek	Grant
Stony River Dam	Private	48.5	Significant	Flood control	Gravity	Stony Rv of Potomac Rv	Grant
Boone farms Lake Dam	Private	31	Significant	Recreation	Earth	Little Cacapon	Hampshire
Crooked Run Lake Dam	Private	26	Significant	Recreation	Earth	Tr. Of Cacapon	Hampshire
Ferndale Farms Recreation Lake	Private	23	Significant	Recreation	Earth	U.T. South Branch	Hampshire
Wilson Big Hollow Dam	Private	32	Significant	Recreation	Other	-	Hampshire
Lost River No. 04 Dam	Local government	90.9	High	Flood control	Earth	Kimsey Run	Hardy
Lost River No. 10 Dam	Local government	0	Unknown	Flood control	Earth	Camp Branch	Hardy
Lost River No. 27 Dam	Local government	0	High	Flood control	Earth	Upper cove Run	Hardy
Norman Wratford Lake	Unknown	Unknown	Unknown	Unknown	Unknown	South Fork South Branch Potomac	Hardy
Rock Cliff Dam	Federal	66	Low	Flood control	Earth	Trout Run	Hardy
South Fork No. 01 Dam	Local government	122	Significant	Flood control	Earth	Shook's Run	Hardy
South Fork No. 02 Dam	Local government	123.1	Significant	Flood control	Earth	Stump Run	Hardy
South Fork No. 04 Dam	Local government	116.7	High	Flood control	Earth	Rodabaugh Run	Hardy
South Fork No. 05 Dam	Local government	107	High	Flood control	Earth	Radabaugh	Hardy



**TABLE 2.3.1.A DAMS IN REGION 8**

<i>Dam Name</i>	<i>Owner Type</i>	<i>Height (ft.)</i>	<i>Hazard Class</i>	<i>Primary Purpose</i>	<i>Dam Type</i>	<i>River</i>	<i>County</i>
Thorn Bottom Farm Lake	Private	37	Low	Fire protection, stock, or small fish pond	Earth	Trout Run	Hardy
Warden Lake	State	30	High	Recreation	Rock fill, earth	Moore's Run	Hardy
Lakewood Dam	Private	74	High	Recreation	Rock fill, earth	Death Valley	Mineral
Markwood cedar Lake Dam	Private	0	Low	-	Earth	Patterson Creek trib	Mineral
New Creek Dam No. 01	Local government	42	High	Flood control	Earth	New Creek	Mineral
New Creek Dam No. 05	Local government	35	High	Flood control	Earth	New Creek	Mineral
New Creek Dam No. 07	Local government	51	High	Flood control	Earth	New Creek	Mineral
New Creek Dam No. 09	Local government	58	High	Flood control	Earth	New Creek	Mineral
New Creek Dam No. 10	Local government	63	High	Flood control	Earth	New Creek	Mineral
New Creek Dam No. 16	Local government	101	High	Flood control	Earth	Thunderhill Run	Mineral
New Creek Dam No. 17	Local government	68.3	High	Flood control	Earth	Ash Spring Run	Mineral
Old Keyser Reservoir	Local government	25	High	Other	Concrete, earth	Limestone Run	Mineral
Patterson Creek No. 50	Local government	73	High	Flood control	Earth	Patterson Creek	Mineral
Patterson Creek No.14	Local government	63	High	Flood control	Earth	Harness Run	Mineral
Patterson Creek No.15	Local government	85	High	Flood control	Earth	Mike's Run	Mineral
Patterson Creek No.20	Local government	61	High	Flood control	Earth	Liller Run	Mineral
Patterson Creek No.21	Local government	74	High	Flood control	Earth	Mill Creek	Mineral
Patterson Creek No.22	Local government	54	Significant	Flood control	Earth	Wild meadow Run	Mineral
Patterson Creek No.24	Local government	36	Significant	Flood control	Earth	Patterson Creek	Mineral
Patterson Creek No.25	Local government	59	High	Flood control	Earth	Johnson Run	Mineral
Patterson Creek No.26	Local government	49	High	Flood control	Earth	Patterson Creek	Mineral
Patterson Creek No.27	Local government	39	High	Flood control	Earth	Patterson Creek	Mineral
Patterson Creek No.28	Local government	50	High	Flood control	Earth	Cabin Run	Mineral
Patterson Creek No.30	Local government	64	High	Flood control	Earth	O'Neil's Run	Mineral
Patterson Creek No.32	Local government	65	High	Flood control	Earth	Patterson Creek	Mineral
Patterson Creek No.36	Local government	38	High	Flood control	Earth	Patterson Creek	Mineral
Patterson Creek No.37	Local government	47	High	Flood control	Earth	Patterson Creek	Mineral
Patterson Creek No.38	Local government	51	Significant	Flood control	Earth	Hollenbeck Run	Mineral
Patterson Creek No.44	Local government	34	High	Flood control	Earth	Long pasture	Mineral
Patterson Creek No.45	Local government	42	High	Flood control	Earth	Grave yard Run	Mineral
Patterson Creek No.46	Local government	67	High	Flood control	Earth	Painter Run	Mineral
Patterson Creek No.47	Local government	31	Significant	Flood control	Earth	Patterson Creek	Mineral
Patterson Creek No.48	Local government	71	High	Flood control	Earth	Pursley Run	Mineral
Patterson Creek No.52	Local government	36	Significant	Flood control	Earth	Mud Run	Mineral
South Fork No. 06	Local government	105.5	Significant	Flood control	Earth	South Fork	Pendleton
South Fork No. 09	Local government	99.2	Significant	Flood control	Earth	Dice Run	Pendleton
South Fork No. 17	Local government	111.5	High	Flood control	Earth	Little Fork	Pendleton
South Fork No. 19	Local government	81	High	Flood control	Earth	South Fork	Pendleton
South Fork No. 21	Local government	94.8	High	Flood control	Earth	Little Rough M	Pendleton





TABLE 2.3.1.A DAMS IN REGION 8							
Dam Name	Owner Type	Height (ft.)	Hazard Class	Primary Purpose	Dam Type	River	County
South Fork No. 27	Local government	71.2	High	Flood control	Earth	South Fork	Pendleton
South Fork No. 32	Local government	59.5	High	Flood control	Earth	South Fork	Pendleton
South Fork No. 33	Local government	59.9	High	Flood control	Earth	Fisher Run	Pendleton
South Fork No. 35	Local government	65.3	Significant	Flood control	Earth	South Fork	Pendleton
South Fork No. 36	Local government	53.9	High	Flood control	Earth	Little stony Run	Pendleton
South Fork No. 37	Local government	97.7	High	Flood control	Earth	Camp Run	Pendleton
South Fork No.10	Local government	75.6	Significant	Flood control	Earth	Stony Run	Pendleton
South Fork No.11	Local government	89.1	Significant	Flood control	Earth	Road Run	Pendleton
South Fork No.12	Local government	64	Significant	Flood control	Earth	Detimer Run	Pendleton
South Fork No.13	Local government	80.1	High	Flood control	Earth	Hawes Run	Pendleton
South Fork No.14	Local government	72.5	High	Flood control	Earth	Broad Run	Pendleton
South Fork No.15	Local government	88.4	High	Flood control	Earth	Mitter Run	Pendleton
South Fork No.16	Local government	73.6	Significant	Flood control	Earth	George Run	Pendleton
South Fork No.18	Local government	76	High	Flood control	Earth	Stony Run	Pendleton

Source: National Inventory of Dams and National Performance of Dams Program

Even though a region is defined geographically, it doesn't mean that it is self-containing; hazards originate in other areas outside the borders of Region 8 can still have an effect on the counties in Region 8. One example of this are the dams that are located in Maryland that, where they to fail, could impact counties in region 8. These dams include the following:

- Jennings Randolph Dam on the North Branch of the Potomac River
- Savage River Dam on the Savage River
- Industrial Dam on the North Branch of the Potomac River

## HISTORICAL OCCURRENCES

There have been only two incidents in all the counties of Region 8 that have been reported. The first was at Stony River Dam in Grant County; it experienced an inflow flood from a hydrologic event in 1914 (NPDP, n.d.).

According to NCEI, on July 29, 2017 in Bayard (Grant County) a strong upper level low interacted with a frontal boundary near the Mid-Atlantic region and low pressure formed along the boundary. High moisture content and thunderstorms led to widespread flooding across the Mid-Atlantic region. Due to this activity, a levee breached on Buffalo Creek pushing it out of its banks flooding nearby areas.

## IMPACTS AND VULNERABILITY

Dam failures themselves do not pose a threat to public health; the cascading effects that occur after a failure are more concerning. When a dam fails it causes flooding downstream that can cause death, injury, and illnesses relating to water-borne diseases and standing water. The consequences of flooding from a dam can cause damage to buildings and transportation infrastructure and power outages. As a result of flooding, people might have to evacuate and be displaced from their homes. In a large enough event, this can translate into economic loss for the area due to businesses closing and loss of workforce including the cost of clean-up activities after the event.

## LOSS AND DAMAGES

There have been no losses of life or property in any Region 8 counties due to a dam failure. However, this does not mean that there will never be any losses due to this type of event.

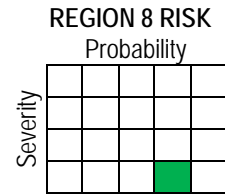
“Dam safety risk assessment is like a stool that stands on three legs. These legs quantify the likelihood that various initiating events (hydrologic, seismic, structural/internal, mechanical, or human error) will occur; the likelihood that the dam would fail given these initiating events; and the likelihood that, given a failure, the resulting flood wave would result in various levels of damage. The meaningful quantification of risk depends on credible estimates of the damages that would result from each significant failure scenario. Loss of human life is generally accepted as the most important consequence so it often dominates dam-safety decisions. Unfortunately, the confidence with which life loss can currently be estimated is low. This high level of uncertainty applies to both statistical confidence limits and to expert opinion. As such, this single limitation is a critical hindrance to the credibility and value of dam-safety risk assessment results. Indeed, some would like to push the stool over on its weak leg and abandon probabilistic risk assessment altogether” (USACE, 2002).

RISK ASSESSMENT

TABLE 2.3.1.B DAM FAILURE RISK CALCULATION			
<i>Probability</i>		<i>Severity</i>	<i>Risk</i>
IMPROBABLE		CRITICAL	LOW
Since 1914 there have been no dam failure events or incidents in the area. Because of the lack of historical occurrences and the programs that are in place to ensure proper maintenance of dams, this hazard has a low probability of occurrence to the area.	+	Many of the dams in the region are categorized as a high or significant hazard class meaning that there could potentially be loss of human life and damage to the environment and critical infrastructure.	=
			According to the risk assessment matrix, a probability of 'improbable' and a severity of 'critical' puts dam failure risk at low.

### 2.3.2 Drought

A drought is a natural phenomenon that occurs when an area or region does not receive the normal amount of precipitation and persists for several weeks or months.



#### HAZARD OVERVIEW

A drought is a “prolonged dry period in natural climate cycle. It is a slow-onset phenomenon caused by rainfall deficit combined with other predisposing factors. They are often predictable” (WHO).

The most prevalent method of measuring drought severity in the United States is the Palmer Drought Severity Index (PDSI) developed in 1965. The index takes a number of factors into account to assign a score between -4 (extremely dry) and +4 (extremely wet), with 0 being the “normal” value (Palmer, 1965). Palmer drought values typically reflect long term drought, but can be calculated both monthly and weekly. The PDSI is shown graphically to the right.

	< -4.0	Extreme drought
	-3.99 to -3.0	Severe drought
	-2.99 to -2.0	Moderate drought
	-1.99 to -1.0	Mild drought
	-0.99 to -0.5	Incipient drought
	-0.49 to 0.49	Near normal
	0.50 to 0.99	Incipient moist spell
	1.0 to 1.99	Moist spell
	2.0 to 2.99	Unusual moist spell
	3.0 to 3.99	Very moist spell
	> 4.0	Extreme moist spell

There are four types of droughts, increasing in severity level: meteorological drought, hydrological drought, agricultural drought, and socioeconomic drought.

- **Meteorological Drought:** Dry weather patterns dominating an area.
- **Hydrological Drought:** Usually after several months of meteorological drought, when low water supplies become noticeable (i.e. low water levels in streams and reservoirs).
- **Agricultural Drought:** When crops become affected by the drought conditions.
- **Socioeconomic Drought:** Relates the supply and demand of various commodities to drought.

Drought conditions are not the same everywhere. To know what drought conditions for the area are, it is necessary to know the normal precipitation amount and average climate of the region. The NCEI provides average “normal” of precipitation and temperatures; data was collected from weather stations located in the county seats for each

county. The precipitation for the whole year in the entire region averages 3.04 inches per month, or 36.5 inches a year.

TABLE 2.3.2.B CLIMATE NORMALS IN REGION 8												
Month	Precipitation (Inches)					Average Precipitation Region 8 (Inches)	Average Temperature (°F)					Average Temperature Region 8 (°F)
	Petersburg	Romney	Moorefield	Keyser	Franklin		Petersburg	Romney	Moorefield	Keyser	Franklin	
	January	2.35	2.25	1.82	2.92		2.16	2.3	32.5	30.2	30.7	
February	2.56	2.24	1.85	2.65	1.98	2.3	35.1	33.2	33.6	33	34.6	33.9
March	3.5	3.23	2.76	3.63	3.1	3.2	42.6	41.3	41.7	41.2	42.3	41.82
April	3.33	3.14	2.63	3.65	2.96	3.1	52.4	52.1	51.9	52	51.7	52.02
May	4.14	3.94	3.73	4.1	4.08	4.0	61.2	61.3	61.4	61.4	60.3	61.12
June	3.54	2.94	3.39	3.36	3.13	3.3	69.7	70.1	70.2	70.1	68.2	69.66
July	4.37	3.95	4.01	3.99	4.23	4.1	73.7	74.1	73.7	74.2	71.5	73.44
August	3.13	3.16	3.03	3.36	3.41	3.2	72.3	72.6	72.6	72.5	70.5	72.1
September	3.04	3.44	3.09	3.52	3.41	3.3	65.6	65.2	65.3	65.3	63.7	65.02
October	2.51	2.52	2.39	2.71	2.3	2.5	54.2	53.6	54.3	53.2	53.8	53.82
November	2.84	2.69	2.34	3.11	2.87	2.8	44.7	43.5	43.7	43.1	44.3	43.86
December	2.43	2.42	1.98	2.87	2.4	2.4	35.2	33.7	34	33.1	35	34.2
<b>Totals</b>	<b>37.74</b>	<b>35.92</b>	<b>33.02</b>	<b>39.87</b>	<b>36.03</b>	<b>36.5</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

## POSSIBLE CAUSES

Precipitation falls in uneven patterns across the country; the amount of precipitation at a particular location varies from year to year, but over a period of years, the average amount is fairly constant. The amount of rain and snow also varies with the seasons. Even if the total amount of rainfall for a year is about average, rainfall shortages can occur during a period when moisture is critically needed for plant growth, such as in the early summer. When little or no rain falls, soils can dry out and plants can die. When rainfall is less than normal for several weeks, months, or years, the flow of streams and rivers declines, water levels in lakes and reservoirs fall, and the depth to water in wells increases. If dry weather persists and water-supply problems develop, the dry period can become a drought (USGS, 2016).

## LOCATION AND EXTENT

All Region 8 PDC counties have experienced droughts that affected the entire region in the past. This hazard is a region-wide hazard that can affect all areas and jurisdictions within the region. Droughts are widespread events that may extend to several states in

varying degrees of severity. In Region 8 counties, the extent of a drought would be equal given the region’s geography and environmental qualities.

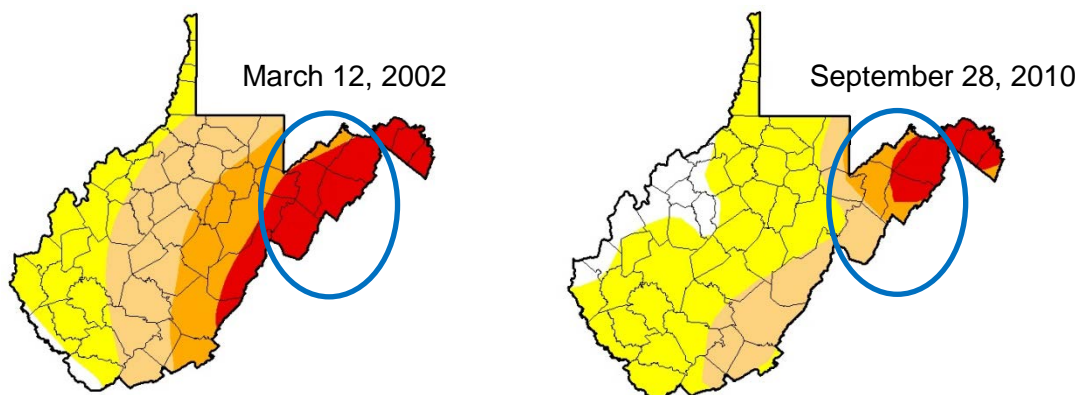
A drought can vary in severity throughout the year; what starts out as a mild drought can reach severe or extreme drought status and then return to a mild drought. This process could take weeks or even months and the effects could be felt even months after the drought conditions are over.

### HISTORICAL OCCURRENCES

The table below represents the amount of weeks each county in Region 8 has spent under drought conditions since 2000. D-0 (Abnormally Dry) weeks are the total number of weeks there have been droughts in the counties; subsequent categories’ weeks in drought conditions are not in addition to the previous drought severity weeks, but a part of them. For example, Grant County has spent 324 weeks in D-0 conditions, of which 78 were a moderate drought (D-1), of which 10 weeks were a severe drought (D-2), of which 9 were extreme drought (D-3) conditions. No counties have experienced exceptional droughts (D-4) since 2000.

County	D-0 Weeks	D-1 Weeks	D-2 Weeks	D-3 Weeks	D-4 Weeks
Grant	324	78	10	9	0
Hampshire	280	82	24	11	0
Hardy	293	88	28	12	0
Mineral	300	62	20	7	0
Pendleton	346	84	15	5	0

There have been two instances when there has been a severe drought in the counties of Region 8; the first instance was at the end of February through the middle of April of 2002, and the second was during September of 2010. The maps below illustrate the drought conditions in the state and in Region 8 on a select week of these extreme droughts.



## IMPACTS AND VULNERABILITY

Some of the impacts of each type of drought include the following.

<b>D0</b>	Abnormally Dry	<p><u>Going into drought:</u></p> <ul style="list-style-type: none"> <li>• short-term dryness slowing planting, growth of crops or pastures</li> </ul> <p><u>Coming out of drought:</u></p> <ul style="list-style-type: none"> <li>• some lingering water deficits</li> <li>• pastures or crops not fully recovered</li> </ul>
<b>D1</b>	Moderate Drought	<ul style="list-style-type: none"> <li>• Some damage to crops, pastures streams, reservoirs, or wells low, some water shortages developing or imminent</li> <li>• Voluntary water-use restrictions requested</li> </ul>
<b>D2</b>	Severe Drought	<ul style="list-style-type: none"> <li>• Crop or pasture losses likely</li> <li>• Water shortages common</li> <li>• Water restrictions imposed</li> </ul>
<b>D3</b>	Extreme Drought	<ul style="list-style-type: none"> <li>• Major crop/pasture losses Widespread water shortages or restrictions</li> </ul>
<b>D4</b>	Exceptional Drought	<ul style="list-style-type: none"> <li>• Exceptional and widespread crop/pasture losses</li> <li>• Shortages of water in reservoirs, streams, and wells creating water emergencies</li> </ul>

## LOSS AND DAMAGES

SHELDUS provides drought data from 1977 to 1999. In it, the total amount of crop damages amounted to over \$12 million. The NCEI does not report any drought data from 2000 through the present but has data for droughts in 1997, 1998, and 1999 with damage totaling over \$3 million.

Droughts mostly affect crops; one way of determining if there has been any crop damage in the last years is by consulting the USDA NASS census of agriculture data for 1997, 2002, 2007, and 2012 to spot trends in loss or gain of crops over the years when comparing it to the drought years that are presented previously, 2002 and 2010.

Between the census years of 1997 and 2002, all counties increased their farms except Pendleton which lost six. However, the harvested acres of cropland and total sales increased in every county despite losses in previous census years.

**TABLE 2.3.2.D USDA CENSUS DATA 1997-2002**

<i>Farms (units)</i>					
<i>County</i>	<i>1997</i>	<i>2002</i>	<i>2007</i>	<i>2012</i>	<i>Δ (%) 1997-2002</i>
Grant	375	357	471	486	30
Hampshire	547	635	677	798	46
Hardy	467	468	514	494	6
Mineral	343	465	493	429	25
Pendleton	590	546	600	556	-6
<b>Totals</b>	<b>2,322</b>	<b>2,471</b>	<b>2,755</b>	<b>2,763</b>	<b>19</b>
<i>Harvested Cropland (Acres)</i>					
<i>County</i>	<i>1997</i>	<i>2002</i>	<i>2007</i>	<i>2012</i>	<i>Δ (%) 1997-2002</i>
Grant	14,730	14,758	15,922	18,519	26
Hampshire	25,121	27,851	25,993	30,623	22
Hardy	20,889	21,684	22,891	27,240	30
Mineral	13,934	15,012	14,708	13,946	0
Pendleton	18,237	19,804	17,158	21,692	19
<b>Totals</b>	<b>92,911</b>	<b>99,109</b>	<b>96,672</b>	<b>112,020</b>	<b>21</b>
<i>Total Sales (Dollars)</i>					
<i>County</i>	<i>1997</i>	<i>2002</i>	<i>2007</i>	<i>2012</i>	<i>Δ (%) 1997-2002</i>
Grant	\$35,651,000	\$39,251,000	\$42,123,000	\$51,272,000	30.6
Hampshire	\$15,945,000	\$19,642,000	\$32,549,000	\$39,183,000	99.5
Hardy	\$111,541,000	\$123,627,000	\$148,029,000	\$188,970,000	52.9
Mineral	\$8,537,000	\$14,195,000	\$15,470,000	\$22,243,000	56.7
Pendleton	\$68,297,000	\$74,012,000	\$91,788,000	\$118,766,000	60.5
<b>Totals</b>	<b>\$239,971,000</b>	<b>\$270,727,000</b>	<b>\$329,959,000</b>	<b>\$420,434,000</b>	<b>55.3</b>

Baseline information  
 Gain or no change from previous year  
 Loss from previous year

Even though the farms or harvested acres may have dropped from one census year to the next, the total sales in dollars have always increased. Therefore, overall, there have been zero economic losses from one year to the next.

## RISK ASSESSMENT

To calculate probability, data was analyzed by drought type, using the county with the most consecutive weeks under those conditions as a representative of the region. The



number of events is taken from data in the US Drought Monitor. The following table illustrates the calculations.

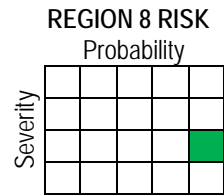
TABLE 2.3.2.E PROBABILITY OF DROUGHT				
Drought Type	Representative County (Consecutive Weeks)	Number of Events since 2000	Average Number of Events per Year	Overall Probability of Drought
D-0	Pendleton (346)	27	1.5	Frequent
D-1	Hardy (88)	7	0.41	Remote
D-2	Hardy (28)	3	0.17	Improbable
D-3	Hardy (12)	2	0.11	Improbable
D-4	N/A (0)	0	0	Improbable

To obtain an average probability, the number of events were added together and divided by five (for each type of drought event). The average probability of drought events in the region is equal to 0.43 events per year making drought a remote event overall.

TABLE 2.3.2.F DROUGHT RISK CALCULATION					
Probability			Severity		Risk
REMOTE			NEGLIGIBLE		LOW
Events	39	+	All data indicates that there has been minimal loss from drought conditions throughout the years in Region 8	=	The risk assessment matrix calculates this type of hazard to be of a low risk to the area.
Years	17				
There is a remote probability that a drought event will occur during a given year.					

### 2.3.3 Earthquake

The moving or shifting of the Earth's tectonic plates due to built-up pressure is known as an earthquake.



#### HAZARD OVERVIEW

The Earth's sudden release of stored energy may manifest itself by the shaking or displacement of the ground, known as an earthquake. According to the U.S. Geological Society, based on historical trends, the frequency of an earthquake occurrence inversely relates to its magnitude. There are an estimated 1.3 million earthquakes every year with a magnitude between 2.0 and 2.9 while there is, on average, one magnitude 8.0 or higher earthquake annually.

Earthquakes move or shake the earth in three different directions depending on the plate movements: convergent, divergent, and transform generating primary and secondary waves. There are three common ways to measure an earthquake:

- **Richter Scale:** Developed in 1935, the Richter scale measures the scale and severity of an earthquake, The magnitude of an earthquake can range between 0 and 10. The effects of an earthquake can extend far beyond the site of its occurrence.
- **Modified Mercalli Scale:** The modified Mercalli scale measures earthquakes based on their intensity on the surface. This scale uses roman numerals I through XII to denote detection and damage levels associated with an earthquake.
- **Peak Ground Acceleration (PGA):** PGA is “the maximum ground acceleration that occurred during earthquake shaking at a location. PGA is equal to the amplitude of the largest absolute acceleration recorded on an accelerogram at a site during a particular earthquake” (Douglas, 2003).

#### POSSIBLE CAUSES

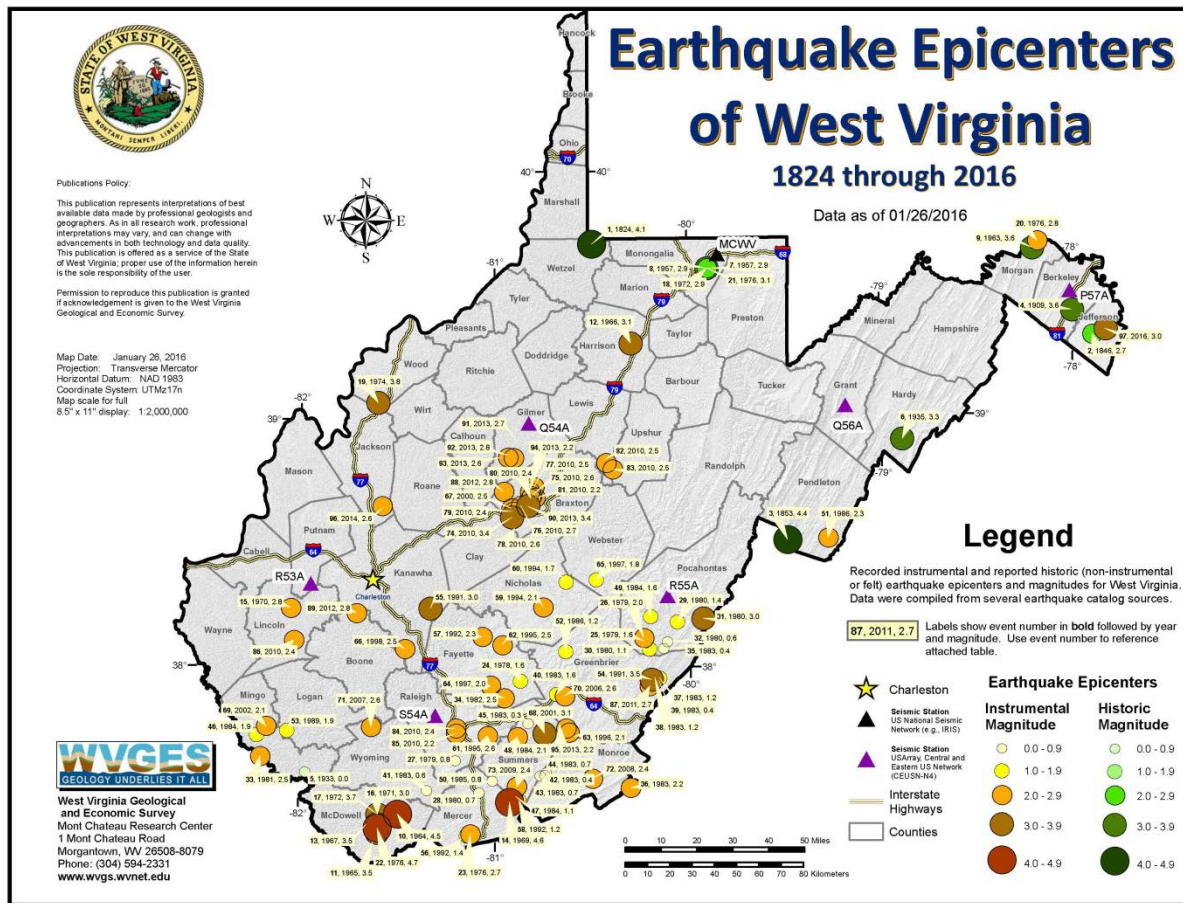
The Earth is made up of tectonic plates; the boundary lines where these tectonic plates meet are called faults. Friction along the boundaries or faults causes the rocks to stress and strain. “When the stress of the rocks exceed their strength, that is, their ability to withstand the force, the rock rupture and are permanently displaced along the fault plane” (Keller & Devecchio, 2015) causing earthquakes that reach and affect the infrastructure on the surface.

A common misconception is that hydraulic fracturing, or “fracking” is causing all of the induced earthquakes. In reality, fracking “is directly causing a small percentage of the felt-induced earthquakes observed in the United States...Most induced earthquakes in the United States are a result of the deep disposal of fluids (waste water) related to oil and gas production” (Rubinstein and Mahani, 2015).

## LOCATION AND EXTENT

The United States has areas that are prone to earthquakes. The coasts of California, Oregon and Washington are more vulnerable to seismic activity due to the presence of the Ballenas, Brothers, and the San Andreas Faults on the west coast. Also of note is the New Madrid Seismic Zone located in Arkansas, Missouri, and Tennessee. On the east coast, there is the Eastern Tennessee Seismic Zone that stretches from Alabama to Virginia.

As seen in the map below, there have been very few instances of earthquake epicenters in Region 8. The majority of earthquakes felt in the region would likely originate outside the Region 8 counties.



## HISTORICAL OCCURRENCES

Between the years of 1824 and 2016 there have been three epicenters of earthquakes in the Region 8 Counties; one in Hardy County in 1935 on November 1 with a magnitude of 3.3, and two in Pendleton County in 1853 on March 2 with a magnitude of 4.4, and 1986 on February 26 with a magnitude of 2.3, all along the Virginia border. Surrounding counties such as Morgan Berkeley, Jefferson and Pocahontas have also experienced earthquake epicenters. Grant, Mineral, and Hampshire Counties have not experienced epicenters.

## IMPACTS AND VULNERABILITY

Earthquakes can affect people and structures alike, although older structures may be more susceptible to cracks and damage. “With most earthquakes, trauma caused by the collapse of buildings is the cause of most deaths and injuries. However, a surprisingly large number of patients require acute care for non-surgical problems such as acute myocardial infraction, exacerbation of chronic diseases such as diabetes or hypertension, anxiety and other mental health problems, respiratory disease from exposure to dust and asbestos fibers from rubble, and near-drowning because of flooding from broken dams. An earthquake may precipitate a major technologic disaster by damaging or destroying nuclear power stations, hospitals with dangerous biologic products, hydrocarbon storage areas, and hazardous chemical plants. As with most natural disasters, the risk of secondary epidemics is minimal, and only mass vaccination campaigns based on results of epidemiological surveillance are appropriate following earthquakes” (Noji, 1999).

## LOSS & DAMAGES

The effects of a potential earthquake striking each county in Region 8 were analyzed using the HAZUS-MH program from the Federal Emergency Management Agency. The scenario depicts a 5.0 earthquake (the lowest possible magnitude to use in the program) located at the county seat of each county. The following tables describe the expected building damages by occupancy type and the building-related economic loss estimates.

**TABLE 2.3.3.A GRANT COUNTY EXPECTED BUILDING DAMAGE BY OCCUPANCY (HAZUS)**

	None		Slight		Moderate		Extensive		Complete	
	Count	%	Count	%	Count	%	Count	%	Count	%
Agriculture	6	0.17	4	0.25	4	0.36	2	0.40	0	0.46
Commercial	60	1.69	35	2.39	45	4.10	22	5.21	6	6.05
Education	5	0.14	2	0.12	2	0.18	1	0.22	0	0.24
Government	4	0.12	2	0.11	2	0.19	1	0.24	0	0.28
Industrial	26	0.73	14	0.95	21	1.87	10	2.51	3	2.94
Other Residential	903	25.38	393	27.23	445	40.31	218	52.30	50	47.32
Religion	10	0.28	5	0.37	5	0.46	2	0.52	1	0.55
Single Family	2,545	71.49	990	68.57	580	52.53	161	38.60	44	42.16
<b>TOTAL</b>	<b>3,559</b>		<b>1,444</b>		<b>1,104</b>		<b>417</b>		<b>105</b>	

**TABLE 2.3.3.B GRANT COUNTY HAZUS BUILDING-RELATED ECONOMIC LOSS ESTIMATES (MILLIONS OF DOLLARS)**

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses	Wage	0.00	0.62	3.06	0.51	0.22	4.40
	Capital Related	0.00	0.26	2.19	0.31	0.06	2.83
	Rental	1.32	0.77	1.16	0.30	0.12	3.67
	Relocation	4.87	1.43	2.15	1.49	0.94	10.88
	Subtotal	6.19	3.08	8.56	2.61	1.33	21.78
Capital Stock Losses	Structural	6.96	2.05	2.39	4.57	0.99	19.69
	Non Structural	23.35	6.61	6.67	14.68	2.59	53.91
	Content	8.46	1.47	3.65	10.81	1.42	25.81
	Inventory	0.00	0.00	0.10	2.30	0.03	2.43
	Subtotal	38.77	10.13	12.81	32.36	5.03	99.10
<b>TOTAL</b>		<b>44.96</b>	<b>13.22</b>	<b>21.37</b>	<b>34.97</b>	<b>6.37</b>	<b>120.88</b>

**TABLE 2.3.3.C HAMPSHIRE COUNTY EXPECTED BUILDING DAMAGE BY OCCUPANCY (HAZUS)**

	None		Slight		Moderate		Extensive		Complete	
	Count	%	Count	%	Count	%	Count	%	Count	%
Agriculture	13	0.17	4	0.17	3	0.21	1	0.23	0	0.27
Commercial	80	1.06	34	1.45	41	2.51	19	3.49	6	4.49
Education	4	0.05	1	0.06	2	0.11	1	0.15	0	0.18
Government	12	0.16	4	0.15	4	0.26	2	0.35	1	0.43
Industrial	23	0.31	8	0.32	10	0.58	5	0.83	1	1.04
Other Residential	1,959	25.97	746	31.76	767	76.76	315	57.27	64	51.58
Religion	17	0.23	6	0.27	5	0.33	2	0.42	1	0.50
Single Family	5,435	72.06	1,545	65.82	807	49.24	205	37.27	52	41.51
<b>TOTAL</b>	<b>7,543</b>		<b>2,348</b>		<b>1,640</b>		<b>550</b>		<b>125</b>	

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses	Wage	0.00	0.72	2.33	0.08	0.34	3.47
	Capital Related	0.00	0.30	1.53	0.05	0.05	1.93
	Rental	1.73	0.94	1.12	0.02	0.10	3.92
	Relocation	6.41	2.05	1.98	0.15	0.83	11.41
	Subtotal	8.14	4.00	6.97	0.31	1.32	20.73
Capital Stock Losses	Structural	8.62	2.91	1.19	0.41	0.90	15.03
	Non Structural	28.43	8.97	5.86	1.35	2.26	46.86
	Content	10.26	1.97	3.22	0.88	1.31	17.64
	Inventory	0.00	0.00	0.11	0.20	0.04	0.35
	Subtotal	47.30	13.85	11.39	2.84	4.51	79.88
<b>TOTAL</b>		<b>55.44</b>	<b>17.85</b>	<b>18.36</b>	<b>3.14</b>	<b>5.83</b>	<b>100.62</b>

	None		Slight		Moderate		Extensive		Complete	
	Count	%	Count	%	Count	%	Count	%	Count	%
Agriculture	25	0.51	7	0.46	4	0.44	1	0.47	0	0.37
Commercial	125	2.51	38	2.45	29	3.13	8	3.76	1	3.79
Education	7	0.14	2	0.13	2	0.17	0	0.19	0	0.21
Government	12	0.25	4	0.23	3	0.33	1	0.37	0	0.38
Industrial	56	1.12	15	0.96	12	1.27	3	1.32	0	1.25
Other Residential	1,104	22.20	444	28.30	418	44.45	99	46.82	11	35.54
Religion	13	0.26	4	0.24	2	0.26	1	0.30	0	0.32
Single Family	3,631	73.00	1,054	67.23	470	49.96	99	46.77	19	58.13
<b>TOTAL</b>	<b>4,973</b>		<b>1,568</b>		<b>940</b>		<b>211</b>		<b>32</b>	

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses	Wage	0.00	0.14	0.87	0.20	0.25	1.46
	Capital Related	0.00	0.06	0.61	0.12	0.02	0.81
	Rental	0.92	0.29	0.45	0.07	0.05	1.78
	Relocation	3.42	0.84	0.76	0.24	0.38	5.63
	Subtotal	4.33	1.32	2.68	0.63	0.70	9.67
Capital Stock Losses	Structural	4.43	0.86	0.75	0.60	0.38	7.03
	Non Structural	14.54	2.45	2.06	2.29	1.01	22.35
	Content	5.33	0.50	1.22	1.81	0.65	9.43
	Inventory	0.00	0.00	0.05	0.56	0.02	0.63
	Subtotal	24.30	3.81	4.09	5.18	2.07	39.45
<b>TOTAL</b>		<b>28.64</b>	<b>5.14</b>	<b>6.77</b>	<b>5.81</b>	<b>2.77</b>	<b>14.12</b>

**TABLE 2.3.3.G MINERAL COUNTY EXPECTED BUILDING DAMAGE BY OCCUPANCY (HAZUS)**

	None		Slight		Moderate		Extensive		Complete	
	Count	%	Count	%	Count	%	Count	%	Count	%
Agriculture	8	0.10	3	0.11	3	0.15	1	0.17	0	0.19
Commercial	124	1.62	58	1.93	70	3.35	32	4.58	9	5.38
Education	10	0.13	4	0.13	5	0.22	2	0.28	1	0.32
Government	13	0.17	5	0.16	6	0.29	3	0.37	1	0.41
Industrial	36	0.47	13	0.44	17	0.82	8	1.17	2	1.37
Other Residential	2,060	26.94	909	30.03	850	40.51	351	49.66	79	45.07
Religion	23	0.30	9	0.29	8	0.36	3	0.43	1	0.45
Single Family	5,374	70.28	2,024	66.91	1,140	54.30	306	43.3	82	46.80
<b>TOTAL</b>	<b>7,647</b>		<b>3,025</b>		<b>2,099</b>		<b>707</b>		<b>175</b>	

**TABLE 2.3.3.H MINERAL COUNTY HAZUS BUILDING-RELATED ECONOMIC LOSS ESTIMATES (MILLIONS OF DOLLARS)**

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
18.01	Wage	0.00	0.57	5.31	0.20	0.74	6.81
	Capital Related	0.00	0.23	3.93	0.12	0.10	4.39
	Rental	2.61	1.74	2.21	0.06	0.18	6.80
	Relocation	9.66	2.37	4.08	0.27	1.62	18.01
	Subtotal	12.28	4.91	15.53	0.65	2.65	36.01
Capital Stock Losses	Structural	13.84	3.63	4.61	0.81	1.37	24.26
	Non Structural	46.53	13.46	12.51	2.69	4.24	79.42
	Content	16.97	3.39	6.94	1.78	2.49	31.57
	Inventory	0.00	0.00	0.24	0.48	0.03	0.75
	Subtotal	77.33	20.47	24.60	5.76	8.13	135.99
<b>TOTAL</b>		<b>89.61</b>	<b>25.38</b>	<b>39.82</b>	<b>6.41</b>	<b>10.77</b>	<b>127.00</b>

**TABLE 2.3.3.I PENDLETON COUNTY EXPECTED BUILDING DAMAGE BY OCCUPANCY (HAZUS)**

	None		Slight		Moderate		Extensive		Complete	
	Count	%	Count	%	Count	%	Count	%	Count	%
Agriculture	5	0.18	3	0.21	3	0.29	1	0.31	0	0.36
Commercial	31	1.22	19	1.36	24	2.28	12	2.98	4	3.52
Education	2	0.07	1	0.07	1	0.13	1	0.16	0	0.18
Government	4	0.16	2	0.15	3	0.28	1	0.37	0	0.43
Industrial	14	0.55	8	0.61	13	1.19	7	1.76	2	2.08
Other Residential	527	20.95	341	27.72	410	38.48	198	50.50	45	45.00
Religion	3	0.12	2	0.14	2	0.18	1	0.23	0	0.25
Single Family	1,932	76.75	1,005	72.73	609	57.17	172	43.70	48	48.18
<b>TOTAL</b>	<b>2,517</b>		<b>1,381</b>		<b>1,065</b>		<b>393</b>		<b>100</b>	

TABLE 2.3.3.J PENDLETON COUNTY HAZUS BUILDING-RELATED ECONOMIC LOSS ESTIMATES (MILLIONS OF DOLLARS)							
Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses	Wage	0.00	1.01	1.20	0.20	0.35	2.75
	Capital Related	0.00	0.41	1.04	0.15	0.04	1.62
	Rental	1.39	0.67	0.63	0.15	0.08	2.91
	Relocation	5.14	1.21	0.96	0.73	0.65	8.67
	Subtotal	6.53	3.30	3.82	1.20	1.11	15.95
Capital Stock Losses	Structural	6.75	1.79	1.11	1.28	0.80	11.73
	Non Structural	23.03	5.32	2.97	4.17	1.80	37.29
	Content	8.45	1.14	1.56	3.08	1.07	15.30
	Inventory	0.00	0.00	0.06	0.47	0.04	0.58
	Subtotal	38.23	8.25	5.70	9.00	3.71	64.90
<b>TOTAL</b>		<b>44.76</b>	<b>11.55</b>	<b>9.53</b>	<b>10.20</b>	<b>4.82</b>	<b>80.85</b>

Total potential losses for a worst case scenario event in all counties in Region 8 could amount to over \$443,470,000,000.

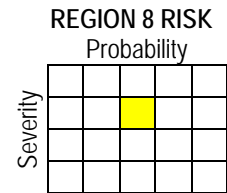
## RISK ASSESSMENT

TABLE 2.3.3.K EARTHQUAKE RISK CALCULATION			
Probability		Severity	Risk
IMPROBABLE		MARGINAL	LOW
Based on past occurrences of earthquakes in the area, the probability of an epicenter occurring in one of the Region 8 counties is improbable.	+	The most likely damages to occur from an earthquake are minor structural losses.	= The risk assessment matrix calculates the risk of earthquakes to the area to be low.



### 2.3.4 Epidemic

An epidemic is a sudden increase in the number of cases of an infectious disease above what is normally expected.



#### HAZARD OVERVIEW

According to the Centers for Disease Control and Prevention (CDC), there are various levels that refer to the amount or extent of a disease occurrence (CDC, 2012).

- **Endemic** refers to the constant presence and/or usual prevalence of a disease or infectious agent in a population within a geographic area; it is the amount of a particular disease that is usually present in a community or baseline.
- **Sporadic** refers to a disease that occurs infrequently and irregularly.
- **Hyper endemic** refers to persistent, high levels of disease occurrence.
- **Cluster** refers to an aggregation of cases grouped in place and time that are suspected to be greater than the number expected, even though the expected number may not be known.
- **Epidemic** refers to an increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area. Epidemics occur when an agent and susceptible hosts are present in adequate numbers, and the agent can be effectively conveyed from a source to the susceptible hosts. More specifically, an epidemic may result from:
  - a recent increase in amount or virulence of the agent,
  - the recent introduction of the agent into a setting where it has not been before,
  - an enhanced mode of transmission so that more susceptible persons are exposed,
  - a change in the susceptibility of the host response to the agent, and/or
  - factors that increase host exposure or involve introduction through new portals of entry.
- **Outbreak** carries the same definition of epidemic, but is often used for a more limited geographic area.
- **Pandemic** refers to an epidemic that has spread over several countries or continents, usually affecting a large number of people.

Some diseases are so rare in a given population that a single case warrants an epidemiologic investigation (e.g., rabies, plague, polio), other diseases occur more commonly so that only deviations from the norm warrant investigation.

#### POSSIBLE CAUSES

Epidemics can develop with little or no warning and quickly erode the capacity of local medical care providers. A fast developing epidemic can last several days and extend into several weeks. In some extreme cases, they can last for several months. An epidemic can occur at any time of the year, but the warm summer months, when bacteria and microorganism growth are at their highest, present the greatest risk.

The overall health of the population can be a factor in assessing the risk to the population. In general, the healthier the population is the less inclined they are to become ill.

#### LOCATION & EXTENT

According to the regional Epidemiologist, there are numerous outbreaks every year but cannot identify them by name or county because of confidentiality concerns. However, grouped together, since 2013, Region 8 counties have had numerous outbreaks of influenza and gastroenteritis (usually norovirus) in long-term care facilities, pertussis associated with schools and daycares, influenza at schools and the regional jail, campylobacter in constructions workers doing contract work at a local plant, a foodborne outbreak involving a food service establishment, hand, foot, and mouth disease in schools, scabies in schools and long-term care facilities, and a case of acute flaccid myelitis in a child (which is considered an outbreak, because it is a rare disease for the region, possibly one or two cases statewide annually).

#### HISTORICAL OCCURRENCES

According to the regional Epidemiologist, the types of illness or disease health departments in Region 8 are most concerned about are Influenza, rabies, tuberculosis, sexually-transmitted diseases, opioid epidemic and increasing numbers of Hepatitis B and Hepatitis C.

Data for the following table was provided by the Regional Epidemiologist for the Public Health District 3.

- The health departments have records that go back to 2012 and 2017 data was not yet available.

- The animal exposure data also only includes those exposures involving humans. Any exposures that only involve animals, i.e. dog attacked by skunk, etc., are investigated by the health department, but are not in the electronic system.
- The numbers provided are from confirmed and probable cases, because that is what is reported to CDC. Suspect cases and those deemed to not be cases are not reported, and were pulled out from the data set.
- There are more reportable diseases than there are listed on the table; this is because the disease has been removed from the list if there have been no instances of occurrence in the last five years. Examples include Anthrax, Influenza-related death or people under age 18, Plague, etc.
- Influenza has not been tracked until 2017 and therefore is not on the list of reportable diseases.

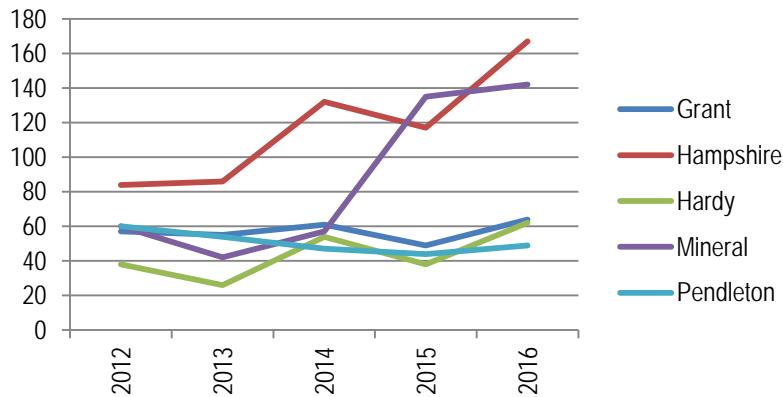
Disease	TABLE 2.3.4.A HEALTH DEPARTMENT REPORTED DISEASES PER COUNTY																								
	2012					2013					2014					2015					2016				
	Grant	Hampshire	Hardy	Mineral	Pendleton	Grant	Hampshire	Hardy	Mineral	Pendleton	Grant	Hampshire	Hardy	Mineral	Pendleton	Grant	Hampshire	Hardy	Mineral	Pendleton	Grant	Hampshire	Hardy	Mineral	Pendleton
Animal Bites/Exposures	24	47	3	10	31	19	48	1	10	25	22	37	0	0	27	24	29	0	43	28	30	51	0	66	26
Campylobacteriosis	2	2	6	0	1	1	5	3	0	0	3	5	9	3	1	4	6	9	9	4	3	8	7	9	5
Carbapenem-resistant Enterobacteriaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	3	0	1	2	1
Cryptosporidiosis	0	0	0	1	0	0	0	0	2	0	0	0	1	0	0	0	0	0	3	0	0	0	0	2	0
E. coli shiga-toxin producing (STEC)	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	1	0	0
Ehrlichiosis/Anaplasmosis	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Giardiasis	0	0	2	0	1	1	0	0	0	1	0	2	1	3	1	0	0	0	1	0	0	0	2	1	0
Haemophilus influenzae, invasive	0	0	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2	2	0	0
Hepatitis A, Acute	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
Hepatitis B, Acute	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Hepatitis B, Chronic	0	2	1	3	0	0	0	0	2	0	2	0	3	0	1	0	2	0	1	0	0	0	2	1	1
Hepatitis C, Acute	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	2	0	0
Hepatitis C, Chronic	19	21	15	29	6	13	18	11	12	14	23	49	30	31	5	10	41	21	38	6	17	57	38	27	13
Legionellosis	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0
Listeriosis	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lyme Disease	0	6	1	1	0	0	11	1	2	0	0	26	1	6	1	1	24	2	14	1	2	36	4	22	3
Malaria	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Neisseria meningitidis, invasive	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Novel Influenza A infection	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pertussis	0	0	0	1	0	0	0	0	0	0	0	1	3	0	0	1	6	0	0	0	0	0	0	0	0
Q Fever	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0
Rabies, animal	5	2	7	4	12	5	2	4	3	12	6	0	2	3	6	7	0	1	10	3	5	5	1	3	0
Rocky Mt. Spotted Fever	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0



**TABLE 2.3.4.A HEALTH DEPARTMENT REPORTED DISEASES PER COUNTY**

Disease	2012					2013					2014					2015					2016				
	Grant	Hampshire	Hardy	Mineral	Pendleton	Grant	Hampshire	Hardy	Mineral	Pendleton	Grant	Hampshire	Hardy	Mineral	Pendleton	Grant	Hampshire	Hardy	Mineral	Pendleton	Grant	Hampshire	Hardy	Mineral	Pendleton
Salmonella	3	2	1	1	0	1	0	3	3	0	0	2	2	1	1	0	2	3	3	0	1	0	1	1	0
Streptococcal Toxic Shock Syndrome	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Streptococcus, Group A invasive	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Streptococcus, Group B invasive	0	2	0	3	0	3	0	1	1	0	1	2	0	2	1	1	1	0	1	1	0	3	1	3	0
Streptococcus pneumoniae, invasive	1	0	0	3	2	8	0	1	3	1	1	5	2	5	1	1	2	1	4	0	2	2	0	5	0
Yersiniosis	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zika Virus Disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<b>TOTAL</b>	<b>57</b>	<b>84</b>	<b>38</b>	<b>60</b>	<b>60</b>	<b>55</b>	<b>86</b>	<b>26</b>	<b>42</b>	<b>54</b>	<b>61</b>	<b>132</b>	<b>54</b>	<b>57</b>	<b>47</b>	<b>49</b>	<b>117</b>	<b>38</b>	<b>135</b>	<b>44</b>	<b>64</b>	<b>167</b>	<b>62</b>	<b>142</b>	<b>49</b>

**REGION 8 REPORTABLE DISEASES**



**TABLE 2.3.4.B REPORTABLE DISEASE SUMMARY**

County	2012	2013	2014	2015	2016	Total (County)	Average Per Year (County)
Grant	57	55	61	49	64	286	57.2
Hampshire	84	86	132	117	167	586	117.2
Hardy	38	26	54	38	62	218	43.6
Mineral	60	42	57	135	142	436	87.2
Pendleton	60	54	47	44	49	254	50.8
Total (Region 8)	299	263	351	383	484	1780	356
Average Per Year (Region 8)	59.8	52.6	70.2	76.6	96.8	356	71.2



## IMPACT AND VULNERABILITY

Indirectly, the continual reduction in funding for public health at the state and local level is affecting our ability to perform public health services in a timely manner, primarily because of lack of staff, but also because of inability to purchase resources needed to provide those services that are mandated by law. The expiration of the funding for the federal Children's Health Insurance Program (CHIP) is of concern to public health. One of the avenues Congress is looking at to fund CHIP is by cutting the funding in the Prevention and Public Health Fund (PPHF), which provides nearly \$2.2 million to WV annually. The proposed cut is 75% of this money over 10 years. This money funds the Epidemiology and Laboratory Capacity Grant (provides 3 regional epidemiologists and partial funding for several state epidemiologists, along with the influenza testing capacity and other laboratory resources at the state Office of Laboratory Services), as well as the Immunization and Vaccines for Children Program. Cuts to this funding would eliminate the regional epidemiologist position, as well as funds for the state to purchase vaccines for the immunization program. Not being able to provide necessary, and required, public health services, should be considered a hazard to the health of the citizens in the area.

## LOSS & DAMAGES

Losses based on historical epidemic occurrences are difficult to estimate. According to a study by Molinari (2007), seasonal influenza results in a substantial economic impact, estimated, in part, at \$16.3 billion in lost earnings. By population, Region 8 represents 0.25% of the United States. Since seasonal influenza primarily impacts the human population, using Region 8's composition of the U.S. as a multiplier (i.e., 0.0025) and applying it to the potential economic impact, lost earnings in Region 8 counties could reach a staggering \$40,750,000 each year. Though that number appears high, it equates to approximately \$488 per year for each person in the county. Epidemics rarely affect structures. Epidemics may affect people and, at times, the operations of critical facilities, businesses, and other community assets.

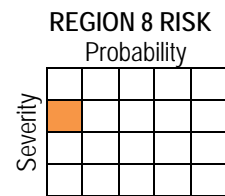
RISK ASSESSMENT

TABLE 2.3.4.C EPIDEMIC RISK CALCULATION				
<i>Probability</i>		<i>Severity</i>	<i>Risk</i>	
OCCASIONAL		CRITICAL	MEDIUM	
Although there are on average 71 cases of reportable diseases in Region 8 annually, this does not indicate the presence of an epidemic. However, due to the prevalence of Influenza (although not reported) in the area, the probability is set at occasional.	+	Historically in the area, there has been a low impact from epidemics. Even calculating economic implications, the loss is less than \$500 per person per year. There is no damage to structures from epidemics, but due to the potential illness and loss of life, the severity is critical.	=	The risk assessment matrix estimates that the risk of an epidemic to Region 8, based on probability and severity, is medium.



### 2.3.5 Flood

A flood is an overflow of water that submerges land that is typically dry.



#### HAZARD OVERVIEW

Flooding is arguably the highest priority hazard in all five 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.

#### NATIONAL FLOOD INSURANCE PROGRAM

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 8 are similar from jurisdiction to jurisdiction. Generally, floodplain managers provide three basic services: floodplain identification, floodplain management, and outreach.

The following local governments in Region 8 are participants in the National Flood Insurance Program (NFIP).

TABLE 2.3.5.A REGION 8 COMMUNITIES PARTICIPATING IN THE NFIP					
<i>Community Name</i>	<i>County</i>	<i>Initial FHBM Identified</i>	<i>Initial FIRM Identified</i>	<i>Current Effective Map Date</i>	<i>Reg-Emer Date</i>
Bayard, Town of	Grant County	11/22/1974	08/10/79	09/02/09(M)	08/10/79
Capon Bridge Town	Hampshire County	08/16/74	04/01/88	11/7/2002	04/01/88
Franklin, Town of	Pendleton County	05/31/74	09/01/87	03/02/10	09/01/87
Grant County*	Grant County	01/10/75	08/01/87	09/02/09	08/01/87





TABLE 2.3.5.A REGION 8 COMMUNITIES PARTICIPATING IN THE NFIP					
Community Name	County	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Reg-Emer Date
Hampshire County*	Hampshire County	01/31/75	08/01/87	11/7/2002	08/01/87
Hardy County *	Hardy County	04/25/75	06/19/85	09/02/09	06/19/85
Keyser, City of	Mineral County	06/28/74	09/27/91	03/19/13	09/27/91
Mineral County *	Mineral County	01/31/75	09/27/91	03/19/13	09/27/91
Moorefield, Town of	Hardy County	05/31/74	12/15/1990	09/02/09	07/01/87
Pendleton County*	Pendleton County	04/25/75	07/01/87	03/02/10	07/01/87
Petersburg, Town of	Grant County	05/07/74	05/03/90	09/02/09	06/18/87
Piedmont, City of	Mineral County	08/23/74	09/27/91	03/19/13	09/27/91
Ridgeley, Town of	Mineral County	01/31/75	09/27/91	03/19/13	04/03/13
Romney, Town of	Hampshire County	05/06/77	06/15/88	11/7/2002	06/15/88
Wardensville, Town of	Hardy County	11/15/1974	08/01/87	09/02/09(M)	08/01/87

\* Includes unincorporated communities  
(M) No elevation determined – all zone A, C, and X

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 serve as a liaison with the Federal Emergency Management Agency (FEMA) by collecting and submitting completed certificates.

The coordinators for the five counties in the region also often provide support to municipal floodplain coordinators. County and other municipal floodplain coordinators often support these municipalities with advice, technical assistance, quality control (i.e., a “second opinion”), etc. 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. Municipalities themselves, though, are responsible for providing the “ultimate say” for cases within their jurisdiction.

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. Floodplain identification and



management also include integration with other planning efforts such as comprehensive plans and hazard mitigation plans.

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 FIRM or D-FIRM information, etc. Educating the community about the value of flood insurance also falls under this category. As an example in Hardy County, many citizens, when informed by the County that their parcel of land is located in the 1% floodplain, consistently reply, unless affected by the 1985 and 1996 floods, that there was never any flood on their land, "as long as they could remember". Despite this, the Hardy County Planning Office has all of the up-to-date FEMA flood literature to educate the public.

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. As a follow up to map review, floodplain managers work with their governing body to update the floodplain ordinance appropriately. In some jurisdictions, such maintenance is a joint approach

It is significant to note that all counties in Region 8 have adopted the most recent versions of the Flood Insurance Rate Map (FIRM) mapping for their jurisdictions. In August of 2008, Hardy County adopted a more stringent floodplain ordinance. In addition, the towns of Moorefield and Wardensville have updated their floodplain ordinances.

Hampshire County has recently updated the floodplain management plan pursuant to participating in the Community Rating System (CRS). A copy of this plan is included in [Appendix 4: Hampshire County Floodplain Management Plan](#).

## POSSIBLE CAUSES

According to NOAA, some of the possible causes for flooding include the following.

- **Excessive Rainfall:** This is the most common cause of flooding. Water accumulates quicker than the soil can absorb resulting in flooding.
- **Snowmelt:** It occurs when the major source of water involved is caused by melting snow. Unlike rainfall that can reach the soil almost immediately, the snowpack can store the water for an extended amount of time until temperatures rise above freezing and the snow melts.
- **Ice or Debris Jams:** Common during the winter and spring along rivers, streams and creeks. As ice or debris moves downstream, it may get caught on any sort of

obstruction to the water flow. When this occurs, water can be held back, causing upstream flooding. When the jam finally breaks, flash flooding can occur downstream.

- **Dam Breaks or Levee Failure:** Dams can overtop, have excessive seepage or have structural failure. For more information on this topic see [Section 2.3.1 Dam Failure](#).

## HISTORICAL OCCURRENCES

All of the Region 8 counties have an extensive history of flooding. Historic floods include:

- **Grant County:** The county experienced flooding events in both January and September of 1996. The areas that felt the most effects were Cabins and the Town of Bayard. Grant County, like many other areas in West Virginia, suffered the most devastating flood of the past 40 years in 1985. Petersburg was significantly affected in 1985. A number of the deaths reported as a result of the 85 Flood occurred in Grant County.
- **Hampshire County:** In November, 1985, small stream and river flooding in the Potomac River basin affected Hampshire County.
- **Hampshire County:** In 1996, five homes were destroyed and 15 were damaged as a result of snow melt and heavy rains. Numerous roads and one bridge sustained damages. The Springfield area was without water for several days until the National Guard provided a 3,500 gallon water tanker for the residents. Also, in September 1996 Hurricane Fran dropped 4 to 6 inches of rain across the already saturated Potomac Highlands. In Hampshire County, 240 homes were damaged, 13 single-family homes and 108 mobile homes were destroyed and 40 single-family homes received major damage

Flooding events since the last plan update include the following, according to data from NCEI.

- **Kessel, Hardy County – 07/20/2012:** A slow-moving cold front produced showers and thunderstorms in a highly moist atmosphere. High rainfall rates over already-saturated grounds produced isolated flash flooding in Hardy County. Flash Flooding on Kessel Road.
- **Headsville, Mineral County – 10/29/2012:** Hurricane Sandy moved up the Atlantic coast and then turned Northwest and made landfall northeast of MD. Heavy rain and

- high winds over spread coastal regions and most of Maryland, eastern panhandle of West Virginia and Northern Virginia. Heavy rain caused flooding and river flooding. There was water running over Headsville Road at Patterson Creek.
- **Franklin, Pendleton County – 07/19/2013:** High pressure was off the South Carolina coast. Warm and humid conditions existed across the Mid-Atlantic and isolated thunderstorms formed over the higher terrain. There were several streets flooded in Franklin WV.
  - **Wardensville, Hardy County – 07/22/2013:** A surface trough was over the area while an upper level disturbance moved overhead. Showers and thunderstorms produced heavy rainfall as they moved over the mountains. There were three roads closed by water over the road.
  - **Romney, Hampshire County – 06/03/2016:** A cold front approached the region while Tropical Storm Bonnie was off the Outer Banks of North Carolina. Full sunshine and easterly flow across the area led to instability and showers and thunderstorms produced heavy rainfall that led to flooding across Central Virginia and the Potomac Highlands. Sand Hill Road was closed due to flooding.

The following table lists the flooding events in Region 8 by county and includes the SHELDUS (for events from 1967 through 1995) and NCEI (for events from 1996 to 2017) data available. According to the data, Hampshire County has experienced the most flooding events, but Hardy and Pendleton Counties have experienced the most flash flood events.

County	Events (SHELDUS 1967-1995)	Events (NCEI 1996-2017) Floods	Flash Floods	Total Events (1967-2017)
	Grant	13	13	24
Hampshire	14	22	24	60
Hardy	15	11	27	53
Mineral	16	8	24	48
Pendleton	14	1	28	43
<b>Totals</b>	<b>72</b>	<b>55</b>	<b>127</b>	<b>254</b>

## LOCATION AND EXTENT

All five counties have experienced flooding in the past and will continue to do so. However, there are locations within the counties that may be more susceptible to flooding due to geography.

- **Grant County:** Areas surrounding downtown Petersburg, including the Grant County Airport, are located in the floodplain. Parts of Lunice Creek Highway, North Fork Highway (WV 55), and Patterson Creek Road could potentially be cut off.
- **Hampshire County:** A number of roadways commonly flood in Hampshire County. These include the following.
  - Silas Milleson Road 28/5
  - Cliffside Road 28/5
  - Herriott Road 28/5
  - Buffalo Hollow Road 28/1
  - Taylor Road 3/7
  - Maple Landing on Rt. 3
  - Toll Bridge on Rt. 1
  - Arnold Stickley Road North 1/1
  - Foxes Hollow Road 50/4
  - Mack Road 7/5
  - River Road (Capon Bridge) Rt. 15
  - Branch to Kump Road 23/9
  - Gaston Road 45/7
  - Little Cacapon Road South Rt. 12
  - Christian Church Road. Rt. 13
  - Dillons Run Road 50/25
- **Hardy County:** Like the other areas in the region, Hardy County experienced significant flooding in 1985 and 1996. Moorefield as well as the communities of Fisher and Lost River have frequently experienced flooding.
- **Mineral County:** The county was also noted as being heavily affected by events in 1985 and 1996. Isolated floods have affected the area in 2009, 2010, and 2011.
- **Pendleton County:** Pendleton County was another area that experienced a number of deaths as a result of the 1985 flood. Pendleton County was identified as one of the most devastated counties in the state. Fifty-eight single-family homes and 130 mobile homes were totally destroyed. Eighty-six single-family homes and 59 mobile homes received major damage and 214 single-family homes and 3 mobile homes received minor damages. Thirty-nine businesses were destroyed or damaged. Eighteen public buildings, 60 private bridges, 206 outbuildings, 51 barns, and 204

recreational vehicles received damage or were destroyed. Farmland damage was estimated at \$175 million. In January, 1996, heavy rain and melting snow caused small stream and river flooding across the region. Major problems for Pendleton County included water supply and the need for hay to feed cattle. However, in September, 1996, the county received a greater amount of damage thanks to the remnants of Hurricane Fran dropping between five and six inches of rain onto the already saturated Potomac Highlands. One hundred total homes were damaged, with one single family home and 32 mobile homes being totally destroyed. Ten West Virginia Counties, including the five counties of the Potomac Highlands, were declared federal disaster areas by President Clinton. Additionally, during 2003, there were three isolated floods in the county.

#### IMPACT AND VULNERABILITY

One of the main concerns with health and floods is that many times floods can cause power outages that affect people who are dependent on power to run life-sustaining equipment. During a flood, people and first responders run the risk of sustaining injuries related to saving people and property as well as the possibility of drowning. In rare circumstances, floodwater can carry bacteria that can be harmful.

Floods often disrupt many services including power, sewer, water, communications, and road access. Lacking these, it is difficult to continue critical services to the community. Damage to property, facilities, and infrastructure can range from minimal to total loss. The cost of recovery from floods can vary for everyone. Homeowners and businesses can claim insurance benefits if they have them, but may not be able to continue working due to devastation of the community or of their own property.

#### LOSS AND DAMAGES

HAZUS reports from 2010 were 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. 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. The following structure loss estimates apply to a 100-year flood.

County	Residential	Commercial	Industrial	Agricultural	Religious	Government	Education	Utilities	Total	Losses
Grant	318	5	0	33	0	0	0	3	359	\$36,166,031
Hampshire	2500	50	1	400	15	2	2	10	2,980	\$281,600,644
Hardy	646	13	0	51	1	0	0	6	717	\$93,666,558
Mineral	652	9	0	25	1	0	0	12	699	\$84,223,615
Pendleton	411	6	0	120	4	0	0	4	545	\$54,977,892
<b>TOTALS</b>	<b>4527</b>	<b>83</b>	<b>1</b>	<b>629</b>	<b>21</b>	<b>2</b>	<b>2</b>	<b>35</b>	<b>5,300</b>	<b>\$550,634,740</b>

Several communities experience 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 by occupancy type.

Community	RL Properties	Total Losses	Occupancy Type ↓	2-4 Family	Condo	Non Residential	Other	Single Family
Grant County	6	13	↓	0	0	3	0	3
Petersburg	10	20		0	1	3	1	5
Hampshire County	33	70		0	0	0	1	32
Capon Bridge	4	10		0	0	0	0	4
Hardy County	2	4		0	0	1	0	1
Moorefield	2	4		0	0	1	0	1
Mineral County	7	11		0	0	1	0	6
Keyser	15	44		2	1	0	1	11
Pendleton County	6	15		0	0	1	0	5
<b>Totals</b>	<b>85</b>	<b>196</b>			<b>2</b>	<b>2</b>	<b>10</b>	<b>3</b>

The following table outlines the damages incurred from flood events in Region 8 based on data available from SHELDUS and NCEI.

County	Total Events (1967-2017)	Damages (SHELDUS)	Damages (NCEI)	Total Damage
Grant	50	\$36,940,097	\$325,000	\$37,265,097
Hampshire	60	\$36,843,658	\$301,000	\$37,144,658
Hardy	53	\$36,853,528	\$12,000	\$36,865,528
Mineral	48	\$38,668,163	\$22,000	\$38,690,163
Pendleton	43	\$36,911,045	\$34,000	\$36,945,045
<b>Totals</b>	<b>254</b>	<b>\$186,216,491</b>	<b>\$694,000</b>	<b>\$186,910,491</b>



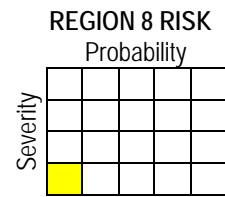
RISK ASSESSMENT

TABLE 2.3.5.F FLOOD RISK CALCULATION					
<i>Probability</i>		+	<i>Severity</i>	=	<i>Risk</i>
FREQUENT					CRITICAL
Events	254		With mainly structural damage, the severity of this hazard is critical due to the cascading effects that floods cause.		The risk assessment matrix categorizes the risk for flood based on its probability and severity as medium high.
Years	50				
There are roughly five flooding events in the Region 8 counties every year making this hazard a frequent one.					



### 2.3.6 Hazardous Materials Incident

Hazardous materials are any items or agents that have the potential to cause harm to humans, animals, or the environment.



#### HAZARD OVERVIEW

A hazardous material may be defined as a substance or material, which, because of its chemical, physical or biological nature, poses a threat to life, health, or property if released from a confined setting. A release may occur by spilling, leaking, emitting toxic vapors, or any other process that enables the material to escape its container, enter the environment, and create a potential hazard. Several common hazardous materials include those that are explosive, flammable or combustible, poisonous or radioactive. Related combustible hazardous materials include oxidizers and reactive materials, while toxins produced by etiological (biological) agents are types of poison that can cause disease.

A hazmat release while in transit is of great concern to the U. S. Department of Transportation. While most hazardous materials are stored and used at fixed sites, these materials are usually produced elsewhere and shipped to the fixed facility by rail car, truck, or onboard ships or barges. Signs identify these vehicles or placards denoting the hazard, however, the possibility of release is present at any time. Hazardous materials are constantly being moved in West Virginia on interstate highways, the rail system and on shipping lanes on various rivers. Region 8 counties do not have any river ports.

There are two major agencies that collect data as they relate to hazardous materials incidents the Pipeline and Hazardous Materials Safety Administration (PHMSA) governed by the U.S. Department of Transportation (DOT), and the National Response Center (NRC), governed by the U.S. Coast Guard (USCG).

#### POSSIBLE CAUSES

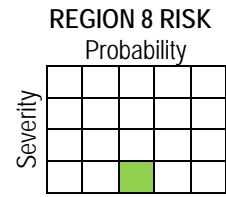
There are a variety of reasons why a hazardous materials incident could occur. In data maintained by the NRC, the major reason for an incident is unknown, meaning that the cause of the incident was not reported. However, the two main reasons that are known for failures are due to

<i>Cause for Failure</i>	<i>Incidents</i>
Derailment	3
Dumping	5
Equipment Failure	9
Explosion	1
Natural Phenomenon	2
Operator Error	9
Other	8
Transportation Accident	2
Trespasser	1
Unknown	22
<b>Total</b>	<b>62</b>



### 2.3.7 Land Subsidence

Land subsidence is a gradual settling or sudden sinking of the Earth's surface due to subsurface movement of earth materials.



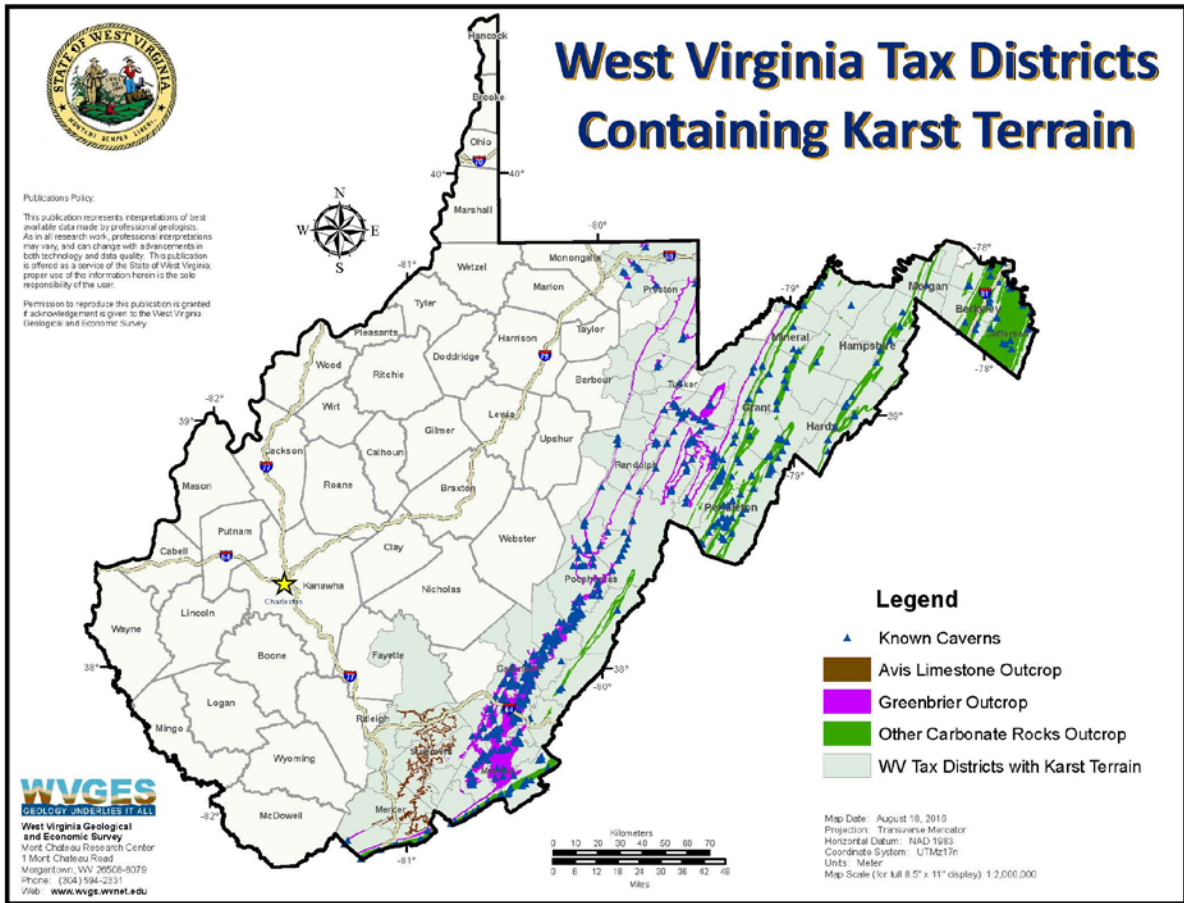
#### HAZARD OVERVIEW

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.

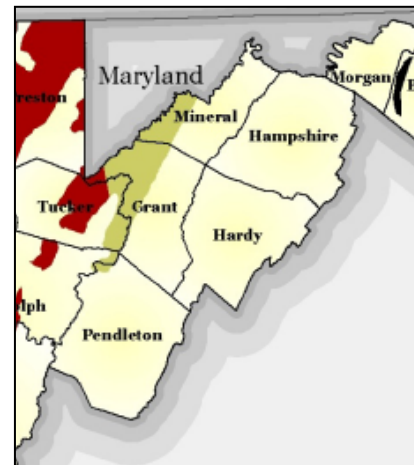
"Karst terrain" means a terrain, generally underlain by limestone or dolomite, in which the topography is formed chiefly by the dissolving of rock and which may be characterized by sinkholes, sinking streams, closed depressions, subterranean drainage, and caves. The map below shows the outcrop of carbonate units and identifies the outcrops of geological units exhibiting the characteristics of karst, including caves and sinkholes (WVGES, 2016.)

#### LOCATION AND EXTENT

Most of Region 8's counties lie on a geological formation containing evaporate rocks such as salt and gypsum. (The map below demonstrates the presence of "evaporite rocks" in West Virginia and roughly throughout the Region 8 area.) Various portions of the region also contain karst formations. These southern-most portions contain a number of underground caves that could collapse, causing subsidence on top of the ground. Some 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](http://nationalatlas.gov), sink holes and other subsidence are not predicted to be extensive in the areas of West Virginia containing these formations.



Other areas throughout West Virginia see subsidence as it relates to mining operations. In Region 8, only Mineral, Grant, and Pendleton Counties contain areas typically considered parts of the state's coal fields. These areas are located in the extreme western parts of the region and consist primarily of low-volatile bituminous coal. Grant County does contain a very small area with medium and high-volatile bituminous. The image to the left shows these areas. The red portion at the western tip of Grant County represents med/high-volatile, while the light green strip along the western edge of the region represents the low-volatile areas.



**POSSIBLE CAUSES**

Land movements can be secondary effects of heavy rainfall and earthquakes (WHO). Some of the causes attributed to land movements can include:

- intense deforestation and soil erosion,
- construction of human settlement in landslide prone areas,
- roads or communications lines in mountain areas,
- building with weak foundations,
- buried pipelines,
- mining, and
- lack of understanding of landslide hazards, and lack of warning systems.

## HISTORICAL OCCURRENCES

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.

## IMPACT AND VULNERABILITY

Although there have not been any instances of large, catastrophic land movements in Region 8, the potential for damage is still present. Generally, land subsidence causes death, injuries, trauma and suffocation from entrapment. Short and long-term mental health effects have been observed. Depending on the location, these events could cause loss or damage to homes, infrastructure and critical facilities and block whole communities off. There is potential for loss of property value, livestock and crops (WHO).

## LOSS AND DAMAGES

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. However, there have been few, if any, occurrences of large-scale land subsidence incidents in Region 8. Because the damage in the Region 8 counties has been mainly small incidents, the West Virginia Division of Highways (WVDOH), the agency that repairs land subsidence issues on roads, could provide data for historical events.

WVDOH Districts 5 and 8 were given the opportunity to provide input for this hazard; only District 8 (Pendleton County) was able to provide loss and occurrence information. According to the response, Pendleton County averages between two and three minor slips per year and the average repair cost of each slip is between \$25,000 and \$50,000. The District Engineer indicated that the main areas that experience these slips are the

mountains, particularly along US 33 (Shenandoah Mountain, North Mountain, and Allegheny Mountain).

RISK ASSESSMENT

TABLE 2.3.7.A LAND SUBSIDENCE RISK CALCULATION				
<i>Probability</i>		<i>Severity</i>		<i>Risk</i>
OCCASIONAL		NEGLIGIBLE		MEDIUM LOW
There is no reliable data that indicates the amount of land subsidence occurrences in the region, but from data available, the possibility of occurrence is present.	+	Damages caused by this hazard are not very costly and so far have not involved loss of life or injury.	=	The risk assessment matrix categorizes the land subsidence hazard risk as medium low.

equipment failure and operator error. A breakout of the causes reported can be seen in [Table 2.3.6.A](#).

## LOCATION & EXTENT

Hazardous materials spills, leaks, or accidents can occur at any location in all counties of Region 8. More specifically, they are more likely to happen on transportation pathways such as roads and railways, and at facilities that routinely handle hazardous materials such as gas stations, chemical companies, and other Tier II reporting facilities.

The extent of the damage from hazmat can be localized to just a cleanup on the road, or widespread, to include hazardous materials reaching source water via storm drains, and the river. According to data from the NRC, there are several locations where hazmat incidents can occur.

All counties in Region 8 contain “fixed facilities”, also known as Tier II facilities, which 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*):

Location of Incidents	Incidents
Fixed Facility	36
Mobile	4
Pipeline	2
Railroad	13
Storage Tank	5
Unknown Sheen	2
<b>Total</b>	<b>62</b>

- **Grant:** 15\*
- **Hampshire:** 19
- **Hardy:** 15\*
- **Mineral:** 27
- **Pendleton:** 19\*

\*NOTE: “Star” denotes estimated numbers.

## HISTORICAL OCCURRENCES

Between 2010 and 2017, the majority of reported hazmat incidents occurred in Mineral County, followed by Grant, Hampshire, Hardy, and Pendleton Counties. Both databases utilized indicate that there have been a total

County	Incidents (NRC) 2010-2017	Incidents (PHMSA) 1990-2011	Total Incidents 1990-2017
Grant	17	2	19
Hampshire	14	2	16
Hardy	6	4	10
Mineral	22	7	29
Pendleton	3	2	5
<b>Total</b>	<b>62</b>	<b>17</b>	<b>79</b>

of 79 incidents. It is likely that there have been many more incidents that have not been reported to either agency.

### IMPACTS AND VULNERABILITY

Due to the wide variety of substances that are used, transported and stored in the area, it is difficult to assign an overall impact of these substances to public health, the environment, the economy and the infrastructure. There are some spills that cause minor if any damage to the area. For example, spilling a few gallons of gasoline on concrete during transfer causes minimal economic impact; rarely does the spilled substance cause any environmental impacts. This is not to say that all spills are minor, some can be very harmful to human health and the environment and costs thousands, if not millions of dollars to clean up.

### LOSS AND DAMAGES

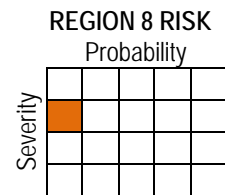
The NRC reports not contain loss information data. PHMSA reported 17 hazmat incidents between 1990 and 2011 to which damages amounted to around \$485,484. This is on average around \$28,500 per incident. If this same amount is applied to all data, including the 62 additional incidents reported by the NRC between 2010 and 2017, then the estimated damages would amount to roughly \$814,501,500.

### RISK ASSESSMENT

TABLE 2.3.6.D HAZMAT RISK CALCULATION					
Probability		+	Severity	=	Risk
FREQUENT					NEGLIGIBLE
Events	79		There have been few, if any injuries associated with the reported incidents. Mainly the damages are caused to the environment.		The risk assessment matrix categorizes this hazard as a medium risk to the area.
Years	27				
On average, according to data available, there are about three reported incidents in the region every year.					

### 2.3.8 Severe Summer Weather

Severe summer weather includes hail, extreme heat, tornadoes, wind, and lightning.



#### HAZARD OVERVIEW

##### Hail

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 8 are susceptible to hailstorms due to their proximity in the mountainous portions of eastern 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.

Historical occurrences include the following. Hampshire County, for example, has not experienced a hailstorm that caused any reported property damage two (2) decades. Total, countywide property damage was never in excess of \$5,000 (according to the NCDC reports). Crop damage, though, rose to nearly \$50,000 as a result of a June 1998 hailstorm in the Green Spring area. These reported storms contained hail ranging from 0.75" to 2.75" in diameter.

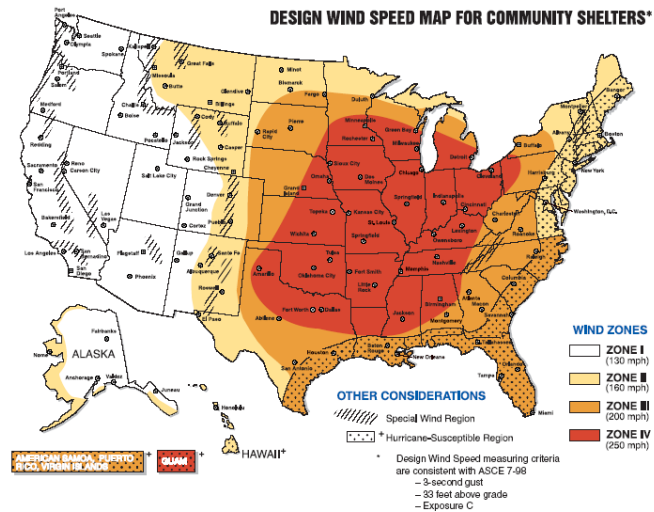
##### Wind

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 1970, counties in Region 8 have experienced 21 high wind events. (This number may appear low since a single event was likely to affect all or most counties; as such, simply totaling the number of events per county would not provide an accurate picture of wind storm frequency.)



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 II” with respect to design wind speeds, which means that shelters constructed for protective purposes should be designed to withstand up to 160 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.).



### Thunderstorm

The wind gusts and lightning associated with thunderstorms can pose a threat to life and property. Thunderstorms also have the potential to produce hail and tornadoes. Thunderstorms are typically associated with cold fronts and can move in “lines,” meaning that a location can possibly be struck by several storms in the course of minutes or hours.

The heavy rainfall associated with one or multiple storms has been known to create flash floods in the presence of oversaturated soils. A major secondary threat associated with thunderstorms is lightning. 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. Storms are common throughout the spring and summer months (although a thunderstorm can occur in any season) that cause downed trees and power lines.

### Lightning

Lightning is a giant spark of electricity between the atmosphere and the ground. In the initial stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground; however, when the differences in the charges becomes too great, this insulating capacity of the air breaks down and there is a rapid discharge of electricity known as lightning (NWS). Individual lightning strikes occur with no warning and kill between 75 and 100 Americans every year (Haddow, Bullock, & Coppola, 2014, p.51.) Lightning can reach a significant distance from a storm, up to 25 miles according to the National Severe Storms Library (NSSL). While lightning is a common occurrence and can be seen in most thunderstorms, only about 20% of the lightning observed in a storm will strike the ground.

### 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 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.

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 Enhanced Fujita scale provides an idea of the strength and extent of damages of tornadoes that can occur in the region.

## LOCATION AND EXTENT

Generally, severe summer weather will affect all counties across the region very similarly. However, based on reported historical occurrences alone, Hampshire County has seen more severe summer weather events than the rest of the counties in Region 8.

Summer weather can encompass several jurisdictions, counties, and states at the same time for varying durations.

## HISTORICAL OCCURRENCES

Data gathered from NCEI and SHELDUS inform the following table; NCEI data was used as the most recent information and was complemented by SHELDUS data for information that was not available from NCEI.

Event Type	Total Events	Grant	Hampshire	Hardy	Mineral	Pendleton	Year Data Available From	Year Data Available To	Average Events Per Year
Excessive Heat, Heat	50	3	19	18	5	1	1993	2017	2
Hail	160	24	50	29	28	29	1964	2017	3
Heavy Rain	44	9	9	14	4	8	1999	2017	2
Lightning	42	9	9	7	10	7	1964	2017	1
Tornado	7	2	2	0	2	1	1997	2017	0
Wind, Strong Wind, Thunderstorm Wind	691	138	181	148	134	90	1960	2017	12
<b>Totals</b>	<b>994</b>	<b>185</b>	<b>270</b>	<b>216</b>	<b>183</b>	<b>136</b>	<b>1960</b>	<b>2017</b>	<b>17</b>

Even within the past five years since the last update of this plan there have been instances of severe summer weather that have affected the region. The following are some examples from the NCEI Storm Event Database.

- **Petersburg, Grant County – 06/24/2016:** A stationary front remained draped across the region, placing most of the area in a moist and unstable air mass. A shortwave moving through combined with this air mass to trigger showers and thunderstorms.
- **Capon Bridge, Hampshire County – 06/29/2012:** A strong upper-level disturbance passed through the region in a northwest flow aloft. Extremely hot and humid conditions caused high amounts of instability. The upper-level disturbance triggered a line of thunderstorms that moved through the area. Due to the high instability, thunderstorms caused widespread wind damage.
- **Franklin, Pendleton County – 05/13/2014:** A cold front moved into the Mid-Atlantic from Delaware and showers and thunderstorms formed on the warm side where temperatures were near 90 and humid conditions led to heavy rain in activity.
- **Elk Garden, Mineral County – 09/02/2017:** Hot and humid conditions persisted across the Mid Atlantic ahead of an advancing cold front. Showers and thunderstorms formed in the vicinity of a surface trough. Some thunderstorms became severe leading to damaging winds.
- **Flats, Hardy County – 10/15/2014:** A cut off low over the Midwest pushed a cold front through the Mid Atlantic during the overnight hours through the morning. A line

of showers with embedded heavier showers and thunderstorms brought strong winds from aloft down to the surface.

## IMPACT AND VULNERABILITY

There are many impacts of severe summer weather. Here are a few listed under each category.

- **Lightning:** Can cause injury and even death. In some cases, lightning is known to cause fires in structures and open land or forests.
- **Hail:** Can cause injury to humans and animals if directly exposed, damage to vegetation and infrastructure.
- **Tornadoes:** Cause damage to trees, property; they can also cause severe injury and death.
- **Wind:** Causes respiratory illnesses, damage to the vegetation (fallen trees), and can cause damage to infrastructure due to flying debris.
- **Thunderstorms:** Include all of the above mentioned impacts.

## LOSS AND DAMAGES

Data available from the NCEI and SHELDUS databases indicate that tornadoes are the least occurring, most costly type of severe summer weather event and the one that has caused most injuries throughout the years. In contrast, the most prevalent type of event, wind, strong wind, and thunderstorm wind, is about 12.5 times less costly per event than a tornado.

Event Type	Deaths	Injuries	Property Damage	Crop Damage	Total Damages	Total Events	Average Cost Per Event
Excessive Heat, Heat	0	0	\$0	\$0	\$0	50	\$0
Hail	0	0	\$167,214	\$213,322	\$380,536	160	\$2,378
Heavy Rain	0	0	\$0	\$0	\$0	44	\$0
Lightning	1	0	\$75	\$240,735	\$240,810	42	\$5,734
Tornado	0	5	\$298,000	\$275,000	\$573,000	7	\$81,857
Wind, Strong Wind, Thunderstorm Wind	0	6	\$1,796,662	\$2,726,028	\$4,522,690	691	\$6,545
<b>Totals</b>	<b>1</b>	<b>11</b>	<b>\$2,261,951</b>	<b>\$3,455,085</b>	<b>\$5,717,036</b>	<b>994</b>	<b>\$5,752</b>

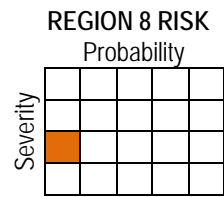
RISK CALCULATION

TABLE 2.3.8.C SEVERE SUMMER WEATHER RISK CALCULATION					
Probability			Severity		Risk
FREQUENT			CRITICAL		MEDIUM HIGH
Events	994	= 18.4	Structural damage is mainly the highest loss in severe summer weather events. Due to the fact that the region is well accustomed to and prepared for these types of events, the destruction has not been catastrophic.	=	The risk assessment matrix categorizes a frequent and critical event as a medium high risk to the area.
Years	57				
The Region 8 counties experience around 18 severe summer events per year.		+			



### 2.3.9 Severe Winter Weather

Severe winter weather events include snow, ice, freezing temperatures, and storms.



#### HAZARD OVERVIEW

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 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 or more inches of snow in a 12-hour period.
- **Ice Storm:** An ice storm occurs when moisture falls and freezes immediately upon impact.

#### POSSIBLE CAUSES

The types of severe weather described in this profile can be significantly altered by human activities. Some of these activities can be described as the following.

- **Urban Heat Island Effect:** a local climatic condition in which a metropolitan area may become as much as 22° F warmer than the surrounding countryside.
- **Burning of Fossil Fuels:** gasses emitted from burning of fossil fuels can linger in the atmosphere contributing to climate changes. (Keller, Devecchio, 2015, p 317).
- **Climate Change:** weather and climate change are closely related to the increase of occurrences in severe weather. For more complete information, refer to section [2.2.3 Hazards and Climate Change](#).

#### LOCATION AND EXTENT

Generally, severe winter weather will affect all counties across the region very similarly. However, based on reported historical occurrences alone, Grant County has seen more severe winter weather events than the rest of the counties in Region 8.

Winter weather can encompass several jurisdictions, counties, and states at the same time for varying durations.

## HISTORICAL OCCURRENCES

Event	Total Events	Grant	Hampshire	Hardy	Mineral	Pendleton	Year Data Available From	Year Data Available To	Average Events Per Year
Blizzard	23	7	1	1	7	7	1996	2017	1
Cold/Extreme Cold	115	27	11	10	29	38	1996	2017	5
Heavy Snow	31	13	7	6	5	0	1996	2017	1
Ice Storm	21	1	7	7	4	2	1996	2017	1
Winter Storm	359	102	61	53	69	74	1996	2017	17
Winter Weather*	889	252	127	126	217	167	1960	2017	16
<b>Totals</b>	<b>1,438</b>	<b>402</b>	<b>214</b>	<b>203</b>	<b>331</b>	<b>288</b>	<b>1960</b>	<b>2017</b>	<b>25</b>

\*Winter Weather events are the only events for which SHELVDUS data is available.

Even within the past five years since the last update of this plan there have been instances of severe winter weather that have affected the region. The following are some examples from the NCEI Storm Event Database.

- Grant County – 10/29/2012:** Hurricane Sandy moved up the Atlantic coast and then turned Northwest and made landfall northeast of MD. Heavy rain and high winds over spread coastal regions and most of Maryland. Heavy rain caused flood and river flooding. As Sandy moved north of the Mid Atlantic, winds switched to southerly and coastal flooding occurred. Blizzard conditions occurred on the backside of Sandy in elevations over 2500 feet in Western Maryland, Virginia, and West Virginia. Blizzard conditions were estimated by heavy snow and strong winds from a Coop Observer. He measured about 2 feet of snow. Observations at Wintergreen Mtn at 3650 feet reported winds greater than 35 mph.
- Hampshire County – 03/05/2013:** Strong low pressure impacted the Mid Atlantic bringing rain and snow to the region. A rain-snow line was present across the I-95 corridor where snowfall accumulations dropped off significantly from west to east. Snowfall amounts of 17 inches were reported at Lehew.
- Pendleton – 03/02/2014:** A cold front crossed the region as low pressure passed across the south of the Mid Atlantic and heavy snow moved across the region. Temperatures dropped from north to south and precipitation changed from rain to sleet/freezing rain to snow. Snow accumulations of five or more inches were measured at surrounding locations.

- **Mineral County: 02/14/2016:** Prolonged event impacted the Mid-Atlantic. Southwest flow aloft overriding northeast flow at the surface from departing high pressure led to snow spreading over the region initially. Low pressure formed and organized over the Gulf of Mexico, eventually pushing off to the northeast and impacting the region on the 15th. As the cold air wedge was eroded away from this low, warming at all levels led to the snow transitioning to sleet and ice for most of the area. Trained spotters reported between 0.2 and 0.4 inches of ice around the county.
- **Hardy County – 03/13/2017:** The northern and southern branches of the jet phased together, which resulted in coastal low pressure on the 13th. The coastal low tracked up the Mid-Atlantic Coast during the morning hours of the 14th before moving out to sea later in the day. High pressure over New England caused enough cold air for precipitation to fall mainly in the form of snow. Significant snowfall accumulations were reported due to the copious amounts of moisture associated with this storm. Snowfall totaled up to 8.0 inches at Old Fields and also near Wardensville.

#### IMPACT AND VULNERABILITY

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 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.



## LOSS AND DAMAGES

SHELDUS and NCEI data indicate that there have been over 1,400 winter weather events in reporting years. Although accurate loss and damage data is not available for each type of event, an estimation can be calculated; data indicates that each winter weather event costs an average of close to \$2,500.

Event	Deaths	Injuries	Total Cost	Total Events	Average Cost Per Event
Blizzard	0	0	\$0	23	\$0
Cold/Extreme Cold	0	0	\$0	115	\$0
Heavy Snow	0	0	\$0	31	\$0
Ice Storm	0	0	\$25,000	21	\$1,190
Winter Storm	0	0	\$1,593,000	359	\$4,437
Winter Weather*	2	2	\$2,259,373	889	\$2,541
<b>Totals</b>	<b>2</b>	<b>2</b>	<b>\$3,877,373</b>	<b>1,438</b>	<b>\$2,696</b>

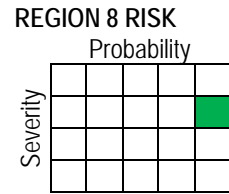
\*Winter Weather events are the only events for which SHELDUS data is available.

## RISK ASSESSMENT

Probability		+	Severity	=	Risk
FREQUENT			MARGINAL		MEDIUM HIGH
Events	1,438				
Years	57				
Severe winter weather events are very frequent in Region 8 counties.			The damages and loss caused by severe winter weather are marginal. In 57 years there have been only two recorded injuries and two deaths. Each event on average does not cost more than \$3,000. Region 8 counties are well accustomed to and plan for these types of events.		The risk assessment matrix categorizes this hazard as medium high.

### 2.3.10 Terrorism

Terrorism is the unlawful use of violence and intimidation in the pursuit of political aims.



#### HAZARD OVERVIEW

“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.***

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. Three of the five 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 8, is more unlikely than what is known as “domestic terrorism” or “homegrown violent extremism”. 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. School districts throughout the region report occasional bomb threats.

## POSSIBLE CAUSES

There is no single cause of acts of violence; it is typically a non-rational, complicated, intertwined, series of reasons that have the outcome of violence. In his article *Causes of Terrorism*, Nick Grothaus lays out the most common causes cited by leaders in the field of counterterrorism. These categories may apply to other types of violence not related to terrorism.

- **Ethno-Nationalism:** The desire of a population to break away from a government or ruling power and create a state of their own.
- **Alienation/Discrimination:** Individuals or groups face discrimination leading to further feelings of isolation. These people may become jaded towards society and feel excluded.
- **Religion:** Religion as a part of terrorism has been mainly attributed to Islamic fundamentalism although other religions have also had involvement in terrorist activities. For example, Christian Fundamentalists target abortion clinics, the Aryan Nation and the Church of Christ, Christians target the Jews and minorities (Post, 2007, pp. 211-212).
- **Socio-Economic Status:** Individuals and groups may be driven by a sense of relative deprivation and lack of upward mobility within society.
- **Political Grievances:** A lack of political inclusiveness or grievances against a certain political order may cause individuals to join or create terrorist groups.

## LOCATION AND EXTENT

Due to the high unpredictability of terrorism acts, any location could be a target of an attack. The extent of damages or impact from an attack is also unpredictable.

## HISTORICAL OCCURRENCES

There have been no known threats to or attacks on infrastructure, government or religious heads, private citizens or any other target in Region 8 counties.

The Global Terrorism Database from the Study of Terrorism and Responses to Terrorism (START) from the University of Maryland maintains data on attempted and actual

attacks relating to terrorism. The following table describes terrorist activities in West Virginia and the states surrounding Region 8, Virginia and Maryland. The table identifies the date and location of the attack, the target, property damage (property damage is zero if there was no property damage or if the damage is unknown), the perpetrator and a brief description of the incident.

**TABLE 2.3.10.A TERRORIST ACTIVITIES IN WV AND SURROUNDING REGION 8 STATES**

<i>Date</i>	<i>City</i>	<i>Type of Attack</i>	<i>Target</i>	<i>Property Damage</i>	<i>Perpetrator</i>	<i>Description</i>
5/5/2017	Weirton, WV	Bombing Explosion	Government	\$0	Individual	Three explosive devices were discovered and safely detonated around the Weirton Municipal Building in Weirton, WV. One of the devices was planted underneath a police vehicle.
8/20/2016	Roanoke, VA	Armed Assault	Private Citizens	\$0	Individual	An assailant stabbed and injured two civilians at an apartment complex in Roanoke, VA. The assailant was also injured in the attack.
11/19/2015	Falls Church, VA	Facility or Infrastructure Attack	Religious Figures or Institutions	\$200	Individual	An assailant threw incendiary devices at an Islamic Center in Falls Church, VA. There were no reported casualties in the attack.
5/20/2012	Axton, VA	Facility or Infrastructure Attack	Religious Figures or Institutions	\$0	Individual	Assailants set fire to a religious institution in Axton, VA. There were no reported casualties in the attack. An individual claimed responsibility for the incident and stated that he targeted the church because the congregation was predominantly African American.
1/6/2011	Hanover, MD	Armed Assault	Government	\$0	Unknown	In Hanover, MD a package was sent to the Transportation Secretary. The package was one of two received on the same day, the other was sent to the Governor. The package was opened by a government employee, subsequently ignited and burned the employee's fingers. No other casualties took place. The same note was found in both of the packages. Investigators indicated these notes are in opposition of highway signs urging motorists to report suspicious activity.
1/6/2011	Annapolis, MD	Armed Assault	Government	\$0	Unknown	In Annapolis MD, a package was sent to the Governor. The package was one of two received on the same day, the other was sent to the Transportation Secretary. The package was opened by a government employee, and subsequently ignited and burned the employee's fingers. No other casualties took place. Investigators indicated a note on the package is in opposition of highway signs urging motorists to report suspicious activity.
11/1/2010	Woodbridge, VA	Facility or Infrastructure Attack	Military	\$0	Individual	Shots were fired overnight at a Coast Guard recruiting station in Woodbridge, VA. No one was injured and the strip mall, where the station was located, suffered only minor damage. A Marine Corps reservist was arrested on June 17, 2011, for an unrelated incident but was charged on June 21, 2011, for the Woodbridge shooting and several other similar attacks in the area, including two shootings on the

**TABLE 2.3.10.A TERRORIST ACTIVITIES IN WV AND SURROUNDING REGION 8 STATES**

<i>Date</i>	<i>City</i>	<i>Type of Attack</i>	<i>Target</i>	<i>Property Damage</i>	<i>Perpetrator</i>	<i>Description</i>
						National Museum of the Marine Corps, one at the Pentagon, and one at a Marine Corps recruiting station. Sources report that the perpetrator was fascinated by Al-Qa ida, but did not claim to be a member of the organization.
10/28/2010	Triangle, VA	Facility or Infrastructure Attack	NGO	\$0	Individual	Shots were fired for the second time in two weeks at the National Museum of the Marine Corps in the town of Triangle, VA. No one was in the building at the time of the attack and there were no reports of major damage. A Marine Corps reservist was responsible for this and other incidents in the area.
10/25/2010	Chantilly, VA	Facility or Infrastructure Attack	Military	\$0	Individual	Shots were fired overnight at a Marine Corps recruiting substation in Chantilly, VA. No one was injured and no major damage was reported. A Marine Corps reservist was responsible for this and other attacks in the area.
10/19/2010	Arlington, VA	Facility or Infrastructure Attack	Government	\$0	Individual	Shots were fired at the Pentagon located in Arlington, VA. Security reported hearing between five and seven shots fired at the building at 4:55 am. No one was injured in the attack but two windows were damaged. A Marine Corps reservist was responsible for this and other attacks in the area.
10/16/2010	Triangle, VA	Facility or Infrastructure Attack	NGO	\$20,000	Individual	Shots were fired overnight at the National Museum of the Marine Corps in the town of Triangle, VA. No one was in the building at the time of the attack but the several windows were damaged. A Marine Corps reservist, was responsible for this and other attacks in the area.
9/1/2010	Silver Spring, MD	Hostage Taking	Journalists & Media	\$0	Individual	A man took three hostages at the Discovery Communications headquarters building in Silver Spring, MD. He was motivated by his disapproval of the Discovery network's television programming. The man was shot to death by police snipers. All three hostages were freed unharmed.
3/4/2010	Arlington, VA	Armed Assault	Government	\$0	Individual	At roughly 6:40 p.m., a man walked up to the entrance of the Pentagon in Arlington, VA, drew out a gun and fired, wounding two police officers. The man was shot and critically wounded. He later died of his wounds in the hospital. The two police officers had non-life-threatening injuries and survived.
5/9/2007	Virginia Beach, VA	Facility or Infrastructure Attack	Abortion Related	\$0	Unknown	Unknown perpetrators ignited a fire inside the building housing the Planned Parenthood of Southeastern Virginia in Virginia Beach, VA. There were no casualties, but three Planned Parenthood offices were damaged.

**TABLE 2.3.10.A TERRORIST ACTIVITIES IN WV AND SURROUNDING REGION 8 STATES**

<i>Date</i>	<i>City</i>	<i>Type of Attack</i>	<i>Target</i>	<i>Property Damage</i>	<i>Perpetrator</i>	<i>Description</i>
11/20/2005	Hagerstown, MD	Bombing Explosion	Private Citizens	\$300,000	Earth Liberation Front	Perpetrators set four separate fires in the development known as Hagers Crossing in Hagerstown, MD. One townhouse was destroyed and three others were damaged. No casualties occurred. Earth Liberation Front (ELF) claimed responsibility for these attacks.
3/14/2005	Arlington, VA	Unarmed Assault	Government	\$0	Unknown	Trace amounts of anthrax were discovered at a mail facility at the Pentagon in Arlington, VA. No casualties or property damage resulted from this incident, although 100 individuals, mainly government contractors, were given antibiotics as a precautionary measure after biological hazard sensors were set off.
12/9/2004	Indian Head, MD	Facility or Infrastructure Attack	Private Citizens	\$13,000,000	Unknown	Luxury homes, which were under construction on a 10-acre area in Maryland, were burned to the ground by suspected unnamed environmentalists. 29 other houses were also damaged by the fire. No group claimed responsibility for the attack. This development was regularly criticized by environmentalists for its proximity to the nature preserve.
2/7/2004	Charlottesville, VA	Facility or Infrastructure Attack	Business	\$30,000	Earth Liberation Front	The Earth Liberation Front (ELF) claimed responsibility for setting arson to a bulldozer and damaging other equipment at the Hollymead Town Center construction site off of US 29 in Charlottesville, VA. The site had been cleared in order to build apartments. There were no casualties in the incident.
9/21/2002	Richmond, VA	Facility or Infrastructure Attack	Business	\$0	Earth Liberation Front	Three teens conspired to destroy a crane at a construction site in Richmond, VA. Two of the teens attempted to use a Kerosene soaked American flag to ignite the fuel tanks of a construction crane. They were unsuccessful in their attempt. The three claimed to be part of the Earth Liberation Front (ELF).
10/12/1996	Clarksburg, WV	Facility or Infrastructure Attack	Government	\$0	West Virginia Militia	Seven men with connections to an anti-government West Virginia militia, including its leader and a local firefighter, were arrested on charges of conspiring to blow up the FBI's new national fingerprint records facility.
10/5/1970	Bluefield, WV	Bombing Explosion	Educational Institution	\$15,000	Unknown	Unknown perpetrators bombed the student union at Bluefield State College in Bluefield, WV. There were no casualties but the building sustained damages.

## IMPACT AND VULNERABILITY

Symbolically, an implemented act of terrorism 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. The Region 8 area, though, is somewhat unique in comparison to other communities throughout West Virginia given its proximity to the National Capital Region (NCR), which is one of the most target-rich areas of the country. Should a terrorist strike the NCR, the region could see a mass influx of residents evacuating the area. The region could also suffer the indirect economic effects of the incident as many residents work in or close to D.C.

### LOSS AND DAMAGES

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.

### RISK ASSESSMENT

TABLE 2.3.10.B TERRORISM RISK CALCULATION				
<i>Probability</i>		<i>Severity</i>		<i>Risk</i>
IMPROBABLE		CRITICAL		LOW
Because this type of hazard is based on human conditions, it is extremely difficult to predict the probability of an attack. However, because there are potential targets, the possibility will always exist.	+	An attack in this region would most likely be localized or targeted towards a specific location rather than widespread.	=	The risk assessment matrix categorizes this hazard as a low risk.

### 2.3.11 Wildfire

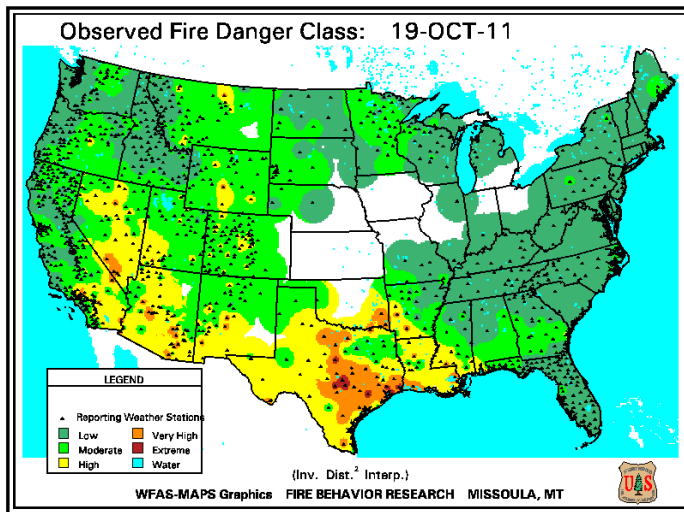
A wildfire is a large, destructive fire that spreads quickly over woodland or brush.

REGION 8 RISK

		Probability			
Severity					

#### HAZARD OVERVIEW

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 8's counties are at a low risk of wildfires.

Just because a single wildfire has 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.

#### POSSIBLE CAUSES

Nationally, the National Park Service lists several possible causes of wildfires including human-caused and nature-caused. Human-caused fires "result from campfires left unattended, the burning of debris, negligently discarded cigarettes and intentional acts of arson", which account for up to 90% of fires. Lightning or lava causes the remaining 10% of fires (NPS).



This is also true in West Virginia where “in the spring of 2015, 43% of all forest fires were the result of escaped debris fires. Equipment use was the second highest cause of forest fires in W.Va. causing 29% of all wildfires. Fires set purposely accounted for 13% of forest fires in spring of 2015” (WV Division of Forestry, n.d.).

## LOCATION AND EXTENT

Areas that are most vulnerable to wildfires include agricultural and forest lands in every county throughout Region 8.

## HISTORICAL OCCURRENCES

The West Virginia Division of Forestry provided information on wildfires and brushfires in the Region 8 counties between 2008 and 2017. Over the years, there have been a total of 438 fires that resulted in the burning of over 3,600 acres of land (forest and non-forest acres). Hampshire County is the county that has experienced the most amount of single fires, but Pendleton County is the county that has experienced the most acres burned.

County	Number Fires	Forest Acres	Non Forest Acres	Total Acres
Grant	83	67.5	65.9	133.4
Hampshire	173	328.2	76.7	404.9
Hardy	58	968.2	31.4	999.6
Mineral	54	96.3	94.4	190.7
Pendleton	70	1,828.6	109.4	1,938.0
<b>Total</b>	<b>438</b>	<b>3,288.8</b>	<b>377.8</b>	<b>3,666.6</b>

Source: WV Division of Forestry

## IMPACT AND VULNERABILITY

Aside from the obvious effects on humans such as burns and injuries, the smoke from fires is of great concern. “The smoke produced by wildfires can produce effects ranging from airway and eye irritation to death, especially among individuals with conditions that make them more susceptible to inhalational exposures” (Clements, 2009, p.283). Wildfires cause more than just the direct damage to structures, vegetation or air quality; when a fire removes much or all of the vegetation in a watershed, subsequent rains will have much greater erosive potential, which in turn produces large quantities of sediment and plant debris that affect the water quality of streams and lakes (Keller, Devecchio, 2015, p.459).

However, wildfires can also have benefits to the soil; they “tend to leave an accumulation of carbon on the surface in the form of ash and increase the nutrient content

of a soil. Under the right conditions, when erosion does not remove the ash from the environment, a nutrient reservoir may form that is beneficial to local plants” (Keller & Devecchio, 2015, p 159).

## LOSS AND DAMAGES

Monetary damage was not provided in the WV Division of Forestry data, but the amount of federal firefighting costs is available from the National Fire Information Council (NIFC). Although Region 8 and West Virginia have not seen wildfires similar to other parts of the country, mainly due to different types of climate, there still are instances of wildfires or brushfires. The NFIC estimates that the cost of suppressing fires by the Forest Service and Department of Interior agencies have averaged around \$285 per acre burned between 2010 and 2016.

In Region 8 there have been around 3,600 acres burnt in the last 11 years; if federal cost data is applied, the total average cost in Region 8 would be around \$1,044,981, or on average, about \$2,163 per fire.

## RISK ASSESSMENT

TABLE 2.3.11.B WILDFIRE RISK CALCULATION					
Probability			Severity		Risk
FREQUENT			NEGLIGIBLE		MEDIUM
Events	483	= 53.6	+	=	The risk assessment matrix categorizes wildfires as a medium risk to the region.
Years	9				
Wildfires, although not widespread, are a common occurrence in the Region 8 counties.					
			The damages sustained by wildfire mostly affect vegetation, and on occasion, structures. Wildfires could potentially cause some injuries.		

## 2.4 ASSET INVENTORY

§201.6(c)(2)(ii)	[The risk assessment shall include a] description of the jurisdiction's vulnerability of the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.
§201.6(c)(2)(ii)(A)	The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.

This risk assessment identifies potentially-vulnerable community assets such as critical facilities, critical infrastructure, historical properties, commercial/industrial facilities, etc. *Assets* contribute directly to the quality of life in the community 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 hazard profiles contained in [Section 2.3](#) above contain generalized loss estimates that, in some cases identify the types of facilities that could be impacted by the hazards considered in this plan. Additionally, the steering committee used its meetings during the update process to revise the original asset list that was included in this plan. In the following lists, assets are grouped into the following categories.

- **Critical Facilities:** Governmental facilities, water/wastewater facilities, emergency services facilities, medical facilities (hospitals/clinics), and 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.

TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Grant	Bayard Fire Department	129 Cherry Street	Bayard	26707	X				
Grant	Bayard Police Department	Maple Street	Bayard	26707	X				
Grant	Bayard Post Office	State Highway 90	Bayard	26707				X	
Grant	Bayard Town Hall	Maple Street	Bayard	26707				X	
Grant	Bayard Volunteer Fire Dept.	Cherry Lane	Bayard	26707	X				
Grant	Flood Control Levee	Along Buffalo Creek	Bayard	26707				X	
Grant	Wastewater Treatment Plant	Middlesex Street	Bayard	26707	X				
Grant	Maysville Elementary School	21 Elementary School Drive	Maysville	26833		X			
Grant	Maysville Volunteer Fire Dept.	75 John Deer Lane	Maysville	26833	X				
Grant	Mt. Storm Volunteer Fire Dept.	Firehouse Road	Mt. Storm	26739	X				
Grant	Baker Home/Conway Thorne	Virginia Avenue	Petersburg	26847					X
Grant	Baptist Church Manse/King Cl.	114 Virginia Avenue	Petersburg	26847					X
Grant	Barr's BP Station	108 S. Main Street	Petersburg	26847				X	
Grant	Basagic Funeral Home	Keyser Avenue	Petersburg	26847	X				
Grant	Brethren Church	Highland Avenue	Petersburg	26847					X
Grant	Calvin Thompson Home	108 Virginia Avenue	Petersburg	26847					X
Grant	Church of God	Myrtle Avenue	Petersburg	26847					X
Grant	Church of the Lord Jesus Christ	107 W. Central Avenue	Petersburg	26847					X
Grant	City Office/Police	Mt View Street	Petersburg	26847	X				
Grant	Davis House Bookstore	105 N. Main Street	Petersburg	26847					X
Grant	Dorcas Elementary School	S Mill Creek	Petersburg	26847		X			
Grant	Dr. Leslie's Home	202 Virginia Avenue	Petersburg	26847					X
Grant	EACHES Head Start	2 Hyre Avenue	Petersburg	26847	X				
Grant	Fire Department	South Main Street	Petersburg	26847	X				
Grant	First Baptist Church	112 Virginia Avenue	Petersburg	26847					X
Grant	Frontier Communications	Grove Street	Petersburg	26847	X				
Grant	Grace Lutheran Church	5 Pine Street	Petersburg	26847					X
Grant	Grant County Bank	3 N. Main Street	Petersburg	26847			X		
Grant	Grant County Farm Service	Potomac Avenue	Petersburg	26847	X				
Grant	Grant County Health Dept.	Rte. 55 W.	Petersburg	26847	X				
Grant	Grant County Maintenance	Grove Street	Petersburg	26847	X				
Grant	Grant County Multipurpose Bldg.	Valley View Street	Petersburg	26847	X				
Grant	Grant County Nursing Home	127 Early Avenue	Petersburg	26847		X			
Grant	Grant County Press	South Main Street	Petersburg	26847	X				
Grant	Grant County Senior Center	111 Virginia Avenue	Petersburg	26847		X			
Grant	Grant Memorial Hospital	Rte. 55 W.	Petersburg	26847	X				
Grant	Grove St. Methodist Church	Grove Street	Petersburg	26847					X
Grant	Hartman's Gas & Go	Keyser Avenue	Petersburg	26847				X	
Grant	Hermitage Motor Inn	203 Virginia Avenue	Petersburg	26847				X	
Grant	Homestead Motor Inn	1314 N Fork Highway	Petersburg	26847				X	
Grant	Human Resources	15 Grant Street	Petersburg	26847				X	
Grant	John Glover House	106 Virginia Avenue	Petersburg	26847					X
Grant	John VanMeter Law Office	28 Virginia Avenue	Petersburg	26847					X



TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Grant	Judy's Drug Store	24 N. Main Street	Petersburg	26847				X	
Grant	Levy Gate	220 N. Bridge Virginia Avenue	Petersburg	26847	X				
Grant	Levy Pumping Station	Lunice Creek Levy	Petersburg	26847	X				
Grant	Little Place Day Care	5 Grant Street	Petersburg	26847		X			
Grant	Mae King Home	218 Main Street	Petersburg	26847					X
Grant	Main St. Methodist Church	102 N. Main Street	Petersburg	26847					X
Grant	Maple Hill Cemetary	N. Main Street	Petersburg	26847					X
Grant	McDaniel Home/Mernie Judy	210 Virginia Avenue	Petersburg	26847					X
Grant	Mill Race Bridge	S. Main Street	Petersburg	26847	X				
Grant	Moomau Library	18 Mt. View Street	Petersburg	26847					X
Grant	Morman Church	Valley View Street	Petersburg	26847					X
Grant	Mountain View Apts.	Valley Street	Petersburg	26847				X	
Grant	Munting House	107 Virginia Avenue	Petersburg	26847					X
Grant	Myrtle Park Home	21 N. Main Street	Petersburg	26847					X
Grant	New Grant County Courthouse	5 Highland Avenue	Petersburg	26847	X				
Grant	Norma Groves Home	101 Virginia Avenue	Petersburg	26847					X
Grant	Old Courthouse	115 Virginia Avenue	Petersburg	26847					X
Grant	Old Grant County Bank	1 N. Main Street	Petersburg	26847					X
Grant	Old Halterman Bldg.	S. Main Street	Petersburg	26847					X
Grant	Park Motel	34 N. Main Street	Petersburg	26847				X	
Grant	Pendleton Community Bank	N. Grove Street	Petersburg	26847			X		
Grant	Petersburg Blocks	132 Keyser Avenue	Petersburg	26847				X	
Grant	Petersburg City Hall and Police Department	21 Mountain View Street	Petersburg	26847	X			X	
Grant	Petersburg Elementary School	333 Rig Street	Petersburg	26847		X			
Grant	Petersburg High School	207 Viking Drive	Petersburg	26847		X			
Grant	Petersburg Oil Co.	12 S. Grove Street	Petersburg	26847				X	
Grant	Petersburg Oil Co. Bulk Plant	Potomac Avenue	Petersburg	26847				X	
Grant	Petersburg Police Dept.	Mountain View Street	Petersburg	26847	X				
Grant	Petersburg Shop N Save	107 S. Grove Street	Petersburg	26847				X	
Grant	Petersburg Volunteer Fire Dept.	Main Street	Petersburg	26847	X				
Grant	Potomac Highland Guild	Park Street	Petersburg	26847				X	
Grant	Potomac Highland Mental Health Group Home	6 Park Street	Petersburg	26847		X			
Grant	Presbyterian Church	20 N. Main Street	Petersburg	26847					X
Grant	Reid House/Joy Retreat	105 Virginia Avenue	Petersburg	26847					X
Grant	Rite Aid Pharmacy	S. Main Street	Petersburg	26847				X	
Grant	River View Apts.	Valley Street	Petersburg	26847				X	
Grant	Schaffer Funeral Home	11 N. Main Street	Petersburg	26847	X				
Grant	Sheetz Convenience Store	Keyser Avenue	Petersburg	26847				X	
Grant	Shell / 7-11	419 Virginia Avenue	Petersburg	26847				X	
Grant	Social Security Office	N. Main Street	Petersburg	26847				X	



TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Grant	Soil Conservation Service	308 N. Main Street	Petersburg	26847				X	
Grant	South Branch Railroad	S. Main Street	Petersburg	26847	X				
Grant	Southern States	115 Potomac Street	Petersburg	26847				X	
Grant	St. Mary's Catholic Church	5 Pierpont Street	Petersburg	26847					X
Grant	Subway	Keyser Avenue	Petersburg	26847				X	
Grant	Summit Finance	N. Main Street	Petersburg	26847			X		
Grant	Summit Finance	S. Grove Street	Petersburg	26847				X	
Grant	Teddy Bear Day Care	Keyser Avenue	Petersburg	26847		X			
Grant	US Post Office	1 Postal Square	Petersburg	26847				X	
Grant	Valley Transport	71/2 Grant Street	Petersburg	26847				X	
Grant	Waste Water Treatment Plant	401 Pierpont Street	Petersburg	26847	X				
Grant	Waste Water Treatment Plant	Rig Street	Petersburg	26847	X				
Grant	Waste Water Treatment Plant	Virginia Avenue	Petersburg	26847	X				
Grant	Water Storage Facility	Laurel Road	Petersburg	26847	X				
Grant	Water Treatment Plant	Petersburg City Park	Petersburg	26847	X				
Grant	WQWV Radio Station	2 Alt Avenue	Petersburg	26847	X				
Hampshire	Augusta Auto Parts	15915 Northwestern Turnpike	Augusta	26704				X	
Hampshire	Augusta Church of Christ	15338 Northwestern Turnpike	Augusta	26704				X	
Hampshire	Augusta Elementary School	61 Pancione Loop	Augusta	26704	X				
Hampshire	Augusta EMS	16745 Northwestern Turnpike	Augusta	26704	X				
Hampshire	Augusta VFD	15690 Northwestern Turnpike	Augusta	26704	X				
Hampshire	Bank of Romney - Augusta	16285 Northwestern Turnpike	Augusta	26704				X	
Hampshire	Chick Buckbee Juvenile Detention Center	144 Jerry Land	Augusta	26704				X	
Hampshire	Dollar General Augusta	16912 Northwestern Turnpike	Augusta	26704				x	
Hampshire	Frye's Flat Liberty	18615 Northwestern Turnpike	Augusta	26704				X	
Hampshire	Hampshire County Health Dept.	16189 Northwestern Turnpike	Augusta	26704	X				
Hampshire	Hometown Solutions	15951 Northwestern Turnpike	Augusta	26704				X	
Hampshire	Potomac Highlands Regional Jail	355 Dolan Drive	Augusta	26704	X				
Hampshire	Valley Gas & piping	12669 Northwestern Turnpike	Augusta	26704			X		
Hampshire	Omps Grocery	17050 Bloomery Turnpike	Bloomery	26817				X	
Hampshire	Orica	1089 Ivy Run Hollow	Bloomery	26711			X		
Hampshire	Bank of Romney - Capon Bridge	2960 Northwestern Turnpike	Capon Bridge	26711				X	
Hampshire	Capon Bridge Community Center	2766 Northwestern Turnpike	Capon Bridge	26711				X	
Hampshire	Capon Bridge EMS	2775 Northwestern Turnpike	Capon Bridge	26711	X				



TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Hampshire	Capon Bridge ES	99 Capon School Street	Capon Bridge	26711	X				
Hampshire	Capon Bridge MS	75 Capon School Street	Capon Bridge	26711	X				
Hampshire	Capon Bridge Office of HCSO	196 Capon School Street	Capon Bridge	26711	X				
Hampshire	Capon Bridge PD/Town Office	1 Whitacre Lane	Capon Bridge	26711	X				
Hampshire	Capon Bridge PO	3164 Northwestern Turnpike	Capon Bridge	26711				X	
Hampshire	Capon Bridge VFD	2766 Northwestern Turnpike	Capon Bridge	26711	X				
Hampshire	Capon Springs VFD	3144 Capon Springs Road	Capon Bridge	26711	X				
Hampshire	Capon Valley Market	2673 Northwestern Turnpike	Capon Bridge	26711				X	
Hampshire	Central Hampshire PSD WWTP	18540 Northwestern Turnpike	Capon Bridge	26711	X				
Hampshire	Country Pride Grocery	24890 Northwestern Turnpike	Capon Bridge	26711				X	
Hampshire	Crane's Welding	87 Northwestern Turnpike	Capon Bridge	26711			X		
Hampshire	Dollar General Capon Bridge	3700 Northwestern Turnpike	Capon Bridge	26711				X	
Hampshire	Family Dollar Capon Bridge	Northwestern Turnpike	Capon Bridge	26711				x	
Hampshire	First National Bank - Capon Bridge	2957 Northwestern Turnpike	Capon Bridge	26711				X	
Hampshire	Griffin Funeral Home	2807 Northwestern Turnpike	Capon Bridge	26711				X	
Hampshire	Reed's Pharmacy	2905 Northwestern Turnpike	Capon Bridge	26711				X	
Hampshire	SJ Morse Company	2736 Northwestern Turnpike	Capon Bridge	26711			X		
Hampshire	Green Spring Rail Yard	797 Railroad Street	Green Spring	26722				X	
Hampshire	Capt. David Pugh House	CR 14 at CR 23/4	Hooks Mills	26711					X
Hampshire	Levels Volunteer Fire Co.	28 Frenches Station Road	Levels	25431	X				
Hampshire	North River Valley VFD	15137 Ford Hill Road	Rio	26801	X				
Hampshire	Advanced Auto Parts	111 W. Main Street	Romney	26757				X	
Hampshire	Bank of Romney - Romney	93 East Main Street	Romney	26757				X	
Hampshire	Bank of Romney - Romney	95 E Main Street	Romney	26757				X	
Hampshire	CVS Pharmacy	30 Heritage Circle	Romney	26757				X	
Hampshire	Dave's Exxon	495 North High Street	Romney	26757				X	
Hampshire	Dollar General Romney	73 Hannas Road	Romney	26757				x	
Hampshire	Dyno Nobel	240 Dyno Nobel Drive	Romney	26757			X		
Hampshire	Eastern Building Supply	498 East Main Street	Romney	26757				X	
Hampshire	Family Dollar Romney	25101 Northwestern Turnpike	Romney	26757				x	
Hampshire	First National Bank - Romney	105 N High Street	Romney	26757				X	
Hampshire	Food Lion Grocery	22240 Northwestern Turnpike	Romney	26757				X	
Hampshire	Hampshire County Co-Op	56 South Marsham Street	Romney	26757				X	
Hampshire	Hampshire County Courthouse	19 East Main Street	Romney	26757	X				
Hampshire	Hampshire County EOC/911 Center	1160 Jersey Mountain Road	Romney	26757	X				
Hampshire	Hampshire County Judiciary Court	56 South High Street	Romney	26757	X				
Hampshire	Hampshire Healthcare Center	260 Sunrise Boulevard	Romney	26757		X			
Hampshire	Hampshire HS	157 Trojan Way	Romney	26757	X				



TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Hampshire	Hampshire Memorial Hosp.	363 Sunrise Boulevard	Romney	26757	X				
Hampshire	Hampshire Wellness	68 Heritage Circle	Romney	26757	X				
Hampshire	HCSO Romney Office	66 N High Street	Romney	26757	X				
Hampshire	HMI Incorporated	24448 Northwestern Turnpike	Romney	26757			X		
Hampshire	Hogbin Oil	22841 Northwestern Turnpike	Romney	26757				X	
Hampshire	Kuykendall Polyagonal Barn	South Branch River Road	Romney	26757					X
Hampshire	Lambert's Pharmacy	22630 Northwestern Turnpike	Romney	26757				X	
Hampshire	Literary Hall	1 West Main Street	Romney	26757					X
Hampshire	Mountaintop Truck Stop	22700 Northwestern Turnpike	Romney	26757				X	
Hampshire	Mountainview Manor	Campbell Road	Romney	26757				X	
Hampshire	Old District Parsonage	351 High Street	Romney						X
Hampshire	Petersburg Commercial oil	Northwestern Turnpike	Romney	26757				X	
Hampshire	Potomac Highlands Guild Clinic	245 N Charlevoix Place	Romney	26757				X	
Hampshire	Rite Aid	150 W. Main Street	Romney	26757				X	
Hampshire	Romney EMS	549 Center Avenue	Romney	26757	X				
Hampshire	Romney ES	45 School Street	Romney	26757	X				
Hampshire	Romney FD	175 S High Street	Romney	26757	X				
Hampshire	Romney Medical Associates	22347 Northwestern Turnpike	Romney	26757	X				
Hampshire	Romney MS	1975 Calvert Drive	Romney	26757	X				
Hampshire	Romney Municipal Building	340 East Main Street	Romney	26757	X				
Hampshire	Romney Public Housing Authority	100 Valley View Drive	Romney	26757				X	
Hampshire	Romney WTP	206 Feather Lane	Romney	26757	X				
Hampshire	Romney WTP & WWTP	Red Bud Lane	Romney	26757	X				
Hampshire	Seven Eleven	209 West Main Street	Romney	26757				X	
Hampshire	Sheetz	136 East Main Street	Romney	26757				X	
Hampshire	Silver Tree Apartments	450 Depot Street	Romney	26757				X	
Hampshire	Sloan Parker House	32049 Northwestern Turnpike	Romney	26757					X
Hampshire	South Branch Inn	92 Heritage Circle	Romney	26757				X	
Hampshire	Southern States	25108 Northwestern Turnpike	Romney	26757				X	
Hampshire	Sycamore Dale	Off CR 8	Romney						X
Hampshire	Tractor Supply	181 Solid Oak Drive	Romney	26757				X	
Hampshire	Trinity Family Healthcare	55 North Bolton Street	Romney	26757	X				
Hampshire	Unity Apartments	250 Fairfax Street	Romney	26757				X	
Hampshire	US Army Reserve Center	11 Veteran Boulevard	Romney	26757				X	
Hampshire	Washington Gas	114 Hampshire Gas Drive	Romney	26757			X		
Hampshire	Wilson-Woodrow-Mytinger House	51 W Gravel Lane	Romney						X
Hampshire	WV School for the Deaf & Blind	301 E Main Street	Romney	26757	X				



TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Hampshire	WVSP Barracks-Romney	525 Depot Street	Romney	26757	X				
Hampshire	Dollar General Slanesville	Bloomery Turnpike	Slanesville	25444				x	
Hampshire	Slanesville EMS	6951 Bloomery Turnpike	Slanesville	25444	X				
Hampshire	Slanesville ES	6550 Bloomery Turnpike	Slanesville	25444	X				
Hampshire	Slanesville General Store	40 Slanesville Turnpike	Slanesville	25444				X	
Hampshire	Slanesville VFD	6951 Bloomery Turnpike	Slanesville	25444	X				
Hampshire	Amerigas	76 Propane Drive	Springfield	26763			X		
Hampshire	Bank of Romney - Springfield	8504 Cumberland Road	Springfield	26763				X	
Hampshire	Country Store	8007 Cumberland Road	Springfield	26763				X	
Hampshire	Dollar General Springfield	8189 Cumberland Road	Springfield	26763				x	
Hampshire	John J. Cornwell ES	12092 Jersey Mountain Road	Springfield	26763	X				
Hampshire	Spring Valley Health care	8685 Cumberland Road	Springfield	26763	X				
Hampshire	Springfield EMS	12 Mary Sue Lane	Springfield	26763	X				
Hampshire	Springfield VFD	239 Springfield Turnpike	Springfield	26763	X				
Hampshire	Springfield-Greenspring ES	43 Education Loop	Springfield	26763	X				
Hampshire	T&S Market	216 Springfield Turnpike	Springfield	26763				X	
Hampshire	Washington Bottom Farm	651 Washington Bottom Road	Springfield	26763					X
Hampshire	Scanlon Farm	Three Churches Run Road	Three Churches						X
Hardy	E. Hardy Early Mid. & High	238 & 259 Cougar Drive	Baker	26801		X			
Hardy	Hardy Telecom	2255 Kimset Run Road	Lost City	26810				X	
Hardy	Brethren Church (Shelter)	115 Clay Street	Moorefield	26836	X				
Hardy	Capon Valley Bank	717 N. Main Street	Moorefield	26836				X	
Hardy	Elderly Lee St. Apts.	301 Lee Street	Moorefield	26836		X			
Hardy	Emergency Oper.	157 Freedom Way	Moorefield	26836	X				
Hardy	Episcopal Church	307 Winchester Avenue	Moorefield	26836					X
Hardy	Fertig Cabinet Co.	141 Beans Lane	Moorefield	26836			X		
Hardy	Fin Hawse	8 Lee Street	Moorefield	26836	X				
Hardy	Food Lion	599 S. Main Street	Moorefield	26836				X	
Hardy	Fraleys EMS	106 Washington Street	Moorefield	26836	X				
Hardy	Frontier	108 S. Elm Street	Moorefield	26836	X				
Hardy	Gas Station Sheetz	268 Genny Loop Road	Moorefield	26836				X	
Hardy	Grant County Bank	500 S. Main Street	Moorefield	26836				X	
Hardy	Hahn Medical (Hardy Co. Med)	422 S. Main St. Mfld.	Moorefield	26836	X				
Hardy	Hardman's Hardware	131 N. Main Street	Moorefield	26836				X	
Hardy	Hardy Co. Comm-Aging Senior Center	Spring Avenue	Moorefield	26836		X			
Hardy	Hardy Co. Court	204 Washington St #111	Moorefield	26836				X	
Hardy	Hardy Co. Health Dept.	411 Spring Ave.	Moorefield	26836				X	
Hardy	Hardy Co. Library	Main Street Moorefield	Moorefield	26836				X	
Hardy	Hardy Co. PSD Booster Pump	2094 Us Hwy 220	Moorefield	26836	X				
Hardy	Hardy Co. RDA	219 N Main Street	Moorefield	26836				X	



TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Hardy	Hardy Co. RDA	204 Washington St	Moorefield	26836				X	
Hardy	Hardy Co. RDA Armory	223 N. Main St #102	Moorefield	26836				X	
Hardy	Hardy Co. RDA Child Care Center	1989 Rte. 55E	Moorefield	26836		X			
Hardy	Hardy County Rod & Gun	1 Old Capon Road	Moorefield	26836				X	
Hardy	Hardy Telecom	121 S. Main Street	Moorefield	26836	X				
Hardy	Ivan Cowger - Mullins Hotel	104 S. Main Street	Moorefield	26836					X
Hardy	Love Memorial Clinic	112 Kuykendall Lane	Moorefield	26836	X				
Hardy	Love Memorial Clinic	112 Kuykendall Lane	Moorefield	26836	X				
Hardy	Maslin House	131 S. Main Street	Moorefield	26836					X
Hardy	McCoy Museum	121 N. Main Street	Moorefield	26836					X
Hardy	Moorefield Elementary School	402 N. Main Street	Moorefield	26836		X			
Hardy	Moorefield High School	401 N. Main Street	Moorefield	26836		X			
Hardy	Moorefield Sewage	206 Winchester Ave	Moorefield	26836	X				
Hardy	Moorefield Elementary School	402 N. Main Street	Moorefield	26836	X				
Hardy	Moorefield Examiner Building	132 S Main Street	Moorefield	26836					X
Hardy	Moorefield Flood Levee	N/A	Moorefield	26836	X				
Hardy	Moorefield High School	401 N. Main Street	Moorefield	26836	X				
Hardy	Moorefield Middle School	303 Caledonia Heights Road	Moorefield	26836		X			
Hardy	Moorefield Middle School	303 Caledonia Heights Road	Moorefield	26836		X			
Hardy	Moorefield Town Library	102 N. Main Street	Moorefield	26836					X
Hardy	Moorefield Town Office	206 Winchester Avenue	Moorefield	26836	X				
Hardy	Moorefield Waste Water System	125 Sewer Plant Road	Moorefield	26836	X				
Hardy	Moorefield Water Plant System	175 Water Plant Drive	Moorefield	26836	X				
Hardy	MVFC	114 Kuykendall Lane	Moorefield	26836	X				
Hardy	Old Bank (Sager)	107 S. Main Street	Moorefield	26836					X
Hardy	Old Fields Bridge	US HWY 220	Moorefield	26836	X				
Hardy	Pendleton Bank	402 S. Main Street	Moorefield	26836				X	
Hardy	Post Office	410 Spring Street	Moorefield	26836				X	
Hardy	Potomac Valley Medicine	8 Lee St.	Moorefield	26836	X				
Hardy	Poultry Plant Pilgrim's Pride	129 Potomac Avenue	Moorefield	26836		X			
Hardy	Presbyterian Church	109 S. Main Street	Moorefield	26836					X
Hardy	Senior Center (Feeding Center)	409 Spring Street	Moorefield	26836				X	
Hardy	Shop & Save	749 N. Main Street	Moorefield	26836				X	
Hardy	South Branch Stock Yard	341 Clay Street	Moorefield	26836			X		
Hardy	South Branch Valley Railroad	120 Water Plant Drive	Moorefield	26836			X		
Hardy	Summit Financial Bank HQ	310 N. Main Street	Moorefield	26836			X		
Hardy	Tom Nawse Home	307 Winchester Avenue	Moorefield	26836					X
Hardy	Tommy & Debbie Crites	202 S. Main Street	Moorefield	26836					X
Hardy	Town Shed & Equipment	339 Clay Street	Moorefield	26836	X				
Hardy	WV RR Authority	N Main Street	Moorefield	26836				X	
Hardy	WV State Police	5153 US Hwy 220	Moorefield	26836	X				
Hardy	7-11 Store	15 W Main Street	Wardensville	26851				X	



TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Hardy	Anderson House	125 Trout Run Road	Wardensville	26851					X
Hardy	Baker House	215 W Main Street	Wardensville	26851					X
Hardy	Bannock House	55 W Main Street	Wardensville	26851					X
Hardy	Burch House	185 E Main Street	Wardensville	26851					X
Hardy	Capon Valley Bank	2 W Main Street	Wardensville	26851			X		
Hardy	Capon Valley Vol. Fire Dept., War Memorial Building & VFW	190 E Main Street	Wardensville	26851					X
Hardy	Cline House	164 W Main Street	Wardensville	26851					X
Hardy	Cline-Heishman House	50 Honeysuckle	Wardensville	26851					X
Hardy	Commercial Bldg. (vacant)	Oak Street	Wardensville	26851				X	
Hardy	David A Henburg	275 E Main Street	Wardensville	26851				X	
Hardy	Doyle House	70 High Street	Wardensville	26851					X
Hardy	Evans House	E Main Street	Wardensville	26851					X
Hardy	Fansler House	150 W. Main Street	Wardensville	26851					X
Hardy	Firefly Inn	30 W Main Street	Wardensville	26851				X	
Hardy	Frye House	105 Trout Run Road	Wardensville	26851					X
Hardy	Garrett Insurance Agency	175 W Main Street	Wardensville	26851				X	
Hardy	Geoffrey Byrd House	105 W Main Street	Wardensville	26851					X
Hardy	Highland Storage	360 E. Main Street	Wardensville	26851				X	
Hardy	Highland Trace Realty	200 E Main Street	Wardensville	26851				X	
Hardy	Hisghman House	E Main Street	Wardensville	26851					X
Hardy	Hott-Orndorf House	Wardensville	Wardensville	26851					X
Hardy	Jim Oates	115 W Main Street	Wardensville	26851					X
Hardy	Kac-A-Pon Restaurant	395 E Main Street	Wardensville	26851				X	
Hardy	Kerr House	210 W Main Street	Wardensville	26851					X
Hardy	Large storage building	W Main Street	Wardensville	26851					X
Hardy	Liggett House	115 Trout Run Road	Wardensville	26851					X
Hardy	Lost River Trading Post	E Main Street	Wardensville	26851			X		
Hardy	Loy Griffin Funeral Home	110 W. Main Street	Wardensville	26851					X
Hardy	Lutheran Parsonage House	W Main Street	Wardensville	26851					X
Hardy	McKeever House	Maple Street	Wardensville	26851					X
Hardy	McKeever/Kotz House	Carpenters Avenue	Wardensville	26851					X
Hardy	Mielzarek House	50 W Main Street	Wardensville	26851					X
Hardy	Miller House	205 W Main Street	Wardensville	26851					X
Hardy	More Store	65 W Main Street	Wardensville	26851					X
Hardy	Old Jail/ Blacksmith's	W. Main Street	Wardensville	26851					X
Hardy	Old Town Hall Building	55 Oak Street	Wardensville	26851					X
Hardy	Orndorf-Sayers House	70 W. Main Street	Wardensville	26851					X
Hardy	Pine Street Lift Station	45 Pine Street	Wardensville	26851					
Hardy	Polly Peer House	40 W Main Street	Wardensville	26851					X
Hardy	Rarco - Stephen Shook	105 E Main Street	Wardensville	26851					X
Hardy	Robison House	Laurel Street	Wardensville	26851					X
Hardy	Sencindiver House	80 High Street	Wardensville	26851					X



TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Hardy	Sine House	Carpenters Ave	Wardensville	26851					X
Hardy	Smith Bldg.	135 W Main Street	Wardensville	26851					X
Hardy	Snider House	80-84 Carpenters Ave	Wardensville	26851					X
Hardy	Snider/Pugh House	Carpenters Avenue	Wardensville	26851					X
Hardy	Snider-Orndorf House 1	105 High Street	Wardensville	26851					X
Hardy	Snider-Osberg House	Maple Street	Wardensville	26851					X
Hardy	St. Peters Lutheran Church	60 W Main Street	Wardensville	26851					X
Hardy	Timothy Kriegel	200 W Main Street	Wardensville	26851				X	
Hardy	Triplett House	60 High Street	Wardensville	26851					X
Hardy	Warden Acres Lift Station	430 Warden Circle Road	Wardensville	26851					
Hardy	Warden Hotel Bldg	205 W Main Street	Wardensville	26851					X
Hardy	Wardensville Cemetery	E Main Street	Wardensville	26851					X
Hardy	Wardensville Community Center	345 E Main Street	Wardensville	26851					
Hardy	Wardensville Garage	423 SR 256 North	Wardensville	26851					
Hardy	Wardensville Sewer Plant	589 SR 259 North	Wardensville	26851					
Hardy	Wardensville Spring House	121 Waites Run Road	Wardensville	26851					
Hardy	Wardensville Town Hall	25 Warrior Way	Wardensville	26851					
Hardy	Wardensville Visitor Center	301 E Main Street	Wardensville	26851					
Hardy	Water Tank - Warden Acres	33 Hardy Drive	Wardensville	26851					
Hardy	Water Tank - Anderson Ridge	736 Waites Run Road	Wardensville	26851					
Hardy	White Star Restaurant & Apt	80 W Main Street	Wardensville	26851					X
Hardy	Wilson Hotel Bldg.	W Main Street	Wardensville	26851					X
Hardy	Wilson-Peer House	Maple Street	Wardensville	26851					X
Mineral	BOE Burlington Grad School	10446 Patterson Creek Road	Burlington	26710		X			
Mineral	Burlington Fire Department(44)	1640 Northwestern Turnpike	Burlington	26710	X				
Mineral	Burlington Library	14 Hope Lane	Burlington	26710				X	
Mineral	Burlington Primary School	10474 Patterson Creek Road	Burlington	26710		X			
Mineral	Burlington United Methodist Home for Children & Youth Inc. Children's Home Chapel	120 Hope Lane	Burlington	26710		X		X	
Mineral	Fire Co. Burlington Station	1640 Northwestern Turnpike	Burlington	26710	X				
Mineral	WV Dept. of Highways A Corp Burlington District	Eastern Section of storage area is in the flood plain, office's and other structures are out of the flood plain	Burlington	26710				X	
Mineral	Board of Education Fountain School	Rte. 46	Cabin Run	26726		X			
Mineral	Fountain Public Service Dist. Pump House	ES Rte. 46 Fountain Prop	Cabin Run	26726				X	
Mineral	Mineral County Court Larenim Park Bldgs.	Rte. 11	Cabin Run	26726				X	
Mineral	Allegheny Power	Miller Road Co. Rte. 28/1	Carpendale	26753				X	



TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Mineral	Carpendale Town Hall Building	136 N. Cedar Street	Carpendale	26753			X		
Mineral	Holy Cross United Methodist Church	49 S Cedar Lane	Carpendale	26753				X	
Mineral	Kingsford Charcoal Warehouse	304 Kingsford Drive	Carpendale	26753				X	
Mineral	Sewer Pumping Station	(5) Various Locations	Carpendale	26753	X				
Mineral	Town Garage	Cedar Avenue	Carpendale	26753				X	
Mineral	Elk District Ambulance (4)	20 Maple Street	Elk Garden	26717	X				
Mineral	Elk Garden Fire Department (140)	36 Maple Street	Elk Garden	26717	X				
Mineral	Elk Garden Primary School	86 Elk Garden Highway	Elk Garden	26717		X			
Mineral	Elk Garden Town Hall/Rural Health Clinic	Main Street	Elk Garden	26717				X	
Mineral	Elk Garden Volunteer Fire Station	30 Green Street	Elk Garden	26717	X				
Mineral	U.S. Post Office	Oak and Center Streets	Elk Garden	26717				X	
Mineral	Volunteer Ambulance Station	20 Green Street	Elk Garden	26717	X				
Mineral	Waste Water Treatment Plant	Elk Avenue	Elk Garden	26717	X				
Mineral	BOE Fort Ashby IS	290 Frankfort Intermediate School Road	Fort Ashby	26719		X			
Mineral	BOE Fort Ashby New ES Bldg.	44 Fort Ashby Primary School Road	Fort Ashby	26719		X			
Mineral	Dawnview Nursing Home	15 Diane Drive	Fort Ashby	26719		X			
Mineral	Fort Ashby Community Center Inc.	107 Dans Run Road	Fort Ashby	26719				X	
Mineral	Fort Ashby Fire Co. - Fairgrounds	59 Exhibitor Way	Fort Ashby	26719	X				
Mineral	Fort Ashby Fire Department(37)	29 Dans Run Road	Fort Ashby	26719	X				
Mineral	Fort Ashby Library	57 Presidents Street	Fort Ashby	26719				X	
Mineral	Fort Ashby Primary School	44 Fort Ashby Primary School Street	Fort Ashby	26719		X			
Mineral	Frankfort Intermediate School	284 Intermediate Drive	Fort Ashby	26719		X			
Mineral	Keyser-Mineral Co Library Association/ Fort Ashby Library	55 President's Lane	Fort Ashby	26719				X	
Mineral	BOE Keyser HS	1 One Tornado Way	Keyser	26726		X			
Mineral	BOE Keyser Primary MS	1543 Harley O Staggers Drive	Keyser	26726		X			
Mineral	BOE Mineral Co. Minco Park Bldgs.	21 Camp Minco Lane	Keyser	26726		X			
Mineral	BOE New Creek School	1 Baker Place	Keyser	26726		X			
Mineral	BOE Office & Bus Garage	2071 Harley O Staggers Drive	Keyser	26726		X			
Mineral	BOE VoTech School and Greenhouses	1731 Harley O Staggers Drive	Keyser	26726		X			
Mineral	Burlington Methodist Children Group Home	537 New Creek Highway	Keyser			X			
Mineral	Burlington United Methodist Family Services- Keyser	415 Harley O Staggers Drive	Keyser	26726				X	

TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Mineral	Burlington United Methodist Family Services- Keyser Main Office	539 New Creek Highway	Keyser	26726				X	
Mineral	Burlington United Methodist Family Services- Keyser Transitional Living	145 W Southern Drive	Keyser	26726				X	
Mineral	City of Keyser	580 S Water Street	Keyser	26726	X				
Mineral	City of Keyser Sewage Disp	881 Waxler Road	Keyser	26726	X				
Mineral	Family Crisis Center	28 N F Street	Keyser	26726				X	
Mineral	Fire Co. Keyser Volunteer Station I	180 West Piedmont Street	Keyser	26726	X				
Mineral	Fountain Fire Department(39)	10707 Knobley Road	Keyser	26726	X				
Mineral	Fountain Primary School	289 Fountain School Road	Keyser	26726		X			
Mineral	Keyser Building Commission City Hall & Apt	111 S. Davis Street	Keyser	26726				X	
Mineral	Keyser City of Filtration Plant	580 S Water Street	Keyser	26726	X				
Mineral	Keyser City of Keyserhouse Apts.	12 N. Main Street	Keyser	26726				X	
Mineral	Keyser EMS (57)	234 S Water Street	Keyser	26726	X				
Mineral	Keyser Fire Co Fire Station #2	1550 Cornell Street	Keyser	26726	X				
Mineral	Keyser Fire Department (33)	Station 1: 180 W Piedmont Street Station 2: 1550 Cornell Street	Keyser	26726	X				
Mineral	Keyser High School	328 One Tornado Way	Keyser	26726		X			
Mineral	Keyser Housing Authority Apts.	440 Virginia Street	Keyser	26726				X	
Mineral	Keyser Housing Authority-Residences	470 Virginia Street	Keyser	26726		X			
Mineral	Keyser Library	101 N Main Street	Keyser	26726				X	
Mineral	Keyser Middle School	879 Harley O Staggers Drive	Keyser	26726		X			
Mineral	Keyser Police Station	105 N. Davis Street	Keyser	26726	X				
Mineral	Keyser Primary School	1123 Harley O Staggers Drive	Keyser	26726		X			
Mineral	Library Mineral County Library Bldg.	105 N. Main Street	Keyser	26726				X	
Mineral	Mineral County Alternative School(Inside of Keyser Middle School)	879 Harley O Staggers Drive	Keyser	26726		X			
Mineral	Mineral County Commission Health Dept. Bldg.	917 Harley O Staggers Drive	Keyser	26726				X	
Mineral	Mineral County Commission Detention Center	100 East Street	Keyser	26726				X	
Mineral	Mineral County Committee on Aging/Senior Citizens Center	30 S. Church Street	Keyser	26726		X			
Mineral	Mineral County Courthouse	150 Armstrong Street	Keyser	26726	X				
Mineral	Mineral County Detention Center	100 East Street	Keyser	26726	X				
Mineral	Mineral County EOC/911 Center	392 Pine Swamp Road	Keyser	26726	X				

TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Mineral	Mineral County Health Department	541 Harley O Staggers Drive	Keyser	26726	X				
Mineral	Mineral County Technical Center	981 Harley O Staggers Drive	Keyser	26726		X			
Mineral	Piney Valley Nursing Home	135 W Southern Drive	Keyser	26726		X			
Mineral	Potomac State College Campus	101 Fort Avenue	Keyser	26726		X			
Mineral	Potomac Valley Hospital	122 Pin Oak Lane	Keyser	26726	X				
Mineral	Potomac Village Assoc. - Housing	500 Carskadon Lane	Keyser	26726				X	
Mineral	Short Gap Fire Department(34)	128 Knobley Road	Keyser	26726	X				
Mineral	State BD of Control Potomac State College Art Center	C Street and B Street	Keyser	26726		X			
Mineral	State of West Virginia National Guard Armory	Off Arnold Sr.	Keyser	26726			X		
Mineral	USA ABL Bldgs.	Rocket Center Highway	Keyser	26726				X	
Mineral	New Creek Fire Department(38)	3628 New Creek Highway	New Creek	26743	X				
Mineral	New Creek Primary School	85 New Creek School Road	New Creek	26743		X			
Mineral	WV Dept. Highways New Creek Garage	10760 Northwestern Turnpike	New Creek	26743				X	
Mineral	Fire Co. Patterson Creek - Community Bldg.	WS Rte. 28-3 Patterson Creek Road	Patterson Creek	26753				X	
Mineral	Fire Co. Patterson Creek - Fire Station	4022 Patterson Creek Village Turnpike	Patterson Creek	26753	X				
Mineral	D & H Warehouse	154 Fairview Street	Piedmont	26750				X	
Mineral	Fire Dept. #24	52 Second Street	Piedmont	26750	X				
Mineral	Masteller Coal Co. Operation Bldgs.	827 Beryl Road	Piedmont	26750			X		
Mineral	Mead Westvaco Westbaco Beryl Wood Yard	Rte. 1	Piedmont	26750				X	
Mineral	Midrise Building	51 Jones Street	Piedmont	26750				X	
Mineral	Piedmont Fire Department (24)	54 2nd Street	Piedmont	26750	X				
Mineral	Piedmont Housing Authority-Residences	25 Jones Street	Piedmont	26750		X			
Mineral	Piedmont Library	9 Childs Avenue	Piedmont	26750				X	
Mineral	Piedmont Waste Water	Water Street	Piedmont	26750	X				
Mineral	Potable Waste	20 Water Street	Piedmont	26750	X				
Mineral	Verizon Telephone Office	6 Green Street	Piedmont	26750			X		
Mineral	Westvaco Medical Center	22 Orchard Street	Piedmont	26750	X				
Mineral	Frankfort High School	393 Falcon Way	Ridgeley	26753		X			
Mineral	Frankfort Middle School	356 Golden Drive	Ridgeley	26753		X			
Mineral	Frankfort PSD	3232 Patterson Creek Village Turnpike	Ridgeley	26753	X				
Mineral	Pattersons Creek Fire Department (35)	4022 Patterson Creek	Ridgeley	26753	X				
Mineral	Ridgeley Fire Department (25)	568 Veterans Memorial Highway	Ridgeley	26753	X				

TABLE 2.4.A ASSET INVENTORY

County	Name or Description of Asset	Address	City/Town	Zip	Critical	Vulnerable	Economic	Special	Historic
Mineral	Orbital ATK	156 Plant Access Road	Rocket Center	26726			X		
Mineral	BOE Frankfort HS	393 Falcon Way	Short Gap	26753		X			
Mineral	Greater Cumberland Regional Airport	165 Terminal Loop	Wiley Ford	26767	X				
Mineral	Wiley Ford Fire Department (27)	149 Stately Street	Wiley Ford	26767	X				
Mineral	Wiley Ford Primary School	71 Wiley Ford School Road	Wiley Ford	26767		X			
Pendleton	Brandwine Elementary	11480 Blue Gray Trail	Brandywine	26802		X			
Pendleton	Brandywine Water Plant	Rt. 21 of Pendleton	Brandywine	26802	X				
Pendleton	South Fork Fire/Rescue	593 Sugar Grove Road	Brandywine	26802	X				
Pendleton	Circleville Fire Dept.	500 Switchboard Lane	Circleville	26804	X				
Pendleton	Circleville Water Plant	Timber Ridge of Pendleton	Circleville	26804	X				
Pendleton	Bill Box Pharmacy	203 N Main Street	Franklin	26807				X	
Pendleton	Family Dollar Store	US 220 and 33	Franklin	26807				X	
Pendleton	Franklin Oil Co.	3263 Petersburg Turnpike	Franklin	26807			X		
Pendleton	Franklin Town Hall	305 N High Street	Franklin	26807	X				
Pendleton	Franklin VFD	200 Confederate Road	Franklin	26807	X				
Pendleton	Pendleton Community Care	314 Pine Street	Franklin	26807	X				
Pendleton	Pendleton County 911	3825 Blu Gray Trail	Franklin	26807	X				
Pendleton	Pendleton County Courthouse	100 N Main Street	Franklin	26807	X				
Pendleton	Pendleton County EOC	200 Confederate Road	Franklin	26807	X				
Pendleton	Pendleton County HS/MS	409 Maple Avenue	Franklin	26807		X			
Pendleton	Rite Aid Pharmacy	71 Mountaineer Dr.	Franklin	26807				X	
Pendleton	Valley National Gas	1256 Mountaineer Dr.	Franklin	26807	X				
Pendleton	North Fork Elementary School	Price Way	North Fork	24868		X			
Pendleton	North Fork Rescue	Rt. 33 of Pendleton	North Fork	24868	X				
Pendleton	North Fork Water Line	Rt. 220 of Pendleton	North Fork	24868	X				
Pendleton	North Fork Primary Care	16921 Mountaineer Drive	Riverton	26814		X			
Pendleton	Spruce Knob Telephone	17009 Mountaineer Dr.	Riverton	26814				X	
Pendleton	Seneca Rocks Fire Dept.	Allegheny Dr.	Seneca Rocks	26884	X				
Pendleton	Upper Tract Fire & Rescue	660 Little Stoney	Sugar Grove	26815	X				
Pendleton	Upper Tract Industrial Pk.	10719 Petersburg Pike	Upper Tract	26866				X	



## 2.5 DEVELOPMENT TRENDS

§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.

Understanding the risk the region faces from future hazard occurrences is a multifaceted exercise. The profiles in [Section 2.3](#) provide a background of this risk and provide loss estimates based on historical data, but are generally based in the past. Identifying and analyzing development trends allows for the consideration of future vulnerability. This information comes from a variety of sources, including economic trends, municipal comprehensive plans, and interviews with local officials. The following pages contain select examples of how some jurisdictions are dealing with future development.

All five 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.

Recently, the jurisdictions throughout the region have been pursuing a number of infrastructure projects. The CEDS identifies a variety of projects in each county and the region as a whole that are planned for development. The following is a list of the projects listed in the 2017 CEDS document for Region 8 counties.

<b>TABLE 2.5.A TARGETED DEVELOPMENT AREAS</b>	
<i>Development Projects</i>	<i>Applicant</i>
Grant County	
Mill Race Restoration	City of Petersburg
Petersburg Sewer Plant Expansion	City of Petersburg
Petersburg Streets	City of Petersburg
Union Educational Complex Athletic Track & Field	Grant County BOE
GCDA M. Top Industrial Park 3-phase Power Project	Grant County Development Authority
GCDA Multi-Tenant Building HVAC Replacement	Grant County Development Authority
Mt. Top Industrial Park Natural Gas Project	Grant County Development Authority
Mt. Top Industrial Park Sewer Project	Grant County Development Authority
Mt. Top Industrial Park Water System	Grant County Development Authority



<b>TABLE 2.5.A TARGETED DEVELOPMENT AREAS</b>	
<i>Development Projects</i>	<i>Applicant</i>
Grant County Health Facility	Grant County Health Department
Jordan Run Water Line Upgrade	Grant County PSD
Bayard Storm Sewers – Flood Management	Town of Bayard
Bayard Streets and Sidewalks	Town of Bayard
<b>Hampshire County</b>	
Central Hampshire Sewer Upgrade	Central Hampshire PSD
CHPSD Sewer Extension/North River	Central Hampshire PSD
CHPSD water extension/Second Water Source	Central Hampshire PSD
Frenchburg Wastewater Treatment Plant	Central Hampshire PSD
Springfield Sewer System	Central Hampshire PSD
West Hampshire Water/Purgitsville	Central Hampshire PSD
Romney Accessibility Project	City of Romney
Romney Blight Reduction	City of Romney
Romney Sewer Plant Improvement	City of Romney
Romney Sidewalk Improvements	City of Romney
Romney Streets	City of Romney
Green Spring Bridge Replacement	Hampshire County Commission
Hampshire Co Natural Gas Feasibility Study	Hampshire County Development Authority
Romney Rail Spur – Station	Hampshire County Development Authority
WV Broadband Co-op Tower/Fiber Project	Hampshire County Development Authority
Capon Bridge Community Park	Town of Capon Bridge
Capon Bridge – School Street Improvements	Town of Capon Bridge
<b>Hardy County</b>	
E.A. Hawse Housing	E.A. Hawse
Dover Hollow Water Extension Project	Hardy County Commission
Stoney Run Watershed	Hardy County Commission
E. Byrd Learning Project	Hardy County Partnership
American Woodmark Building Purchase	Hardy County RDA
Hardy County Child Care Center Expansion	Hardy County RDA
Hardy County Complex/ New Business Park	Hardy County RDA
Winchester and Main Project	Hardy County RDA
Moorefield Municipal Water Plant	Town of Moorefield
Wardensville Regional Government	Town of Wardensville
<b>Mineral County</b>	
Burlington VFD Festival Facility	Burlington VFD
Keyser Sewer Project	City of Keyser
Keyser Water Phase III	City of Keyser
Keyser Water System Improvements	City of Keyser
Piedmont Recreation Improvements	City of Piedmont
Piedmont RR Station Restoration	City of Piedmont
Piedmont Sewer Improvements	City of Piedmont
Piedmont Sidewalk Improvements	City of Piedmont
Piedmont Water Phase II	City of Piedmont
Foundation Water Extensions	Fountain PSD
Foundation Fire Station/Community Center	Fountain VFD
Frankfort District Sewer System Phase 2	Frankfort PSD
Frankfort District Sewer System Phase 3	Frankfort PSD
Frankfort Water Line Ext. & System Improvement	Frankfort PSD
Carpendale Bridge Development Project	Mineral Co Dev. Authority
Burlington Sewage Plant/System	Mineral County Commission

TABLE 2.5.A TARGETED DEVELOPMENT AREAS	
<i>Development Projects</i>	<i>Applicant</i>
Mineral County Accessibility Project	Mineral County Commission
Mineral County Courthouse Annex	Mineral County Commission
Mineral County GIS	Mineral County Commission
Mineral Vision	Mineral County Development Auth.
Barnum Trail Extension	Mineral County Rec. Comm.
Mt. Top Sewage Extension	Mt. Top PSD
Mt. Top Line Extension & Upgrades	Mt. Top PSD
New Creek Sewer System III	New Creek PSD
New Creek PSD Pine Swamp Ext.	New Creek PSD
New Creek Water Tank Replacement	New Creek Water Association
Potomac Highlands Airport Industrial Park	Potomac Highlands Airport
Carpendale Secondary Water Source	Town of Carpendale
Carpendale Utility Extensions	Town of Carpendale
Carpendale Water Storage Tank	Town of Carpendale
Elk Garden Community Improvement	Town of Elk Garden
Ridgeley Rails to Trails	Town of Ridgeley
Ridgeley Sidewalks Phase IV	Town of Ridgeley
Ridgeley Town Hall – Fire Dept. Complex	Town of Ridgeley
Pendleton County	
Pendleton County Courthouse Annex	Pendleton County Commission
Seneca Fire Station Expansion	Pendleton County Commission
Franklin Rescue Bay Expansion	Pendleton County Rescue
Pendleton Water System Extensions – Route 33	Pendleton PSD
Ridge Road Water Extension	Pendleton PSD
Sandy Ridge Water Project	Pendleton PSD
Franklin Sewer Plant Upgrades	Town of Franklin
Upper Tract Fire Station	Upper Tract VFD
Regional	
Potomac Highlands Early Childhood Center	EACHS
EWVCTC Science Lab	EWVCTC
Highland House Halfway House	Highland House
Regional Broadband Extension Project	Region 8 PDC/Multi-County
Potomac State College Athletic Center	WVU-Potomac State
Potomac State College Stem Building	WVU-Potomac State

The Community Economic Development Strategy (CEDS) of 2017 identifies several items that could potentially affect the region. The Potomac Highlands expect to see growth in employment by 1.2 percent each year for the next five years with jobs in the construction sector which is expected to produce the fastest rate of job growth, but all major sectors are expected to produce jobs. Unemployment is expected to decline and per capita personal income is expected to increase at an annual average rate of 2.1 percent for the next five years. Population growth is expected to come from in-migration to the area.

- **Mineral Resources:** There are quarries in operations in all counties or Region 8 but little expansion of the mineral resource industry is expected. There are gas reserves available but the quantity of gas extracted has only a minor impact on development.



- **Wind:** The western Potomac Highlands is an ideal location for harvesting wind for power production. There have been some wind farms developed in recent years and there are a few others proposed around the region in the coming years. Generally, the wind turbines have been met with public support, except in Pendleton County which reduces the chances of development in this county.
- **Industrial Parks, Sites, and Buildings:** There are ten industrial parks in Region 8; only about 37% of the available acres for these sites are occupied, the rest are available for development. Many potential sites for development are met with restrictions that prohibit development such as the limited sewer service and location within the floodplains. There are few buildings that are available for use, many of them because they are too old, too small, or poorly located; this has resulted in the loss of industrial prospects. However, there are opportunities for downtown revitalization by telecommunications and computer-based firms in unused commercial building and second floors of occupied buildings.
- **Transportation:** Transportation can be difficult in the Region 8 Counties due to the geography of the land. However, there are planned improvements to rail lines and the operating capacity. When Corridor H is completed, the region will greatly improve the access to metropolitan areas.
- **Water:** There are areas of Region 8 where there is a lack of water service; there are many sewer and water projects that the Region 8 Planning and Development Council is developing to increase the access to clean water and to increase firefighting capabilities.

During the last committee meeting, the committee discussed development challenges and opportunities in their jurisdictions. The following are some observations from the members.

- **Town of Franklin:** in recent years there has been a flight of young populations; mostly they commute to Harrisonburg, VA, about an hour away, because there is more economic opportunity. The town and county (Pendleton) have looked to boost tourism, nature and climbing, since half of the county is forestland.
- **Hampshire County:** After 120 years in the county, Koppers Railroad Structures, a company that services railroads, moved out of the county. Attracting new business has been difficult because there is no broadband in the area. The county has been

- searching for more industries to come to the area because of the advantage they have of being on the CSX rail line.
- **Hardy County:** The County has a new regional sewer system and a new water treatment plant. One of the largest industries in the county is Pilgrim's Pride, a chicken processing plant, where nearly 2,000 workers have found employment, some from out of state. Because of the plant, the county has seen an influx of foreign populations. There are many properties available in Baker for development, but no vacant buildings at the time. Hardy County is reviewing and updating zoning ordinances within the first half of 2018.
  - **Grant County:** Development has been steady and new construction has slowed down since 2008. There are plans to develop land in the Mount Storm area where there are many lots available and potential for businesses.
  - **Mineral County:** The slight drop in population can be attributed to the loss of economic opportunities in the county. The county is working on initiatives for industrial development and is targeting specific industries. The county has also acquired property and is searching for viable uses for it.

## 3.0 MITIGATION STRATEGY

### 2018 UPDATE

The goals, objectives, and projects in this section have all been updated to reflect the changes in priorities since the last update. This section recognizes the shift in activities regarding mitigation in the past several years; many of the mitigation projects from the previous version of this plan have become common activities that are now part of normal job descriptions.

### OVERVIEW

The mitigation strategy contains information on goals and objectives that the steering committee decided upon and projects or strategies that the jurisdictions updated and/or created. This section explains in further detail the process by which goals were established and how existing and new projects were prioritized.

## 3.1 HAZARD MITIGATION GOALS

§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.

### 3.1.1 Setting and Prioritizing the Goals and Objectives

During the second steering committee meeting, members reviewed the previous mitigation plan goals and objectives. In the 2012 plan, each jurisdiction had their own goals and objectives and, although similar, they were not cohesive regionally.

The committee decided to revise the goals after some discussion and broke up into two groups to discuss in greater depth the direction they wanted to take. Both groups saw a pattern with the projects that they had in the plan and when each group presented their observations to all the members, they realized they had taken the same approach. Both groups, and therefore the whole steering committee, decided that there should be two overall goals that all the counties, cities, and towns should work towards. Within those goals, they established objectives by consensus, confident that all their mitigation efforts would channel through these two goals.

#### **GOAL 1: Minimize loss of life and property due to natural disasters**

*Objective 1:* Implement and educate the public on notification and warning measures for natural hazard events.

*Objective 2:* Protect critical infrastructure and assets.

*Objective 3:* Develop and sustain partnerships among responders and local officials revolving around education and training.

*Objective 4:* Maintain and enforce floodplain management activities.

#### **GOAL 2: Minimize loss of life and property due to human-caused disasters**

*Objective 1:* Educate the public on measures they can/should take regarding human-caused incidents.

*Objective 2:* Protect critical infrastructure and assets focusing on hardening structures and enhancing security measures.

*Objective 3:* Develop and sustain partnerships among responders and local officials revolving around education and training.

## 3.2 HAZARD MITIGATION PROJECTS

§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.

§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 includes actionable mitigation projects from the counties and jurisdictions within Region 8. The committee and jurisdictions updated the list of projects from the previous plan by noting if the projects were still active, deferred, completed, or no longer relevant. A list of deleted and completed projects can be found in [Appendix 3: Inactive Projects](#).

### 3.2.1 Project List Updates

Many jurisdictions decided to consolidate several existing projects that were very similar in nature after reviewing all their projects; for example, if one project called for the education of the public on tornado preparedness and another within the same jurisdiction called for public education on thunderstorm preparedness, these two were combined to have a more broad approach such as educating the public on severe weather events.

The committee observed that many of the projects listed previously in the mitigation plan had become a part of regular, ongoing day-to-day activities within certain positions in the jurisdiction. Some of these ongoing mitigation activities include tasks such as enforcing building codes and the floodplain ordinance, monitoring potentially hazardous situations, maintaining equipment, etc.

For this reason, several of the previous plan's "projects" have been classified as ongoing mitigation activities because they still are relevant and complimentary to mitigation efforts, but not necessarily actionable projects in this update of the plan.



These mitigation activities are included in the project list for each jurisdiction, where appropriate, but are not prioritized within the active hazard mitigation action plan.

### 3.2.2 Project Prioritization

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. Project prioritization criteria were established utilizing the project prioritization matrix. Each jurisdictional project was rated on six criteria using a one to five scale where five is best. The criteria used are:

- **Ease of Implementation:** Do local policies and capabilities currently allow for the implementation of the project? Are programs available to assist in funding the implementation of the project?
- **Cost Effectiveness:** Is sufficient funding available to implement the project at a cost manageable by the local government? If not, is funding available? Will the costs of implementing the project be significantly less than the cumulative future costs potentially incurred by an un-corrected situation?
- **Social Impacts:** Will the public perceive the project as positively lessening hazard-related losses? Will implementing the project adversely affect any segment of the population?
- **Political Impacts:** Will implementing the project create negative political issues?
- **Economic Impacts:** Is the cost/benefit ratio of implementing the project acceptable? Will implementing the project adversely affect the local economy?
- **Overall Positive Impact;** Do local leaders generally agree that implementing the project will be beneficial to the community?

If a jurisdiction, for example, has five mitigation projects, the project number is identified in the top row. Then each project will be given between 1 and 5 (5 being the best) points for each criterion. The points are tallied and the project with the most points will be the first priority. If two or more projects score the same amount of points,

PROJECT → CRITERIA ↓	1	2	3	4	5
<i>Ease of Implementation</i>	5	2	3	4	2
<i>Cost Effectiveness</i>	1	3	3	2	4
<i>Social Impact</i>	3	2	2	5	2
<i>Political Impact</i>	5	4	3	3	1
<i>Economic Impact</i>	1	3	5	4	2
<i>Overall Positive Impact</i>	3	5	2	3	3
<b>TOTAL</b>	18	19	18	21	14
<b>PRIORITY</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>5</b>

they are considered a tie and given the same priority. The table to the right is filled out as an example. In this example, project number 4 was ranked the highest so therefore it is the number one priority for the jurisdiction, followed by project 2, then a tie between projects 1 and 3 and finally, project number 5.

### 3.3 ACTION PLAN

The following table includes the activities that were previously mitigation projects but have now become part of routine activities.

<b>TABLE 3.3.A ONGOING MITIGATION ACTIVITIES</b>				
<i>Jurisdiction</i>	<i>Hazard</i>	<i>Strategy</i>	<i>Mitigation Type</i>	<i>Narrative</i>
<b>Town of Capon Bridge - Hampshire County</b>				
Capon Bridge, Town of	Wildfires	Continue to provide fire protection for Capon Bridge and upgrade capabilities as need and funding are available.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project B2.1.1
<b>Town of Elk Garden - Mineral County</b>				
Elk Garden, Town of	All hazards	Coordinate with utility companies to ensure restoration of utility services.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project D1.1.2
<b>Grant County</b>				
Grant County	Dam Failure	Discourage development in areas around dams or encourage development of sound structures.	Prevention	Ongoing. New construction is required to follow floodplain ordinance and build to a 100 year event. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project F1.1.1
Grant County	Epidemic	Support local pandemic influenza planning.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project F2.1.3
Grant County	All hazards	Support local animals in disaster planning.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project F2.1.4
Grant County	Flooding	Enforce building codes referencing Flood Insurance Rate Maps (FIRMs).	Prevention	Ongoing. Before building, individuals must apply for a septic permit and do floodplain paperwork associated with the structure before a building permit is issued. Construction must be in accordance to floodplain ordinance. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project F5.1.3
<b>Hampshire County</b>				
Hampshire County	Dam Failure	Ensure that plans are in place for the inspection and rehabilitation of dams. Coordinate with the Maryland Department of the Environment, Dam Safety Program as these dams are not located in Hampshire County.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G1.1.2

**TABLE 3.3.A ONGOING MITIGATION ACTIVITIES**

<i>Jurisdiction</i>	<i>Hazard</i>	<i>Strategy</i>	<i>Mitigation Type</i>	<i>Narrative</i>
Hampshire County	Flooding	Coordinate with Maryland officials to continue monitoring water levels on the North Branch of the Potomac River.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G1.1.3
Hampshire County	Flooding	Continue to enforce ordinances that new structures do not interfere with flood mitigation measures.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G4.1.1
Hampshire County	Hazardous Materials	Coordinate with gas companies and retailers operating in Hampshire County, to ensure that household propane tanks are secured.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G4.1.3
Hampshire County	Hazardous Materials	Coordinate with emergency planning partners throughout Hampshire and surrounding counties to inventory resources that might be available for hazmat response.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G5.1.4
Hampshire County	Land Subsidence	Continue coordination with the West Virginia Division of Highways (WVDOH) to expand shoulder area of roadways (to reduce the number of road closures due to landslides).	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction.
Hampshire County	Land Subsidence	Coordinate with oil and natural gas exploration companies to ensure that measures are in place to guard against a loss of groundwater and sinking/settling in heavily drilled areas.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G6.1.3
Hampshire County	Terrorism Epidemic	Coordinate with the Hampshire County Health Department to continue planning efforts regarding biological concerns.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G7.1.2
Hampshire County	Winter Weather	Coordinate with the WVDOH to ensure that roadways are cleared during significant snow or ice events.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G10.2.1
Hampshire County	All hazards	Coordinate with utility companies to ensure that they have planned for business continuity during prolonged emergencies.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G10.2.2
Hampshire County	Wildfires	Continue to provide fire protection for Romney and Capon Bridge and upgrade capabilities as need and funding are available.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G11.1.1

**TABLE 3.3.A ONGOING MITIGATION ACTIVITIES**

<i>Jurisdiction</i>	<i>Hazard</i>	<i>Strategy</i>	<i>Mitigation Type</i>	<i>Narrative</i>
Hampshire County	Epidemic	Continue partnering with the Hampshire County Health Department regarding pandemic planning.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G11.2.1
Hampshire County	All hazards	Continue planning for the provision of food, water, and housing to county residents displaced by large-scale emergencies.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G11.2.2
Hampshire County	All hazards	Continue to partner with state and neighboring jurisdictions to plan for an "urban-to-rural" evacuation from the National Capital Region (NCR) into the eastern panhandle of West Virginia.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project G11.2.3
<b>Hardy County</b>				
Hardy County	All hazards	Support business continuity planning efforts throughout Hardy County.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project H2.1.4
Hardy County	Flooding	Hardy County must ensure that new construction complies with requirements of the NFIP.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project H5.2.1
Hardy County	All hazards	Ensure that poultry plants are following plant safety programs.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project H6.1.1
Hardy County	Hazardous Materials	Ensure that the Local Emergency Planning Committee (LEPC) continues involvement in the regional meetings discussing hazardous material incidents.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project H6.1.5
Hardy County	Hazardous Materials	Ensure that storage tanks are located out of flood zone and/or installed with safety measures.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project H6.3.1
Hardy County	Land Subsidence	Coordinate with the WVDOH.	Public Education and Awareness	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project H7.1.1
Hardy County	Wildfires	Ensure that local fire departments coordinate with the local and state emergency managers.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project H8.1.4
Hardy County	Summer Weather	Monitor wind patterns as they develop.	Public Education and Awareness	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project H10.1.3

**TABLE 3.3.A ONGOING MITIGATION ACTIVITIES**

<i>Jurisdiction</i>	<i>Hazard</i>	<i>Strategy</i>	<i>Mitigation Type</i>	<i>Narrative</i>
Hardy County	Drought	Coordinate with the West Virginia University (WVU) Extension Service.	Public Education and Awareness	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project H11.3.1
<b>Mineral County</b>				
Mineral County	Dam Failure	Ensure funding for review and maintenance of dams	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J1.1.2
Mineral County	Dam Failure	Secure the dams. Protect from vandalism.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J1.1.3
Mineral County	Dam Failure	Disclose the risk to those who build in area of dam.	Public Education and Awareness	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J1.1.5
Mineral County	Epidemic	Review the Mineral County Health Department's plans.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J2.1.1
Mineral County	Epidemic	Monitor the risk of chronic wasting disease.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J2.1.3
Mineral County	Epidemic	Enforce laws concerning rabies.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J2.1.4
Mineral County	Epidemic	Monitor the risk of epidemic/pandemic situations.	Public Education and Awareness	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J2.1.5
Mineral County	Epidemic	Work with the county fair association regarding prevention of the spread of animal diseases.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J2.1.6
Mineral County	All hazards	County to assist with pumping water for livestock.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J3.1.1
Mineral County	All hazards	Provide shelters, food, and medicine for those in need.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J5.2.1
Mineral County	Hazardous Materials	Coordinate with representatives from covered facilities to collectively determine mitigation strategies.	Property Protection	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J6.3.1

<b>TABLE 3.3.A ONGOING MITIGATION ACTIVITIES</b>				
<i>Jurisdiction</i>	<i>Hazard</i>	<i>Strategy</i>	<i>Mitigation Type</i>	<i>Narrative</i>
Mineral County	Winter Weather	Consider coordinating with West Virginia Division of Highways regarding snow removal.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J11.1.7
Mineral County	All hazards	Coordinate with utility companies to ensure restoration of utility services.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project J12.1.2
<b>Town of Moorefield ~ Mineral County</b>				
Moorefield, Town of	Flooding	The Town of Moorefield and Hardy County Commission should coordinate with the WVDOH to control additional flooding issues that may result from the construction of Corridor H.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project K1.1.1
Moorefield, Town of	Flooding	The Town of Moorefield must enforce requirements concerning construction of new dwellings in reference to its flood protection plan and the National Flood Insurance Program (NFIP).	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project K1.1.2
<b>Pendleton County</b>				
Pendleton County	All hazards	Local LEPC needs to network information for county and Town of Franklin.	Public Education and Awareness	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project L5.2.2
Pendleton County	Flooding	Enforce floodplain laws and regulations as required by the NFIP.	Prevention	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project L5.3.3
<b>City of Piedmont ~ Mineral County</b>				
Piedmont, City of	Summer Weather	Educate Piedmont residents of concerns regarding the risk of storm cells causing flooding on the hillside.	Public Education and Awareness	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project N2.1.1
<b>Region 8 Planning and Development Council</b>				
Region 8 PDC	Flooding	Maintain compliance with the NFIP at the jurisdictional level by attending training, monitoring development, and ensuring the local floodplain regulations are as current and applicable as possible.	Public Education and Awareness	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project 1.1.1
Region 8 PDC	Dam Failure	Coordinate, as appropriate, with partners throughout the region to identify the location of privately-owned dams.	Public Education and Awareness	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project 4.1.1
<b>Town of Ridgeley ~ Mineral County</b>				

<b>TABLE 3.3.A ONGOING MITIGATION ACTIVITIES</b>				
<i>Jurisdiction</i>	<i>Hazard</i>	<i>Strategy</i>	<i>Mitigation Type</i>	<i>Narrative</i>
Ridgeley, Town of	All hazards	Educate the public on preparedness and response.	Public Education and Awareness	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project O1.1.1
Ridgeley, Town of	All hazards	Coordinate with utility companies to ensure restoration of utility services.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project O1.1.2
<b>City of Romney ~ Hampshire County</b>				
Romney, City of	Wildfires	Continue to provide fire protection for Romney and upgrade capabilities as need and funding are available.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project P1.1.1
<b>Town of Wardensville ~ Hardy County</b>				
Wardensville, Town of	Flooding	Assure efficient storm water management practices, such as clearing ditches and creating larger water basins for the town.	Structural Projects	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project Q2.2.3
Wardensville, Town of	Winter Weather	Ensure needed snow removal equipment, emergency generators, shelters, and personnel are mobilized according to the town's snow plan.	Emergency Services	Ongoing. This project has become a part of day-to-day routine mitigation practices of the jurisdiction. Previous project Q3.1.3

The following table contains the active mitigation projects for Region 8 counties, cities, and towns. Data within the table includes the corresponding goals and objective, the hazard that the project addresses, its priority relating to its own jurisdiction, the type of mitigation that the project entails, a brief description of the status of the project (if it is ongoing from the 2012 plan), a timeframe for completion, when appropriate, the lead agency in charge and support agencies if appropriate, a cost estimate for the project, and potential funding sources.



TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
<b>Town of Bayard - Grant County</b>											
Bayard 1	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	1	Prevention	New	Ongoing as needed	Bayard Floodplain Manager	Grant County OEM	Up to \$124,900 per home purchased	HMGP
Bayard 2	Goal 1 Objective 2 & 4	Flooding	Design and build a proper storm water drainage system for the Town of Bayard.	2	Structural Projects	Ongoing. There has been no activity on this project since 2012. Previous project A1.1.2	5 years	Bayard Town Council	Region 8 PDC	Up to \$1,000,000, contingent on the type of project that is undertaken	SCGB IJDC Local Funding
<b>Town of Capon Bridge - Hampshire County</b>											
Capon Bridge 1	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Conduct periodic public education campaigns using a variety of approaches on topics such as all-hazard risk awareness, procedures after receiving notifications of hazards, prevention of hazards and personal preparedness.	1	Public Education and Awareness	New	Ongoing as needed	Capon Bridge Town Council	Hampshire County OEM	Up to \$2,500 per outreach campaign	PDM EMPG Local Funding
Capon Bridge 2	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	2	Prevention	Ongoing. Previous project B1.1.1	Ongoing as needed	Capon Bridge Floodplain Coordinator	Hampshire County OEM	Up to \$121,900 per home purchased	HMGP
<b>Town of Carpendale - Mineral County</b>											
Carpendale 1	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	1	Prevention	New	Ongoing as needed	Carpendale Floodplain Manager	Mineral County OEM	Up to \$128,300 per home purchased	HMGP
Carpendale 2	Goal 1 Objective 2  Goal 2 Objective 2	All hazards	Address issue of Carpendale having only one road leading in and out of municipality.	2	Prevention	Ongoing. Previous project C1.1.1	5 years	Carpendale Town Council	WVDOH	Unknown; the project is in the planning stages	N/A
<b>Town of Elk Garden - Mineral County</b>											
Elk Garden 1	Goal 1 Objective	All hazards	Educate the public on preparedness and response.	1	Public Education and Awareness	Ongoing. Previous project D1.1.1	5 years	Elk Garden Municipal Council	Mineral County OEM	Up to \$2,500 per outreach campaign	PDM EMPG Local Funding
Elk Garden 2	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	2	Prevention	New	Ongoing as needed	Elk Garden Floodplain Manager	Mineral County OEM	Up to \$128,300 per home purchased	HMGP
<b>Town of Franklin - Pendleton County</b>											
Franklin 1	Goal 1 Objective 2 & 4	Flooding	Identify options for improvement or upgrade of storm drainage system.	1	Structural Projects	New	3 years	Franklin Floodplain Manager	Town of Franklin Council Pendleton County	Identification of possible solutions should require little to no extra cost.	N/A

TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
Franklin 2	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	2	Prevention	New	Ongoing as needed	Franklin Floodplain Manager	Pendleton County OEM	Up to \$100,500 per home purchased	HMGP
Franklin 3	Goal 1 Objective 2  Goal 2 Objective 2	All hazards	Install a generator at the water pump station so that water can reach sections of town that lose water when there are power outages.	3	Prevention	New	5 years	Franklin County Commission	Pendleton County	Up to \$20,000 for the cost of a generator.	HMGP
<b>Grant County</b>											
Grant 1	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Conduct periodic public education campaigns using a variety of approaches on topics such as all-hazard risk awareness, procedures after receiving notifications of hazards, prevention of hazards and personal preparedness.	1	Public Education and Awareness	Ongoing. Previous projects F3.1.3, F4.1.1, F9.1.1, and F11.1.1 combined.	Ongoing as needed	Grant County OES	Grant County Commission	Up to \$2,500 per outreach campaign	PDM EMPG Local Funding
Grant 2	Goal 1 Objective 3  Goal 2 Objective 3	All hazards	Identify needs for training for all hazards and provide training to emergency personnel	2	Emergency Services	Ongoing. Previous projects F6.1.1, F8.1.5, and F10.1.1 combined	Ongoing as needed	Grant County OES	Local Emergency Services Departments	Many training opportunities are offered at no cost; other could cost up to \$1,000	EMPG HMEP SERC Local Funding
Grant 3	Goal 1 Objective 3  Goal 2 Objective 3	All hazards	Recruit and train additional volunteers for emergency services activities.	3	Emergency Services	Ongoing. Project description clarified. Previous project F6.1.2	5 years	Local Emergency Services Departments	Grant County OES Grant County LEPC	Recruitment of volunteers should require little to no additional funding	N/A
Grant 4	Goal 1 Objective 3  Goal 2 Objective 3	All hazards	Ensure personnel are trained to handle evacuation process.	4	Prevention	Ongoing. Previous project F1.2.2	5 years	Grant County OES	Local Emergency Services Departments	Little to no additional funding should be required as this is a part of existing programs	N/A
Grant 5	Goal 1 Objective 2	Wildfires	Identify additional local water resources for fighting fires.	4	Emergency Services	Ongoing. Project description clarified. Previous project F3.1.2	5 years	Local Fire Departments	Grant County OES	Resource identification should require little to no additional funding	N/A
Grant 6	Goal 1 Objective 2  Goal 2 Objective 2	All hazards	Synchronize the <i>West Virginia Emergency Operations Plan (EOP)</i> and the local EOP.	6	Emergency Services	Ongoing. Previous project F8.1.1	5 years	Grant County OES	N/A	Up to \$9,000 if an entire plan update is done with the assistance of a consultant	HMEP EMPG Local Funding
Grant 7	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Develop and distribute detailed evacuation plans with maps.	7	Prevention	Ongoing. Previous project F1.2.1	5 years	Grant County OES	WVDEP Dam Safety	Little to no additional funding should be required as this is a part of existing programs	N/A



TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
Grant 8	Goal 1 Objective 2 & 4	Flooding	Construct a floodwall to protect homes in the North Fork Retreat development.	8	Structural Projects	Ongoing. As of 2017 there has been no construction of a flood wall. Previous project F5.1.4	5 years	Grant County Commission	Region 8 PDC	Up to \$1,000,000 contingent on the size of the project	SCGB IJDC Local Funding
Grant 9	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	9	Prevention	Ongoing. RL property owners should have conference with FEMA and floodplain manager about options to meet NFIP standards. Previous project F5.1.1	Ongoing as needed	Grant County Floodplain Coordinator	Grant County Commission	Up to \$124,900 per home purchased	HMGP
Grant 10	Goal 1 Objective 2	All hazards	Ensure backup local water sources for both livestock and potable water during emergencies.	10	Emergency Services	Ongoing. Previous project F3.1.1	5 years	Grant County OES	WVU Extension Service Grant County LEPC	Resource identification should require little to no additional funding	N/A
<b>Hampshire County</b>											
Hampshire 1	Goal 1 Objective 3  Goal 2 Objective 3	Hazardous Materials	Coordinate the development of mutual aid agreements with such agencies as the Regional Response Team (RRT) and neighboring county hazmat response teams.	1	Emergency Services	Ongoing. Previous project G5.1.1	5 years	Local Fire Departments	Hampshire County OEM	Creation of mutual aid agreements should not require significant additional funding.	N/A
Hampshire 2	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Conduct periodic public education campaigns using a variety of approaches on topics such as all-hazard risk awareness, procedures after receiving notifications of hazards, prevention of hazards and personal preparedness.	1	Public Education and Awareness	Ongoing. Previous projects G1.1.1, G3.1.1, G4.1.2, G6.1.1, G8.1.1, G9.2.1, and G10.1.1 combined	Ongoing as needed	Hampshire County OEM	Hampshire County Commission	Up to \$2,500 per outreach campaign	PDM EMPG Local Funding
Hampshire 3	Goal 1 Objective 2	All hazards	As planning for animals in disaster continues, ensure that provisions to maintain water for animals are included.	3	Emergency Services	Ongoing. Previous project G2.1.1	3 years	Hampshire County OEM	WV DHSEM WV Department of Agriculture WVU Extension Service	Up to \$5,000	EMPG HMEP USDHS Local Funding
Hampshire 4	Goal 1 Objective 2 & 4	Flooding	Begin compiling the information necessary to apply for participation in the Community Rating System (CRS).	3	Public Education and Awareness	Ongoing. Previous project F4.2.2	5 years	Hampshire County Floodplain Coordinator	Hampshire County OEM	Compiling materials for the CRS means collecting items that are already available locally or that can be developed locally.	N/A
Hampshire 5	Goal 1 Objective 2  Goal 2 Objective 2	Wildfires	Ensure road access to unpopulated and/or developing (wooded) areas to provide for firefighter access.	3	Emergency Services	Ongoing. Previous project G9.1.1	5 years	Local Fire Departments	Hampshire County Planning Private Developers WVDOH	Up to \$1,000,000 contingent on the number of projects and the types of roads constructed	WVDOH USDOT Local Funding
Hampshire 6	Goal 1 Objective 1 Objective 2	Hazardous Materials	Explore options for ordinances to ensure that residential propane tanks are secured.	6	Prevention	Ongoing. Previous project G5.1.3	5 years	Hampshire County Planning	Hampshire County Commission	Exploration of options should require little to no additional funding.	N/A

TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
Hampshire 7	Goal 1 Objective 3 Goal 2 Objective 3	Hazardous Materials	Continue on-going hazardous material planning efforts at the local level, to include integration of local and state efforts.	7	Emergency Services	Ongoing. Previous project G5.1.2	5 years	Hampshire County LEPC	Hampshire County OEM	Up to \$5,000	HMEP
Hampshire 8	Goal 1 Objective 2 & 4	Flooding	Identify backup evacuation routes for residents that become stranded during flooding events and ensure they get to shelters safely before the event.	8	Prevention	New	3 years	Hampshire County OEM	WVDOH Hampshire County Commission	Partnership and planning require little to no additional funding.	N/A
Hampshire 9	Goal 1 Objective 2	All hazards	Coordinate the identification of backup water sources (e.g. additional aquifers, etc.) to ensure the continuity of existing systems.	9	Structural Projects	Ongoing. Previous project G2.1.2	5 years	Central Hampshire PSD	City of Romney	Coordination with partner entities should require little to no additional funding	N/A
Hampshire 10	Goal 1 Objective 2 & 3 Goal 2 Objective 2 & 3	Terrorism	Continue to update Annex M of the <i>Hampshire County Emergency Operations Plan</i> in an effort to prepare for potential domestic and international terrorist incidents.	10	Emergency Services	Ongoing. Previous project G7.1.1	5 years	Hampshire County OEM	N/A	Up to \$5,000	EMPG HMEP USDHS Local Funding
Hampshire 11	Goal 1 Objective 3 Goal 2 Objective 3	Wildfires	Undertake training and other educational efforts to inform responders about extinguishing fires with ethanol additives. Training should be relative to new technologies.	11	Emergency Services	Ongoing. Previous project G5.1.5	5 years	Local Fire Departments	N/A	Up to \$5,000 per opportunity	EMPG USDHS Local Funding
Hampshire 12	Goal 1 Objective 2 & 3 Goal 2 Objective 2 & 3	All hazards	Upgrade communications capabilities throughout the county.	12	Emergency Services	Ongoing. Project description clarified. Previous project G11.1.2	5 years	Hampshire County OEM	Hampshire County 911 Local Response Agencies	Up to \$1,000,000 contingent on the size of the project and the equipment purchased	EMPG USDHS Local Funding
Hampshire 13	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	13	Prevention	Ongoing. Previous project G4.2.1	Ongoing as needed	Hampshire County Planning	Hampshire County Planning Hampshire County OEM	Up to \$121,900 per home purchased	HMGP
<b>Hardy County</b>											
Hardy 1	Goal 1 Objective 2 & 3 Goal 2 Objective 2 & 3	All hazards	Develop a plan or procedure to ensure all contacts for emergency personnel are made during emergency situations and conduct exercises of notification.	1	Emergency Services	Ongoing. Project description clarified. Previous project H5.1.3	5 years	Hardy County OEM	N/A	Updating internal plans requires little to no additional funding	N/A
Hardy 2	Goal 1 Objective 2 Goal 2 Objective 2	All hazards	Identify shelters, particularly those with basements, for use during tornados. Shelters should be identified for both municipalities and the county.	1	Emergency Services	Ongoing. Previous project H9.3.1	5 years	American Red Cross	Hardy County OEM	As a planning project, this should require little to no additional funding.	N/A



TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
Hardy 3	Goal 1 Objective 2 & 3  Goal 2 Objective 2 & 3	All hazards	Review evacuation process with Hardy County Office of Emergency Management and emergency personnel.	3	Emergency Services	Ongoing. Previous project H6.1.4	5 years	Hardy County OEM	Local Emergency Services Departments	Review process should require little to no additional funding.	N/A
Hardy 4	Goal 1 Objective 2 & 3  Goal 2 Objective 2 & 3	All hazards	Identify and upgrade emergency services equipment and provide appropriate training to personnel regarding hazards.	4	Emergency Services	Ongoing. Project description clarified. Previous project H5.1.5	5 years	Local Emergency Services Departments	Hardy County OEM	Unknown; contingent on type of equipment purchased	N/A
Hardy 5	Goal 1 Objective 1 & 3	All hazards	Facilitate counseling and support to lessen impact on the community, particularly for school-aged children.	4	Emergency Services	Ongoing. Previous project H8.2.1	5 years	Hardy County OEM	Hardy County Health Department	As a planning project, this should require little to no additional funding.	N/A
Hardy 6	Goal 1 Objective 3  Goal 2 Objective 3	All hazards	Identify areas of improvement where personnel training can improve response to hazards and hold training opportunities.	7	Emergency Services	Ongoing. Project description clarified. Previous project H6.2.2	5 years	Local Emergency Services Departments	Hardy County OEM	Unknown; contingent on the training topic and location	N/A
Hardy 7	Goal 1 Objective 2  Goal 2 Objective 2	All hazards	Compile a plan on how to handle local housing, water, and food supply needs.	7	Emergency Services	Ongoing. Project description clarified. Previous project H8.2.2	5 years	Hardy County OEM	American Red Cross Faith-Based Organizations	As a planning project, this should require little to no additional funding.	N/A
Hardy 8	Goal 1 Objective 2	Wildfires	Identify water sources needed for fighting fires.	7	Emergency Services	Ongoing. Previous project H10.2.1	5 years	Local Fire Departments	Hardy County OEM	Location of resources should require little to no additional funding	N/A
Hardy 9	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Conduct periodic public education campaigns using a variety of approaches on topics such as all-hazard risk awareness, procedures after receiving notifications of hazards, prevention of hazards and personal preparedness.	7	Public Education and Awareness	Ongoing. Previous projects H4.1.1, H4.1.2, H9.1.1, H9.1.2, H10.1.1, H11.1.1, and H11.1.5 combined.	Ongoing as needed	Hardy County OEM	Hardy County Commission	Up to \$2,500 per outreach campaign	PDM EMPG Local Funding
Hardy 10	Goal 1 Objective 3  Goal 2 Objective 3	Hazardous Materials	Purchase additional equipment including hazardous material suits and decontamination equipment for emergency personnel.	7	Emergency Services	Ongoing. There have been funding problems that prohibit the purchase of equipment. Previous project H6.2.1	5 years	Local Fire Departments	Hardy County LEPC	Up to \$25,000 contingent on the type of equipment purchased	AFGP EMPG Local funding
Hardy 11	Goal 1 Objective 2 & 4	Flooding	Incorporate the update river gauges monitoring information onto all county websites for view by the public.	11	Public Education and Awareness	Ongoing. Project description clarified. Previous project H5.1.6	5 years	National Weather Service	Hardy County OEM	Information sharing should require little to no additional funding	N/A
Hardy 12	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	12	Prevention	Ongoing. Previous project H5.2.2	Ongoing as needed	Hardy County Floodplain Coordinator	Hardy County OEM Hardy County Commission	Up to \$118,800 per home purchased	HMGP



TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
Hardy 13	Goal 1 Objective 2	Dam Failure	Conduct a survey of structures already located around dam structures that could be affected by a failure and limit new development in hazardous areas.	12	Prevention	Ongoing. Previous projects H1.1.4 and H1.2.1 combined	Ongoing as needed	Hardy County OEM	Dam owners Potomac Valley Conservation District Natural Resources Conservation Service Hardy County Commission	Identification of resources and enforcement of regulations should require little to no additional funding	N/A
Hardy 14	Goal 1 Objective 2	All hazards	Evaluate the current infrastructure abilities to meet the minimum water demands of public water customers.	14	Prevention	Ongoing. Previous project H3.2.2	5 years	Hardy County RDA	Town of Moorefield Town of Wardensville	Evaluation should require little to no additional funding	N/A
Hardy 15	Goal 1 Objective 2 & 4	Flooding	Evaluate flood risk potential of local rivers, streams, and basis related to ice dams and quick thawing.	14	Public Education and Awareness	Ongoing. Previous project H11.1.4	5 years	Hardy County OEM	USACE Potomac Valley Conservation District NWS	Evaluation should require little to no additional funding	N/A
Hardy 16	Goal 1 Objective 2	Drought	Identify additional local water resources for use for livestock and poultry farm use.	14	Emergency Services	Ongoing. Previous projects H3.1.2 and H3.1.4 combined	3 years	Hardy County Commission	WVU Extension Service Poultry Industry Town of Moorefield	Location of resources should require little to no additional funding	N/A
Hardy 17	Goal 1 Objective 2  Goal 2 Objective 2	Drought	Locate facilities for irrigation.	17	Emergency Services	Ongoing. Previous project H3.1.1	5 years	Hardy County Commission	WVU Extension Service	Location of facilities should require little to no additional funding	N/A
Hardy 18	Goal 1 Objective 2 & 3  Goal 2 Objective 2 & 3	All hazards	Establish a communication system to monitor increasing hazards risk.	18	Emergency Services	Ongoing. Previous project H1.1.2	5 years	Hardy County OEM	Local Emergency Services Departments Regional Interoperable Committee	\$3,000,000+	SHSP EMPG Local Funding
Hardy 19	Goal 1 Objective 2  Goal 2 Objective 2	Drought	Conduct a countywide water resource study.	18	Emergency Services	Ongoing. Project description clarified. Previous project H3.2.1	5 years	Hardy County Planning Commission	Region 8 PDC	Up to \$100,000 contingent on the use of a consultant.	Unknown
Hardy 20	Goal 1 Objective 2  Goal 2 Objective 2	All hazards	Protect critical infrastructure and facilities.	20	Emergency Services	Ongoing. Previous project H8.1.5	5 years	Hardy County Commission	Town of Moorefield Town of Wardensville	As a planning project, this should require little funding; target hardening efforts, though, may require funding.	
<b>City of Keyser - Mineral County</b>											
Keyser 1	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Conduct periodic public education campaigns using a variety of approaches on topics such as all-hazard risk awareness, procedures after receiving notifications of hazards, prevention of hazards and personal preparedness.	1	Public Education and Awareness	New	Ongoing as needed	Keyser City Council	Mineral County OEM	Up to \$2,500 per outreach campaign	PDM EMPG Local Funding



TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
Keyser 2	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	2	Prevention	New	Ongoing as needed	Keyser Floodplain Manager	Mineral County OEM	Up to \$128,300 per home purchased	HMGP
<b>Mineral County</b>											
Mineral 1	Goal 1 Objective 2 & 4	Wildfires	Develop procedures for the county to inform municipalities when individuals obtain burning permits within their corporate limits.	1	Prevention	Ongoing. Project description clarified. Previous project J10.2.1	5 years	Unknown	N/A	Coordination with partner entities should require little to no additional funding	N/A
Mineral 2	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Conduct periodic public education campaigns using a variety of approaches on topics such as all-hazard risk awareness, procedures after receiving notifications of hazards, prevention of hazards and personal preparedness.	1	Public Education and Awareness	Ongoing. Previous projects J9.1.1, J11.1.1, J11.1.4, J11.1.6, and J12.1.1 combined	Ongoing as needed	Mineral County OEM	Mineral County Commission	Up to \$2,500 per outreach campaign	PDM EMPG Local Funding
Mineral 3	Goal 1 Objective 2 & 4	Flooding	Make lists of flood-prone properties available to the residents of Mineral County.	3	Public Education and Awareness	Ongoing. Previous project J5.3.2	5 years	Mineral County Planning Commission	Mineral County OEM	Since the information is available, making it available to the public should require little to no additional funding	N/A
Mineral 4	Goal 1 Objective 2	Drought	Identify alternate water supplies and storage.	4	Natural Resource Protection	Ongoing. Previous project J3.1.2	3 years	Mineral County Commission	WVU Extension Service	Unknown	N/A
Mineral 5	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	5	Prevention	Ongoing. Project description clarified. Previous project J5.1.4	Ongoing as needed	Mineral County Floodplain Manager	Mineral County Commission	Up to \$128,300 per home purchased	HMGP
Mineral 6	Goal 1 Objective 2 & 3  Goal 2 Objective 2 & 3	All hazards	Ensure that existing communications systems are well maintained and in proper working order. Identify and introduce new mass notification warning system that can complement existing resources.	5	Emergency Services	Ongoing. Previous projects J5.1.1, J6.4.3, and J9.1.3 combined	3 years	Mineral County OEM	Mineral County 911	Up to \$50,000 for installation plus annual operating costs	SHSP Local Funding
Mineral 7	Goal 1 Objective 3  Goal 2 Objective 3	Hazardous Materials	Educate emergency personnel responding to hazardous incidents.	7	Emergency Services	Ongoing. Previous project J6.4.2	5 years	First Response Agencies	Mineral County OEM	Up to \$5,000 depending on the type of training, education, or exercise that is sponsored.	SERC HMEP Local Funding
Mineral 8	Goal 1 Objective 2 & 4	Flooding	Pre-mitigate properties located along Water Street/Harley O Stagers' Drive.	8	Prevention	Ongoing. Previous project J5.1.5	5 years	Mineral County Planning Commission	Mineral County OEM	Up to 128,300 per property purchased	HMGP
Mineral 9	Goal 1 Objective 2 & 4	All hazards	Establish new construction ordinance.	9	Prevention	Ongoing. Previous project J5.1.2	5 years	Mineral County Commission	Mineral County Building Permit Officer	Establishment of an ordinance should require little to no additional funding; funding would be needed at the enforcement stage	N/A



TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
<b>Town of Moorefield - Hardy County</b>											
Moorefield 1	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	1	Prevention	New	Ongoing as needed	Moorefield Floodplain Coordinator	Hardy County OEM	Up to \$118,800 per home purchased	HMGP
Moorefield 2	Goal 1 Objective 3  Goal 2 Objective 3	Winter Weather	Partner with the Town of Wardensville to develop a plan that address winter storms and snow removal.	2	Emergency Services	Ongoing. Project description clarified. Previous project K2.1.1	5 years	Moorefield Town Council	Hardy County OEM	Coordination with partner entities should require little to no additional funding	N/A
Moorefield 3	Goal 1 Objective 2 & 4	Flooding	Install pumps on Allegheny Street to control ponding area problem and provide additional small pumps for ponding areas should the need arise.	3	Structural Projects	Ongoing. Previous projects K1.2.1 and K1.2.2 combined.	3 years	Moorefield Street Department	Hardy County OEM	Up to \$5,000 per pump	Local Funding
<b>Pendleton County</b>											
Pendleton 1	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Conduct periodic public education campaigns using a variety of approaches on topics such as all-hazard risk awareness, procedures after receiving notifications of hazards, prevention of hazards and personal preparedness.	1	Public Education and Awareness	Ongoing. Previous projects L4.1.1, L5.2.1, L8.1.1, L8.1.2, and L10.1.1 combined	Ongoing as needed	Pendleton County OEM	Pendleton County Floodplain Manager Pendleton County Commission	Up to \$2,500 per outreach campaign	PDM EMPG Local Funding
Pendleton 2	Goal 1 Objective 2	Wildfires	Remove debris throughout wooded areas of the county to limit potential of wildfires.	2	Prevention	Ongoing. Project description clarified. Previous project L9.2.1	5 years	Pendleton County OEM	WV Division of Forestry National Park Service USDA	Up to \$5,000 per project	WV Division of Forestry NPS USDA
Pendleton 3	Goal 1 Objective 3  Goal 2 Objective 3	Hazardous Materials	Provide appropriate training to personnel handling hazardous spills.	3	Emergency Services	Ongoing. Previous project L6.1.1	5 years	Pendleton County LEPC	Pendleton County OEM	Up to \$2,500 per event for materials, etc.	HMEP SERC EMPG Local Funding
Pendleton 4	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	4	Prevention	Ongoing. Previous project L5.3.2	Ongoing as needed	Pendleton County Floodplain Manager	Pendleton County OEM	Up to \$100,500 per home purchased	HMGP
Pendleton 5	Goal 1 Objective 1	All hazards	Purchase and install a local weather station.	5	Public Education and Awareness	Ongoing. Project description clarified. Previous project L10.1.2	5 years	Pendleton County OEM	NOAA	Up to \$2,000 for equipment	N/A
Pendleton 6	Goal 1 Objective 1	All hazards	Identify, establish, and maintain an early warning system in the county.	6	Prevention	Ongoing. Previous projects L 1.1.1 and L5.1.1 combined	4 years	Pendleton County OEM	Neighboring County Emergency Managers	Unknown	SHSP Local Funding
Pendleton 7	Goal 1 Objective 2	Dam Failure	Conduct a survey of structures already located around dam structures that could be affected by a failure and limit new development in hazardous areas.	7	Prevention	Ongoing. Previous projects L1.2.1 and L1.2.2 combined	5 years	Pendleton County OEM	N/A	Identification of structures and code development should require little to no additional funding.	N/A



TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
Pendleton 8	Goal 1 Objective 2 & 4	Flooding	Purchase and place needed river gauges throughout county.	8	Structural Projects	Ongoing. Project description clarified. Previous project L1.1.3	5 years	Pendleton County OEM	Pendleton County Floodplain Manager	Contingent on the number of gauges placed; up to \$15,000 a piece for placement and operation	EPA FEMA Local Funding
<b>City of Petersburg - Grant County</b>											
Petersburg 1	Goal 1 Objective 2 & 4	Flooding	Address surface water issues within the City of Petersburg.	1	Structural Projects	Ongoing. A new drainage system has been installed in certain areas of town but others are still in need. Previous project M1.1.1	5 years	Petersburg City Council	Region 8 PDC	Up to \$1,000,000, contingent on the type of project that is undertaken	SCGB IJDC Local Funding
Petersburg 2	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	2	Prevention	New	Ongoing as needed	Petersburg Floodplain Manager	Grant County OEM	Up to \$124,900 per home purchased	HMGP
<b>City of Piedmont - Mineral County</b>											
Piedmont 1	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	1	Prevention	New	Ongoing as needed	Piedmont Floodplain Coordinator	Mineral County OEM	Up to \$128,300 per home purchased	HMGP
Piedmont 2	Goal 1 Objective 2  Goal 2 Objective 2	All hazards	Address issue of Piedmont transportation being limited to road access only.	2	Emergency Services	Ongoing. Previous project N1.1.1	5 years	Piedmont Municipal Council	WVDOH	Unknown	N/A
<b>Region 8 Planning and Development Council</b>											
Region 8 PDC 1	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Undertake periodic all-hazards public outreach campaigns to encourage residents to prepare for themselves, including being self-sufficient for up to 72 hours.	1	Public Education and Awareness	Ongoing. Previous project 3.1.1	Ongoing	County Emergency Managers	N/A	Up to @2,500 per campaign per jurisdiction	PDM EMPG Local Funding
Region 8 PDC 2	Goal 1 Objective 2 & 4	Flooding	Continue to participate in supporting jurisdictions in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	2	Prevention	Ongoing. Previous project 1.1.2.	Ongoing as needed	Floodplain coordinators	County Commissions Municipal Councils	Based on the median value of owner-occupied housing units	HMGP
Region 8 PDC 3	Goal 1 Objective 2 & 3  Goal 2 Objective 2 & 3	All hazards	Support and facilitate build-out of the Statewide Interoperable Radio Network (SIRN).	3	Emergency Services	Ongoing. Previous project 2.2.1	Ongoing	County Emergency Managers	County Commissioners County Communications Directors	Up to \$10,000,000	EMPG SHSP Local Funding USDHS
Region 8 PDC 4	Goal 1 Objective 3	Land Subsidence	Partner with developers and WVDOH to ensure that land grading is appropriate to reduce slippage that destroys road and property.	4	Prevention	New	Ongoing	County Emergency Managers	WVDOH HOAs Developers	Coordination with partner entities should require little to no additional funding	N/A



TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
Region 8 PDC 5	Goal 1 Objective 2 & 3  Goal 2 Objective 2 & 3	All hazards	Establish a wide-area mass notification system.	5	Emergency Services	Ongoing. Previous project 2.1.1	Ongoing	County Emergency Managers	County Commissions	Up to \$1,000,000 for installation over a large area	SHSP
<b>Town of Ridgeley - Mineral County</b>											
Ridgeley 1	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Conduct periodic public education campaigns using a variety of approaches on topics such as all-hazard risk awareness, procedures after receiving notifications of hazards, prevention of hazards and personal preparedness.	1	Public Education and Awareness	New	Ongoing as needed	Ridgeley Town Council	Mineral County OEM	Up to \$2,500 per outreach campaign	PDM EMPG Local Funding
Ridgeley 2	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	2	Prevention	New	Ongoing as needed	Ridgeley Floodplain Manager	Mineral County OEM	Up to \$128,300 per home purchased	HMGP
<b>City of Romney - Hampshire County</b>											
Romney 1	Goal 1 Objective 1  Goal 2 Objective 1	All hazards	Conduct periodic public education campaigns using a variety of approaches on topics such as all-hazard risk awareness, procedures after receiving notifications of hazards, prevention of hazards and personal preparedness.	1	Public Education and Awareness	New	Ongoing as needed	Romney City Council	Hampshire County OEM	Up to \$2,500 per outreach campaign	PDM EMPG Local Funding
Romney 2	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	2	Prevention	New	Ongoing as needed	Romney Floodplain Manager	Hampshire County OEM	Up to \$121,900 per home purchased	HMGP
<b>Town of Wardensville - Hardy County</b>											
Wardensville 1	Goal 1 Objective 3  Goal 2 Objective 3	Winter Weather	Partner with the Town of Moorefield to develop a plan that addresses winter storms and snow removal.	1	Emergency Services	Ongoing. Previous project Q3.1.1	5 years	Wardensville Town Council	Hardy County OEM	Coordination with partner entities should require little to no additional funding	N/A
Wardensville 2	Goal 1 Objective 2 & 4	Flooding	Continue to participate in acquisition/demolition, elevation, mitigation reconstruction, and relocation projects for flood-prone properties.	1	Prevention	New	Ongoing as needed	Wardensville Floodplain Manager	Hardy County OEM	Up to \$118,800 per home purchased	HMGP
Wardensville 3	Goal 1 Objective 2 & 4	Flooding	Replace culverts to correct flooding problems in repetitive loss area.	3	Structural Projects	Ongoing. Previous project Q2.2.1	5 years	Wardensville Street Department	WVDOH	Up to \$10,000 per project, contingent on size.	Local Funding WVDOH



TABLE 3.3.B REGION 8 MITIGATION PROJECTS											
Project Number	Goal & Objective	Hazard	Strategy	Priority	Mitigation Type	Narrative	Timeline for Completion	Lead Agency	Support Agency	Cost Estimate	Potential Funding Source
Wardensville 4	Goal 1 Objective 2 & 4	Flooding	Identify and implement necessary changes to the sewer lagoon embankment and wastewater treatment plant.	4	Structural Projects	Ongoing. Project description clarified. Previous project Q2.2.2	5 years	Wardensville Town Council	Region 8 PDC	Unknown	N/A
Wardensville 5	Goal 1 Objective 2 & 4	Flooding	Evaluate flood risk potential for the Town of Wardensville related to possible upstream dam failures that contribute to the Cacapon River and Trout Run streams that course through the town.	5	Prevention	Ongoing. Previous project Q1.1.1	5 years	Wardensville Police Department	Wardensville Fire Department Hardy County OEM	Evaluation should require little to no additional funding	N/A
Wardensville 6	Goal 1 Objective 2 & 4	Flooding	Conduct an environmental design study that aims to correct flooding problems to ensure access to roads is not cut off.	6	Public Education and Awareness	Ongoing. Project description clarified. Previous project Q2.1.3	5 years	Wardensville Town Council	Region 8 PDC	Unknown	N/A



## 4.0 PLAN MAINTENANCE

§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.

### 2018 UPDATE

This section clarifies the process by which this plan will be monitored, evaluated, and updated through the cycle. The hazard mitigation plan will be discussed at the semiannual Community Economic Development Strategy meetings.

### 4.1 Monitoring, Evaluating, and Updating the Plan

Per regulation, and good practice, this plan must be maintained. Maintenance of a plan comes in a variety of forms; in this case, the custodial agency responsible for the maintenance and update of this hazard mitigation plan is the Region 8 Planning and Development Council.

The hazard mitigation plan steering committee understands the importance of monitoring, evaluating, and updating this plan; for this reason, they have determined that they would do this in the following way.

TABLE 4.1A MONITORING, EVALUATING, AND UPDATING THE PLAN		
<i>Meeting Type</i>	<i>Timeframe</i>	<i>Purpose</i>
Community Economic Development Strategy (CEDS)	Twice a year	The committee will join the CEDS meeting and discuss any updates or changes to the hazard mitigation plan.
Region 8 PDC	Annually	As part of their regular meetings, the committee members will review progress in mitigation projects and strategies at least once a year.
Post-disaster	At any time	If/when a disaster occurs in the area, the committee will keep records of the event or incident to incorporate it into the following update of this plan. Additionally, the committee can review how well mitigation actions performed against the hazard.

The committee should evaluate the performance of the plan thus far based on several criteria. For instance, the committee should consider revising mitigation strategies if it appears that the plan is failing according to one of the following measures.

- **Cost Effectiveness:** Is sufficient funding available to implement the project at a cost manageable by the local government? If not, is funding available? Will the costs of implementing the project be significantly less than the cumulative future costs potentially incurred by an un-corrected situation?
- **Property Protection:** How significant will the action be at eliminating or reducing damage to structures and infrastructure?
- **Life Safety:** How effectively will the action protect lives and prevent injuries?
- **Environmental Impacts:** Will implementing the project adversely affect the environment in any way? Will implementing the project actually benefit the environment?
- **Social Impacts:** Will the public perceive the project as positively lessening hazard-related losses? Will implementing the project adversely affect any segment of the population?
- **Legal Impacts:** Do your governmental organizations and/or partner agencies have the authority to implement the actions?
- **Political Impacts:** Will implementing the project create negative political issues?
- **Overall Feasibility:** Do local policies and capabilities currently allow for the implementation of the project? Are programs available to assist in funding the implementation of the project? Do local leaders generally agree that implementing the project will be beneficial to the community?

#### 4.2 Planning Addendums

Addendums to this plan may become necessary as events occur and priorities change. Addendums that are requested and approved at the local level may be passed through the Region 8 PDC, WVDHSEM, and to FEMA Region III. Addendums that are reviewed and approved by WVDHSEM and FEMA Region II will be included in the plan.

#### 4.3 Implementation through Existing Programs/Capabilities Assessment

As the custodial agency of the regional Hazard Mitigation Plan (HMP), the Region 8 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 8.

As mentioned, the Region 8 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.

Finally, it is significant to note that all 17 member governments within Region 8 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.

#### **4.4 Continued Public Involvement**

The Region 8 PDC, counties, cities, and towns recognize the need and understand the value in engaging the public throughout the life cycle of this plan. For this reason, the

committee members have decided to continue to engage with the public through a variety of formats including:

- commission and other pre-planned public meetings,
- social media update posts,
- jurisdictions' websites,
- schools education and mailings, and
- online surveys.

Further, as the updated plan is adopted, the public will be given the opportunity to comment on the plan prior to its adoption by passage resolution or ordinance. The Region 8 PDC will maintain file copies of the Hazard Mitigation Plan available for the public to review and inspect during regular business hours, and post the document online on their website for viewing at any time.

## 5.0 APPENDICES

The appendices included in this plan are the following.

Appendix 1: Source Data

Appendix 2: Process and Participation

Appendix 3: Inactive Projects

Appendix 4: Hampshire County Floodplain Management Plan

Appendix 5: Citations

Appendix 6: Adopting Resolutions (to be added when plan is approved)



## APPENDIX 1 SOURCE DATA

### DROUGHT

The following tables present the amount of consecutive weeks with start and end dates of droughts in Region 8. All data is from U.S. Drought Monitor.

TABLE 5.1.A DROUGHT CONDITIONS IN GRANT COUNTY				
<i>Start Date</i>	<i>End Date</i>	<i>Consecutive Weeks</i>	<i>County</i>	<i>Drought Severity</i>
1/11/2000	2/15/2000	6	Grant County	D0 - Abnormally Dry
3/21/2000	5/23/2000	10	Grant County	D0 - Abnormally Dry
11/28/2000	12/12/2000	3	Grant County	D0 - Abnormally Dry
5/8/2001	5/29/2001	4	Grant County	D0 - Abnormally Dry
10/23/2001	5/7/2002	29	Grant County	D0 - Abnormally Dry
11/20/2001	1/15/2002	9	Grant County	D1 - Moderate Drought
1/29/2002	4/23/2002	13	Grant County	D1 - Moderate Drought
2/12/2002	4/16/2002	10	Grant County	D2 - Severe Drought
3/12/2002	4/9/2002	5	Grant County	D3 - Extreme Drought
7/9/2002	7/23/2002	3	Grant County	D0 - Abnormally Dry
9/3/2002	11/12/2002	11	Grant County	D0 - Abnormally Dry
9/10/2002	10/15/2002	6	Grant County	D1 - Moderate Drought
9/20/2005	11/8/2005	8	Grant County	D0 - Abnormally Dry
9/20/2005	10/4/2005	3	Grant County	D1 - Moderate Drought
3/14/2006	4/11/2006	5	Grant County	D0 - Abnormally Dry
5/9/2006	6/20/2006	7	Grant County	D0 - Abnormally Dry
8/15/2006	8/29/2006	3	Grant County	D0 - Abnormally Dry
12/19/2006	2/27/2007	11	Grant County	D0 - Abnormally Dry
6/5/2007	8/21/2007	12	Grant County	D0 - Abnormally Dry
9/4/2007	10/23/2007	8	Grant County	D0 - Abnormally Dry
9/23/2008	10/21/2008	5	Grant County	D0 - Abnormally Dry
11/11/2008	4/28/2009	25	Grant County	D0 - Abnormally Dry
12/9/2008	3/31/2009	17	Grant County	D1 - Moderate Drought
9/15/2009	10/20/2009	6	Grant County	D0 - Abnormally Dry
9/22/2009	10/13/2009	4	Grant County	D1 - Moderate Drought
4/27/2010	5/11/2010	3	Grant County	D0 - Abnormally Dry
6/29/2010	3/8/2011	37	Grant County	D0 - Abnormally Dry
7/6/2010	11/30/2010	22	Grant County	D1 - Moderate Drought

TABLE 5.1.A DROUGHT CONDITIONS IN GRANT COUNTY				
Start Date	End Date	Consecutive Weeks	County	Drought Severity
8/31/2010	11/2/2010	10	Grant County	D2 - Severe Drought
9/7/2010	9/28/2010	4	Grant County	D3 - Extreme Drought
2/8/2011	3/1/2011	4	Grant County	D1 - Moderate Drought
8/2/2011	9/6/2011	6	Grant County	D0 - Abnormally Dry
3/20/2012	5/8/2012	8	Grant County	D0 - Abnormally Dry
6/19/2012	8/28/2012	11	Grant County	D0 - Abnormally Dry
11/27/2012	1/15/2013	8	Grant County	D0 - Abnormally Dry
4/16/2013	5/7/2013	4	Grant County	D0 - Abnormally Dry
11/12/2013	2/4/2014	13	Grant County	D0 - Abnormally Dry
4/22/2014	5/13/2014	4	Grant County	D0 - Abnormally Dry
9/16/2014	10/14/2014	5	Grant County	D0 - Abnormally Dry
1/20/2015	3/3/2015	7	Grant County	D0 - Abnormally Dry
9/8/2015	5/31/2016	39	Grant County	D0 - Abnormally Dry
9/13/2016	9/27/2016	3	Grant County	D0 - Abnormally Dry
11/15/2016	1/17/2017	10	Grant County	D0 - Abnormally Dry
3/21/2017	5/2/2017	7	Grant County	D0 - Abnormally Dry
10/3/2017	10/17/2017	3	Grant County	D0 - Abnormally Dry

TABLE 5.1.B DROUGHT CONDITIONS IN HAMPSHIRE COUNTY				
Start Date	End Date	Consecutive Weeks	County	Drought Severity
1/11/2000	2/15/2000	6	Hampshire County	D0 - Abnormally Dry
3/21/2000	5/23/2000	10	Hampshire County	D0 - Abnormally Dry
11/28/2000	12/12/2000	3	Hampshire County	D0 - Abnormally Dry
5/8/2001	5/29/2001	4	Hampshire County	D0 - Abnormally Dry
9/4/2001	5/21/2002	38	Hampshire County	D0 - Abnormally Dry
11/6/2001	5/7/2002	27	Hampshire County	D1 - Moderate Drought
2/12/2002	4/16/2002	10	Hampshire County	D2 - Severe Drought
2/26/2002	4/9/2002	7	Hampshire County	D3 - Extreme Drought
7/9/2002	7/23/2002	3	Hampshire County	D0 - Abnormally Dry
8/27/2002	11/19/2002	13	Hampshire County	D0 - Abnormally Dry
9/10/2002	10/15/2002	6	Hampshire County	D1 - Moderate Drought
8/23/2005	10/4/2005	7	Hampshire County	D0 - Abnormally Dry
9/20/2005	10/4/2005	3	Hampshire County	D1 - Moderate Drought
3/14/2006	4/25/2006	7	Hampshire County	D0 - Abnormally Dry

TABLE 5.1.B DROUGHT CONDITIONS IN HAMPSHIRE COUNTY				
Start Date	End Date	Consecutive Weeks	County	Drought Severity
5/9/2006	6/20/2006	7	Hampshire County	D0 - Abnormally Dry
8/15/2006	8/29/2006	3	Hampshire County	D0 - Abnormally Dry
12/19/2006	1/2/2007	3	Hampshire County	D0 - Abnormally Dry
1/30/2007	2/27/2007	5	Hampshire County	D0 - Abnormally Dry
5/29/2007	12/4/2007	28	Hampshire County	D0 - Abnormally Dry
7/17/2007	8/21/2007	6	Hampshire County	D1 - Moderate Drought
1/15/2008	3/4/2008	8	Hampshire County	D0 - Abnormally Dry
11/11/2008	12/9/2008	5	Hampshire County	D0 - Abnormally Dry
2/17/2009	5/5/2009	12	Hampshire County	D0 - Abnormally Dry
3/24/2009	4/14/2009	4	Hampshire County	D1 - Moderate Drought
9/15/2009	10/20/2009	6	Hampshire County	D0 - Abnormally Dry
9/22/2009	10/13/2009	4	Hampshire County	D1 - Moderate Drought
6/29/2010	3/8/2011	37	Hampshire County	D0 - Abnormally Dry
7/20/2010	11/30/2010	20	Hampshire County	D1 - Moderate Drought
8/3/2010	11/2/2010	14	Hampshire County	D2 - Severe Drought
9/7/2010	9/28/2010	4	Hampshire County	D3 - Extreme Drought
1/25/2011	3/1/2011	6	Hampshire County	D1 - Moderate Drought
7/26/2011	9/6/2011	7	Hampshire County	D0 - Abnormally Dry
8/2/2011	9/6/2011	6	Hampshire County	D1 - Moderate Drought
4/3/2012	5/8/2012	6	Hampshire County	D0 - Abnormally Dry
7/3/2012	8/28/2012	9	Hampshire County	D0 - Abnormally Dry
4/16/2013	5/7/2013	4	Hampshire County	D0 - Abnormally Dry
11/12/2013	12/10/2013	5	Hampshire County	D0 - Abnormally Dry
4/22/2014	5/13/2014	4	Hampshire County	D0 - Abnormally Dry
9/16/2014	10/14/2014	5	Hampshire County	D0 - Abnormally Dry
1/20/2015	3/3/2015	7	Hampshire County	D0 - Abnormally Dry
8/18/2015	9/29/2015	7	Hampshire County	D0 - Abnormally Dry
4/12/2016	5/31/2016	8	Hampshire County	D0 - Abnormally Dry
9/13/2016	9/27/2016	3	Hampshire County	D0 - Abnormally Dry
11/15/2016	1/17/2017	10	Hampshire County	D0 - Abnormally Dry

TABLE 5.1.C DROUGHT CONDITIONS IN HARDY COUNTY				
Start Date	End Date	Consecutive Weeks	County	Drought Severity
1/11/2000	2/15/2000	6	Hardy County	D0 - Abnormally Dry
3/21/2000	5/23/2000	10	Hardy County	D0 - Abnormally Dry
10/31/2000	11/14/2000	3	Hardy County	D0 - Abnormally Dry

TABLE 5.1.C DROUGHT CONDITIONS IN HARDY COUNTY				
Start Date	End Date	Consecutive Weeks	County	Drought Severity
11/28/2000	12/12/2000	3	Hardy County	D0 - Abnormally Dry
5/8/2001	5/22/2001	3	Hardy County	D0 - Abnormally Dry
10/23/2001	5/21/2002	31	Hardy County	D0 - Abnormally Dry
11/20/2001	5/7/2002	25	Hardy County	D1 - Moderate Drought
2/5/2002	4/16/2002	11	Hardy County	D2 - Severe Drought
2/26/2002	4/16/2002	8	Hardy County	D3 - Extreme Drought
7/9/2002	7/23/2002	3	Hardy County	D0 - Abnormally Dry
9/3/2002	11/12/2002	11	Hardy County	D0 - Abnormally Dry
9/3/2002	10/15/2002	7	Hardy County	D1 - Moderate Drought
9/10/2002	9/24/2002	3	Hardy County	D2 - Severe Drought
9/20/2005	10/4/2005	3	Hardy County	D0 - Abnormally Dry
3/14/2006	4/18/2006	6	Hardy County	D0 - Abnormally Dry
5/9/2006	6/20/2006	7	Hardy County	D0 - Abnormally Dry
8/15/2006	8/29/2006	3	Hardy County	D0 - Abnormally Dry
12/19/2006	1/9/2007	4	Hardy County	D0 - Abnormally Dry
1/30/2007	2/27/2007	5	Hardy County	D0 - Abnormally Dry
6/12/2007	12/11/2007	27	Hardy County	D0 - Abnormally Dry
1/15/2008	3/4/2008	8	Hardy County	D0 - Abnormally Dry
11/11/2008	5/5/2009	26	Hardy County	D0 - Abnormally Dry
12/9/2008	4/14/2009	19	Hardy County	D1 - Moderate Drought
9/15/2009	10/20/2009	6	Hardy County	D0 - Abnormally Dry
9/22/2009	10/13/2009	4	Hardy County	D1 - Moderate Drought
6/29/2010	3/8/2011	37	Hardy County	D0 - Abnormally Dry
7/6/2010	11/30/2010	22	Hardy County	D1 - Moderate Drought
8/3/2010	11/2/2010	14	Hardy County	D2 - Severe Drought
9/7/2010	9/28/2010	4	Hardy County	D3 - Extreme Drought
1/25/2011	3/1/2011	6	Hardy County	D1 - Moderate Drought
7/26/2011	9/6/2011	7	Hardy County	D0 - Abnormally Dry
8/2/2011	8/30/2011	5	Hardy County	D1 - Moderate Drought
3/20/2012	5/8/2012	8	Hardy County	D0 - Abnormally Dry
7/3/2012	8/28/2012	9	Hardy County	D0 - Abnormally Dry
11/27/2012	1/29/2013	10	Hardy County	D0 - Abnormally Dry
4/16/2013	5/7/2013	4	Hardy County	D0 - Abnormally Dry
11/12/2013	12/10/2013	5	Hardy County	D0 - Abnormally Dry
4/22/2014	5/13/2014	4	Hardy County	D0 - Abnormally Dry
9/16/2014	12/23/2014	15	Hardy County	D0 - Abnormally Dry
9/8/2015	9/29/2015	4	Hardy County	D0 - Abnormally Dry
4/12/2016	5/31/2016	8	Hardy County	D0 - Abnormally Dry

TABLE 5.1.C DROUGHT CONDITIONS IN HARDY COUNTY				
Start Date	End Date	Consecutive Weeks	County	Drought Severity
9/13/2016	9/27/2016	3	Hardy County	D0 - Abnormally Dry
11/8/2016	1/17/2017	11	Hardy County	D0 - Abnormally Dry
10/3/2017	10/17/2017	3	Hardy County	D0 - Abnormally Dry

TABLE 5.1.D DROUGHT CONDITIONS IN MINERAL COUNTY				
Start Date	End Date	Consecutive Weeks	County	Drought Severity
1/11/2000	2/15/2000	6	Mineral County	D0 - Abnormally Dry
3/21/2000	5/23/2000	10	Mineral County	D0 - Abnormally Dry
11/28/2000	12/12/2000	3	Mineral County	D0 - Abnormally Dry
5/8/2001	5/29/2001	4	Mineral County	D0 - Abnormally Dry
9/4/2001	5/7/2002	36	Mineral County	D0 - Abnormally Dry
11/6/2001	1/8/2002	10	Mineral County	D1 - Moderate Drought
1/22/2002	4/23/2002	14	Mineral County	D1 - Moderate Drought
2/12/2002	4/16/2002	10	Mineral County	D2 - Severe Drought
3/12/2002	3/26/2002	3	Mineral County	D3 - Extreme Drought
7/9/2002	7/23/2002	3	Mineral County	D0 - Abnormally Dry
9/3/2002	10/22/2002	8	Mineral County	D0 - Abnormally Dry
9/10/2002	9/24/2002	3	Mineral County	D1 - Moderate Drought
9/6/2005	11/8/2005	10	Mineral County	D0 - Abnormally Dry
9/20/2005	10/4/2005	3	Mineral County	D1 - Moderate Drought
3/14/2006	4/18/2006	6	Mineral County	D0 - Abnormally Dry
5/9/2006	6/20/2006	7	Mineral County	D0 - Abnormally Dry
12/19/2006	1/9/2007	4	Mineral County	D0 - Abnormally Dry
1/30/2007	2/27/2007	5	Mineral County	D0 - Abnormally Dry
5/29/2007	11/20/2007	26	Mineral County	D0 - Abnormally Dry
11/11/2008	12/16/2008	6	Mineral County	D0 - Abnormally Dry
3/24/2009	4/28/2009	6	Mineral County	D0 - Abnormally Dry
9/15/2009	10/20/2009	6	Mineral County	D0 - Abnormally Dry
9/22/2009	10/13/2009	4	Mineral County	D1 - Moderate Drought
6/29/2010	3/1/2011	36	Mineral County	D0 - Abnormally Dry
7/27/2010	11/30/2010	19	Mineral County	D1 - Moderate Drought
8/31/2010	11/2/2010	10	Mineral County	D2 - Severe Drought
9/7/2010	9/28/2010	4	Mineral County	D3 - Extreme Drought
7/26/2011	9/6/2011	7	Mineral County	D0 - Abnormally Dry
8/2/2011	8/30/2011	5	Mineral County	D1 - Moderate Drought
4/3/2012	5/8/2012	6	Mineral County	D0 - Abnormally Dry

TABLE 5.1.D DROUGHT CONDITIONS IN MINERAL COUNTY				
Start Date	End Date	Consecutive Weeks	County	Drought Severity
6/19/2012	8/28/2012	11	Mineral County	D0 - Abnormally Dry
4/16/2013	5/7/2013	4	Mineral County	D0 - Abnormally Dry
11/12/2013	2/4/2014	13	Mineral County	D0 - Abnormally Dry
4/22/2014	5/13/2014	4	Mineral County	D0 - Abnormally Dry
9/16/2014	10/14/2014	5	Mineral County	D0 - Abnormally Dry
11/25/2014	3/3/2015	15	Mineral County	D0 - Abnormally Dry
8/18/2015	5/31/2016	42	Mineral County	D0 - Abnormally Dry
4/26/2016	5/17/2016	4	Mineral County	D1 - Moderate Drought
9/13/2016	9/27/2016	3	Mineral County	D0 - Abnormally Dry
11/15/2016	1/3/2017	8	Mineral County	D0 - Abnormally Dry

TABLE 5.1.E DROUGHT CONDITIONS IN PENDLETON COUNTY				
Start Date	End Date	Consecutive Weeks	County	Drought Severity
1/4/2000	2/15/2000	7	Pendleton County	D0 - Abnormally Dry
3/14/2000	5/23/2000	11	Pendleton County	D0 - Abnormally Dry
10/31/2000	12/12/2000	7	Pendleton County	D0 - Abnormally Dry
5/8/2001	5/22/2001	3	Pendleton County	D0 - Abnormally Dry
10/30/2001	5/21/2002	30	Pendleton County	D0 - Abnormally Dry
11/20/2001	4/30/2002	24	Pendleton County	D1 - Moderate Drought
1/29/2002	4/16/2002	12	Pendleton County	D2 - Severe Drought
3/12/2002	4/9/2002	5	Pendleton County	D3 - Extreme Drought
6/25/2002	7/23/2002	5	Pendleton County	D0 - Abnormally Dry
8/6/2002	11/12/2002	15	Pendleton County	D0 - Abnormally Dry
9/3/2002	10/15/2002	7	Pendleton County	D1 - Moderate Drought
9/10/2002	9/24/2002	3	Pendleton County	D2 - Severe Drought
9/20/2005	11/8/2005	8	Pendleton County	D0 - Abnormally Dry
3/14/2006	4/18/2006	6	Pendleton County	D0 - Abnormally Dry
5/9/2006	6/20/2006	7	Pendleton County	D0 - Abnormally Dry
8/15/2006	8/29/2006	3	Pendleton County	D0 - Abnormally Dry
12/19/2006	2/27/2007	11	Pendleton County	D0 - Abnormally Dry
6/19/2007	8/28/2007	11	Pendleton County	D0 - Abnormally Dry
9/18/2007	10/23/2007	6	Pendleton County	D0 - Abnormally Dry
8/19/2008	4/28/2009	37	Pendleton County	D0 - Abnormally Dry

TABLE 5.1.E DROUGHT CONDICTIONS IN PENDLETON COUNTY				
Start Date	End Date	Consecutive Weeks	County	Drought Severity
12/9/2008	3/31/2009	17	Pendleton County	D1 - Moderate Drought
9/15/2009	10/20/2009	6	Pendleton County	D0 - Abnormally Dry
6/29/2010	4/5/2011	41	Pendleton County	D0 - Abnormally Dry
7/6/2010	11/2/2010	18	Pendleton County	D1 - Moderate Drought
1/25/2011	3/1/2011	6	Pendleton County	D1 - Moderate Drought
8/23/2011	9/6/2011	3	Pendleton County	D0 - Abnormally Dry
3/20/2012	5/8/2012	8	Pendleton County	D0 - Abnormally Dry
6/19/2012	7/24/2012	6	Pendleton County	D0 - Abnormally Dry
11/27/2012	3/5/2013	15	Pendleton County	D0 - Abnormally Dry
1/1/2013	1/29/2013	5	Pendleton County	D1 - Moderate Drought
11/5/2013	1/7/2014	10	Pendleton County	D0 - Abnormally Dry
7/22/2014	12/23/2014	23	Pendleton County	D0 - Abnormally Dry
9/1/2015	2/9/2016	24	Pendleton County	D0 - Abnormally Dry
3/8/2016	5/31/2016	13	Pendleton County	D0 - Abnormally Dry
9/13/2016	9/27/2016	3	Pendleton County	D0 - Abnormally Dry
11/8/2016	1/17/2017	11	Pendleton County	D0 - Abnormally Dry
2/28/2017	5/23/2017	13	Pendleton County	D0 - Abnormally Dry
3/21/2017	5/2/2017	7	Pendleton County	D1 - Moderate Drought
10/3/2017	10/17/2017	3	Pendleton County	D0 - Abnormally Dry

SHELDUS DROUGHT DATA

TABLE 5.1.F SHELDUS DROUGHT DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Grant	Drought	1977	5	\$916,491	0	0	0
Grant	Drought	1997	7	\$0	0	0	0
Grant	Drought	1999	8	\$1,283,473	0	0	0
Hampshire	Drought	1977	5	\$916,491	0	0	0
Hampshire	Drought	1997	7	\$0	0	0	0
Hampshire	Drought	1998	9	\$494,743	0	0	0
Hampshire	Drought	1999	8	\$1,283,473	0	0	0
Hardy	Drought	1977	5	\$916,491	0	0	0
Hardy	Drought	1997	7	\$0	0	0	0
Hardy	Drought	1998	9	\$494,743	0	0	0
Hardy	Drought	1999	8	\$1,283,473	0	0	0
Mineral	Drought	1977	5	\$916,491	0	0	0



Mineral	Drought	1997	7	\$0	0	0	0
Mineral	Drought	1999	8	\$1,283,473	0	0	0
Pendleton	Drought	1977	5	\$916,491	0	0	0
Pendleton	Drought	1998	9	\$494,743	0	0	0
Pendleton	Drought	1999	8	\$1,283,473	0	0	0
<b>Totals</b>				<b>\$12,484,050</b>	<b>0</b>	<b>0</b>	<b>0</b>

### SHELDUS SEVERE SUMMER WEATHER EVENT DATA

Data is organized by county, then by date.

TABLE 5.1.G SHELDUS HAIL DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Grant	Hail	1964	4	\$2	\$24	0	0
Grant	Hail	1969	6	\$0	\$303	0	0
Grant	Hail	1970	9	\$0	\$29,159	0.0475	0
Grant	Hail	1975	7	\$27,037	\$270	0	0
Grant	Hail	1976	7	\$13	\$1,278	0.025	0
Grant	Hail	1979	6	\$31	\$31	0	0
Grant	Hail	1986	7	\$0	\$68	0	0
Hampshire	Hail	1964	4	\$2	\$24	0	0
Hampshire	Hail	1969	6	\$0	\$303	0	0
Hampshire	Hail	1970	9	\$0	\$29,159	0.0475	0
Hampshire	Hail	1975	7	\$27,037	\$270	0	0
Hampshire	Hail	1976	7	\$13	\$1,278	0.025	0
Hampshire	Hail	1979	6	\$31	\$31	0	0
Hampshire	Hail	1986	7	\$0	\$68	0	0
Hampshire	Hail	1993	7	\$0	\$8,456	0	0
Hampshire	Hail	1993	9	\$846	\$846	0	0
Hampshire	Hail	1998	6	\$74,961	\$7,496	0	0
Hardy	Hail	1964	4	\$2	\$24	0	0
Hardy	Hail	1969	6	\$0	\$303	0	0
Hardy	Hail	1970	9	\$0	\$29,159	0.0475	0
Hardy	Hail	1975	7	\$27,037	\$270	0	0
Hardy	Hail	1976	7	\$13	\$1,278	0.025	0
Hardy	Hail	1979	6	\$31	\$31	0	0
Hardy	Hail	1986	7	\$0	\$68	0	0
Hardy	Hail	2010	6	\$0	\$1,121	0	0
Mineral	Hail	1964	4	\$2	\$24	0	0
Mineral	Hail	1969	6	\$0	\$303	0	0
Mineral	Hail	1970	9	\$0	\$29,159	0.0475	0
Mineral	Hail	1975	7	\$27,037	\$270	0	0



**TABLE 5.1.G SHELDUS HAIL DATA**

County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Mineral	Hail	1976	7	\$13	\$1,278	0.025	0
Mineral	Hail	1979	6	\$31	\$31	0	0
Mineral	Hail	1986	7	\$0	\$68	0	0
Mineral	Hail	1993	7	\$0	\$8,456	0	0
Mineral	Hail	1998	6	\$4,498	\$0	0	0
Mineral	Hail	2008	6	\$0	\$22,700	0	0
Pendleton	Hail	1964	4	\$2	\$24	0	0
Pendleton	Hail	1969	6	\$0	\$303	0	0
Pendleton	Hail	1970	9	\$0	\$29,159	0.0475	0
Pendleton	Hail	1975	7	\$27,037	\$270	0	0
Pendleton	Hail	1976	7	\$13	\$1,278	0.025	0
Pendleton	Hail	1979	6	\$31	\$31	0	0
Pendleton	Hail	1986	7	\$0	\$68	0	0
<b>Total</b>				<b>\$215,719</b>	<b>\$204,734</b>	<b>0</b>	<b>0</b>

**TABLE 5.1.H SHELDUS LIGHTNING DATA**

County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Grant	Lightning	1964	4	\$2	\$24	0	0
Grant	Lightning	1966	7	\$0	\$3,428	0	0
Grant	Lightning	1966	8	\$0	\$686	0.02	0
Grant	Lightning	1970	9	\$0	\$29,159	0.0475	0
Grant	Lightning	1976	6	\$0	\$1,952	0	0
Grant	Lightning	1976	7	\$13	\$1,278	0.025	0
Grant	Lightning	1985	5	\$0	\$1,893	0	0
Grant	Lightning	1986	7	\$0	\$68	0	0
Grant	Lightning	2005	4	\$0	\$0	1	0
Hampshire	Lightning	1964	4	\$2	\$24	0	0
Hampshire	Lightning	1966	7	\$0	\$3,428	0	0
Hampshire	Lightning	1966	8	\$0	\$686	0.02	0
Hampshire	Lightning	1970	9	\$0	\$29,159	0.0475	0
Hampshire	Lightning	1976	6	\$0	\$1,952	0	0
Hampshire	Lightning	1976	7	\$13	\$1,278	0.025	0
Hampshire	Lightning	1986	7	\$0	\$68	0	0
Hardy	Lightning	1964	4	\$2	\$24	0	0
Hardy	Lightning	1966	7	\$0	\$3,428	0	0
Hardy	Lightning	1966	8	\$0	\$686	0.02	0
Hardy	Lightning	1970	9	\$0	\$29,159	0.0475	0
Hardy	Lightning	1976	6	\$0	\$1,952	0	0
Hardy	Lightning	1976	7	\$13	\$1,278	0.025	0

TABLE 5.1.H SHELDUS LIGHTNING DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Hardy	Lightning	1986	7	\$0	\$68	0	0
Mineral	Lightning	1964	4	\$2	\$24	0	0
Mineral	Lightning	1966	7	\$0	\$3,428	0	0
Mineral	Lightning	1966	8	\$0	\$686	0.02	0
Mineral	Lightning	1970	9	\$0	\$29,159	0.0475	0
Mineral	Lightning	1976	6	\$0	\$1,952	0	0
Mineral	Lightning	1976	7	\$13	\$1,278	0.025	0
Mineral	Lightning	1980	7	\$0	\$14,828	0	0
Mineral	Lightning	1986	7	\$0	\$68	0	0
Mineral	Lightning	1991	9	\$0	\$8,971	0	0
Mineral	Lightning	1995	7	\$0	\$32,070	0	0
Pendleton	Lightning	1964	4	\$2	\$24	0	0
Pendleton	Lightning	1966	7	\$0	\$3,428	0	0
Pendleton	Lightning	1966	8	\$0	\$686	0.02	0
Pendleton	Lightning	1970	9	\$0	\$29,159	0.0475	0
Pendleton	Lightning	1976	6	\$0	\$1,952	0	0
Pendleton	Lightning	1976	7	\$13	\$1,278	0.025	0
Pendleton	Lightning	1986	7	\$0	\$68	0	0
<b>Total</b>				<b>\$76</b>	<b>\$240,735</b>	<b>1.4625</b>	<b>0</b>

TABLE 5.1.I SHELDUS SEVERE STORM/THUNDER STORM DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Grant	Severe Storm/Thunder Storm	1960	8	\$751	\$751	0	0.02
Grant	Severe Storm/Thunder Storm	1964	6	\$0	\$717	0	0
Grant	Severe Storm/Thunder Storm	1965	4	\$0	\$353	0.01	0
Grant	Severe Storm/Thunder Storm	1965	10	\$0	\$4	0	0
Grant	Severe Storm/Thunder Storm	1967	3	\$0	\$332,571	0	0.025
Grant	Severe Storm/Thunder Storm	1969	6	\$3,329	\$33,293	0	0
Grant	Severe Storm/Thunder Storm	1970	9	\$0	\$29,159	0.0475	0
Grant	Severe Storm/Thunder Storm	1975	7	\$27,037	\$270	0	0
Grant	Severe Storm/Thunder Storm	1976	7	\$13	\$1,278	0.025	0
Grant	Severe Storm/Thunder Storm	1979	8	\$0	\$306	0.01	0
Grant	Severe Storm/Thunder Storm	1980	7	\$0	\$175	0	0
Grant	Severe Storm/Thunder Storm	1980	8	\$0	\$27	0	0
Grant	Severe Storm/Thunder Storm	1980	9	\$13	\$13	0	0
Grant	Severe Storm/Thunder Storm	1981	5	\$1	\$1,344	0	0
Grant	Severe Storm/Thunder Storm	1982	3	\$0	\$230	0	0
Grant	Severe Storm/Thunder Storm	1985	5	\$0	\$1,893	0	0
Grant	Severe Storm/Thunder Storm	1991	4	\$0	\$449	0	0
Grant	Severe Storm/Thunder Storm	1998	8	\$0	\$2,249	0	0
Grant	Severe Storm/Thunder Storm	1999	9	\$0	\$3,667	0	0
Grant	Severe Storm/Thunder Storm	2000	7	\$0	\$7,096	0	0



TABLE 5.1.I SHELDUS SEVERE STORM/THUNDER STORM DATA

County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Grant	Severe Storm/Thunder Storm	2000	8	\$0	\$7,096	0	0
Grant	Severe Storm/Thunder Storm	2002	4	\$0	\$340	0	0
Grant	Severe Storm/Thunder Storm	2002	5	\$0	\$1,358	0	0
Grant	Severe Storm/Thunder Storm	2003	7	\$0	\$1,992	0	0
Grant	Severe Storm/Thunder Storm	2003	8	\$0	\$664	0	0
Grant	Severe Storm/Thunder Storm	2004	5	\$0	\$4,528	0	0
Grant	Severe Storm/Thunder Storm	2007	6	\$0	\$1,768	0	0
Grant	Severe Storm/Thunder Storm	2007	9	\$0	\$589	0	0
Grant	Severe Storm/Thunder Storm	2008	6	\$0	\$9,648	0	0
Grant	Severe Storm/Thunder Storm	2008	7	\$0	\$568	0	0
Grant	Severe Storm/Thunder Storm	2010	8	\$0	\$3,922	0	0
Grant	Severe Storm/Thunder Storm	2011	4	\$0	\$6,518	0	0
Grant	Severe Storm/Thunder Storm	2011	5	\$0	\$543	0	0
Grant	Severe Storm/Thunder Storm	2011	7	\$0	\$1,630	0	0
Grant	Severe Storm/Thunder Storm	2012	6	\$0	\$6,386	0	0
Grant	Severe Storm/Thunder Storm	2012	7	\$0	\$532	0	0
Grant	Severe Storm/Thunder Storm	2012	8	\$0	\$266	0	0
Grant	Severe Storm/Thunder Storm	2013	7	\$262	\$0	0	0
Grant	Severe Storm/Thunder Storm	2013	12	\$262	\$0	0	0
Grant	Severe Storm/Thunder Storm	2014	6	\$0	\$5,161	0	0
Grant	Severe Storm/Thunder Storm	2014	7	\$3,355	\$1,032	0	0
Grant	Severe Storm/Thunder Storm	2016	6	\$0	\$0	0	0
Hampshire	Severe Storm/Thunder Storm	1960	8	\$751	\$751	0	0.02
Hampshire	Severe Storm/Thunder Storm	1964	6	\$0	\$717	0	0
Hampshire	Severe Storm/Thunder Storm	1965	4	\$0	\$353	0.01	0
Hampshire	Severe Storm/Thunder Storm	1965	10	\$0	\$4	0	0
Hampshire	Severe Storm/Thunder Storm	1967	3	\$0	\$332,571	0	0.025
Hampshire	Severe Storm/Thunder Storm	1970	9	\$0	\$29,159	0.0475	0
Hampshire	Severe Storm/Thunder Storm	1975	7	\$27,037	\$270	0	0
Hampshire	Severe Storm/Thunder Storm	1976	7	\$13	\$1,278	0.025	0
Hampshire	Severe Storm/Thunder Storm	1979	8	\$0	\$306	0.01	0
Hampshire	Severe Storm/Thunder Storm	1980	6	\$6	\$741	0	0
Hampshire	Severe Storm/Thunder Storm	1980	7	\$11	\$289	0	0
Hampshire	Severe Storm/Thunder Storm	1980	8	\$0	\$27	0	0
Hampshire	Severe Storm/Thunder Storm	1980	9	\$19	\$185	0	0
Hampshire	Severe Storm/Thunder Storm	1981	5	\$1	\$1,344	0	0
Hampshire	Severe Storm/Thunder Storm	1982	3	\$0	\$230	0	0
Hampshire	Severe Storm/Thunder Storm	1983	7	\$0	\$61	0	0
Hampshire	Severe Storm/Thunder Storm	1990	6	\$0	\$47	0	0
Hampshire	Severe Storm/Thunder Storm	1991	4	\$0	\$449	0	0
Hampshire	Severe Storm/Thunder Storm	1993	7	\$0	\$169	0	0
Hampshire	Severe Storm/Thunder Storm	1993	9	\$846	\$8,456	1	0
Hampshire	Severe Storm/Thunder Storm	1996	6	\$0	\$58,407	0	0
Hampshire	Severe Storm/Thunder Storm	1996	7	\$0	\$7,788	0	0
Hampshire	Severe Storm/Thunder Storm	1997	8	\$0	\$3,806	0	0



**TABLE 5.1.I SHELDUS SEVERE STORM/THUNDER STORM DATA**

County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Hampshire	Severe Storm/Thunder Storm	1999	4	\$0	\$367	0	0
Hampshire	Severe Storm/Thunder Storm	1999	5	\$0	\$11,001	0	0
Hampshire	Severe Storm/Thunder Storm	2000	7	\$0	\$710	0	0
Hampshire	Severe Storm/Thunder Storm	2000	8	\$0	\$3,548	0	0
Hampshire	Severe Storm/Thunder Storm	2001	7	\$0	\$690	0	0
Hampshire	Severe Storm/Thunder Storm	2002	5	\$0	\$3,396	0	0
Hampshire	Severe Storm/Thunder Storm	2002	7	\$0	\$1,358	0	0
Hampshire	Severe Storm/Thunder Storm	2003	7	\$0	\$1,992	0	0
Hampshire	Severe Storm/Thunder Storm	2004	5	\$0	\$5,821	0	0
Hampshire	Severe Storm/Thunder Storm	2006	7	\$0	\$30,304	0	0
Hampshire	Severe Storm/Thunder Storm	2006	9	\$0	\$12,122	0	0
Hampshire	Severe Storm/Thunder Storm	2007	6	\$0	\$2,947	0	0
Hampshire	Severe Storm/Thunder Storm	2007	7	\$0	\$1,179	0	0
Hampshire	Severe Storm/Thunder Storm	2008	4	\$0	\$1,703	0	0
Hampshire	Severe Storm/Thunder Storm	2008	6	\$0	\$64,129	0	0
Hampshire	Severe Storm/Thunder Storm	2008	7	\$0	\$2,838	0	0
Hampshire	Severe Storm/Thunder Storm	2010	6	\$0	\$560	0	0
Hampshire	Severe Storm/Thunder Storm	2010	7	\$0	\$2,802	0	0
Hampshire	Severe Storm/Thunder Storm	2010	8	\$0	\$31,379	0	0
Hampshire	Severe Storm/Thunder Storm	2010	9	\$0	\$560	0	0
Hampshire	Severe Storm/Thunder Storm	2011	3	\$0	\$1,086	0	0
Hampshire	Severe Storm/Thunder Storm	2011	4	\$0	\$1,086	0	0
Hampshire	Severe Storm/Thunder Storm	2011	6	\$0	\$8,148	0	0
Hampshire	Severe Storm/Thunder Storm	2011	7	\$0	\$4,889	0	0
Hampshire	Severe Storm/Thunder Storm	2011	8	\$0	\$543	0	0
Hampshire	Severe Storm/Thunder Storm	2011	9	\$0	\$543	0	0
Hampshire	Severe Storm/Thunder Storm	2012	6	\$0	\$16,232	0	0
Hampshire	Severe Storm/Thunder Storm	2012	7	\$0	\$1,597	0	0
Hampshire	Severe Storm/Thunder Storm	2013	5	\$262	\$0	0	0
Hampshire	Severe Storm/Thunder Storm	2013	7	\$525	\$0	0	0
Hampshire	Severe Storm/Thunder Storm	2013	11	\$0	\$525	0	0
Hampshire	Severe Storm/Thunder Storm	2014	5	\$129	\$0	0	0
Hampshire	Severe Storm/Thunder Storm	2014	6	\$129	\$0	0	0
Hampshire	Severe Storm/Thunder Storm	2014	7	\$903	\$0	0	0
Hampshire	Severe Storm/Thunder Storm	2014	8	\$129	\$0	0	0
Hampshire	Severe Storm/Thunder Storm	2014	9	\$387	\$0	0	0
Hampshire	Severe Storm/Thunder Storm	2015	5	\$0	\$1,031	0	0
Hampshire	Severe Storm/Thunder Storm	2015	6	\$0	\$1,547	0	0
Hampshire	Severe Storm/Thunder Storm	2015	9	\$0	\$516	0	0
Hardy	Severe Storm/Thunder Storm	1960	8	\$751	\$751	0	0.02
Hardy	Severe Storm/Thunder Storm	1964	6	\$0	\$717	0	0
Hardy	Severe Storm/Thunder Storm	1965	4	\$0	\$353	0.01	0
Hardy	Severe Storm/Thunder Storm	1965	10	\$0	\$4	0	0
Hardy	Severe Storm/Thunder Storm	1967	3	\$0	\$332,571	0	0.025
Hardy	Severe Storm/Thunder Storm	1967	6	\$3,658	\$36,583	0	0



**TABLE 5.1.I SHELDUS SEVERE STORM/THUNDER STORM DATA**

County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Hardy	Severe Storm/Thunder Storm	1970	5	\$3,149	\$31,491	0	0
Hardy	Severe Storm/Thunder Storm	1970	9	\$0	\$29,159	0.0475	0
Hardy	Severe Storm/Thunder Storm	1975	7	\$27,037	\$270	0	0
Hardy	Severe Storm/Thunder Storm	1976	7	\$13	\$1,278	0.025	0
Hardy	Severe Storm/Thunder Storm	1979	8	\$0	\$306	0.01	0
Hardy	Severe Storm/Thunder Storm	1980	7	\$0	\$175	0	0
Hardy	Severe Storm/Thunder Storm	1980	8	\$0	\$27	0	0
Hardy	Severe Storm/Thunder Storm	1980	9	\$13	\$13	0	0
Hardy	Severe Storm/Thunder Storm	1981	5	\$1	\$1,344	0	0
Hardy	Severe Storm/Thunder Storm	1982	3	\$0	\$230	0	0
Hardy	Severe Storm/Thunder Storm	1991	4	\$0	\$449	0	0
Hardy	Severe Storm/Thunder Storm	1992	6	\$0	\$871	0	0
Hardy	Severe Storm/Thunder Storm	1995	7	\$0	\$6,414	0	0
Hardy	Severe Storm/Thunder Storm	1997	6	\$0	\$1,523	0	0
Hardy	Severe Storm/Thunder Storm	1998	6	\$0	\$7,496	0	0
Hardy	Severe Storm/Thunder Storm	2000	6	\$0	\$7,805	0	0
Hardy	Severe Storm/Thunder Storm	2000	7	\$0	\$7,805	0	0
Hardy	Severe Storm/Thunder Storm	2000	8	\$0	\$7,096	0	0
Hardy	Severe Storm/Thunder Storm	2001	8	\$0	\$345	0	0
Hardy	Severe Storm/Thunder Storm	2002	5	\$0	\$340	0	0
Hardy	Severe Storm/Thunder Storm	2002	8	\$0	\$1,358	0	0
Hardy	Severe Storm/Thunder Storm	2003	6	\$0	\$664	0	0
Hardy	Severe Storm/Thunder Storm	2003	8	\$0	\$664	0	0
Hardy	Severe Storm/Thunder Storm	2004	5	\$0	\$647	0	0
Hardy	Severe Storm/Thunder Storm	2007	6	\$0	\$1,179	0	0
Hardy	Severe Storm/Thunder Storm	2007	8	\$0	\$589	0	0
Hardy	Severe Storm/Thunder Storm	2008	6	\$0	\$2,838	0	0
Hardy	Severe Storm/Thunder Storm	2008	7	\$0	\$1,703	0	0
Hardy	Severe Storm/Thunder Storm	2010	5	\$0	\$1,681	0	0
Hardy	Severe Storm/Thunder Storm	2010	8	\$0	\$3,922	0	0
Hardy	Severe Storm/Thunder Storm	2011	4	\$0	\$4,346	0	0
Hardy	Severe Storm/Thunder Storm	2011	5	\$0	\$3,802	0	0
Hardy	Severe Storm/Thunder Storm	2011	6	\$0	\$272	0	0
Hardy	Severe Storm/Thunder Storm	2011	7	\$0	\$1,086	0	0
Hardy	Severe Storm/Thunder Storm	2011	9	\$0	\$1,086	0	0
Hardy	Severe Storm/Thunder Storm	2012	6	\$0	\$2,661	0	0
Hardy	Severe Storm/Thunder Storm	2012	7	\$0	\$5,322	0	0
Hardy	Severe Storm/Thunder Storm	2012	8	\$0	\$798	0	0
Hardy	Severe Storm/Thunder Storm	2013	6	\$1,311	\$0	0	0
Hardy	Severe Storm/Thunder Storm	2013	7	\$262	\$0	0	0
Hardy	Severe Storm/Thunder Storm	2013	8	\$131	\$0	0	0
Hardy	Severe Storm/Thunder Storm	2013	11	\$131	\$0	0	0
Hardy	Severe Storm/Thunder Storm	2014	6	\$8,903	\$20,645	0	0
Hardy	Severe Storm/Thunder Storm	2014	7	\$1,419	\$1,032	0	0
Hardy	Severe Storm/Thunder Storm	2014	10	\$0	\$1,032	0	0



TABLE 5.1.I SHELDUS SEVERE STORM/THUNDER STORM DATA

County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Hardy	Severe Storm/Thunder Storm	2015	6	\$0	\$516	0	0
Mineral	Severe Storm/Thunder Storm	1960	8	\$751	\$751	0	0.02
Mineral	Severe Storm/Thunder Storm	1964	6	\$0	\$717	0	0
Mineral	Severe Storm/Thunder Storm	1964	8	\$0	\$1,971	0	0
Mineral	Severe Storm/Thunder Storm	1965	4	\$0	\$353	0.01	0
Mineral	Severe Storm/Thunder Storm	1965	10	\$0	\$4	0	0
Mineral	Severe Storm/Thunder Storm	1967	3	\$0	\$332,571	0	0.025
Mineral	Severe Storm/Thunder Storm	1970	9	\$0	\$29,159	0.0475	0
Mineral	Severe Storm/Thunder Storm	1975	7	\$27,037	\$270	0	0
Mineral	Severe Storm/Thunder Storm	1976	7	\$13	\$1,278	0.025	0
Mineral	Severe Storm/Thunder Storm	1979	8	\$0	\$306	0.01	0
Mineral	Severe Storm/Thunder Storm	1980	6	\$6	\$741	0	0
Mineral	Severe Storm/Thunder Storm	1980	7	\$11	\$289	0	0
Mineral	Severe Storm/Thunder Storm	1980	8	\$0	\$27	0	0
Mineral	Severe Storm/Thunder Storm	1980	9	\$19	\$185	0	0
Mineral	Severe Storm/Thunder Storm	1981	5	\$1	\$1,344	0	0
Mineral	Severe Storm/Thunder Storm	1982	3	\$0	\$230	0	0
Mineral	Severe Storm/Thunder Storm	1991	4	\$0	\$4,486	0.5	0
Mineral	Severe Storm/Thunder Storm	1992	7	\$0	\$87	0	0
Mineral	Severe Storm/Thunder Storm	1993	7	\$0	\$85	0	0
Mineral	Severe Storm/Thunder Storm	1995	7	\$0	\$2,405	0	0
Mineral	Severe Storm/Thunder Storm	1997	5	\$0	\$20,555	0	0
Mineral	Severe Storm/Thunder Storm	1997	6	\$0	\$1,523	0	0
Mineral	Severe Storm/Thunder Storm	1997	7	\$0	\$4,568	0	0
Mineral	Severe Storm/Thunder Storm	1997	8	\$0	\$10,658	0	0
Mineral	Severe Storm/Thunder Storm	2000	6	\$0	\$1,419	0	0
Mineral	Severe Storm/Thunder Storm	2000	8	\$0	\$1,419	0	0
Mineral	Severe Storm/Thunder Storm	2000	11	\$0	\$355	0	0
Mineral	Severe Storm/Thunder Storm	2001	4	\$0	\$6,899	0	0
Mineral	Severe Storm/Thunder Storm	2001	7	\$0	\$345	0	0
Mineral	Severe Storm/Thunder Storm	2002	5	\$0	\$4,075	0	0
Mineral	Severe Storm/Thunder Storm	2002	8	\$0	\$3,396	0	0
Mineral	Severe Storm/Thunder Storm	2003	7	\$0	\$1,660	0	0
Mineral	Severe Storm/Thunder Storm	2003	8	\$0	\$1,992	0	0
Mineral	Severe Storm/Thunder Storm	2004	5	\$0	\$9,702	0	0
Mineral	Severe Storm/Thunder Storm	2006	6	\$0	\$3,030	0	0
Mineral	Severe Storm/Thunder Storm	2007	6	\$0	\$2,947	0	0
Mineral	Severe Storm/Thunder Storm	2007	7	\$0	\$589	0	0
Mineral	Severe Storm/Thunder Storm	2008	6	\$0	\$13,620	0	0
Mineral	Severe Storm/Thunder Storm	2008	7	\$0	\$5,108	0	0
Mineral	Severe Storm/Thunder Storm	2010	6	\$0	\$1,121	0	0
Mineral	Severe Storm/Thunder Storm	2010	8	\$0	\$5,603	0	0
Mineral	Severe Storm/Thunder Storm	2012	5	\$0	\$1,064	0	0
Mineral	Severe Storm/Thunder Storm	2012	6	\$0	\$4,257	0	0
Mineral	Severe Storm/Thunder Storm	2012	7	\$0	\$2,129	0	0



**TABLE 5.1.I SHELDUS SEVERE STORM/THUNDER STORM DATA**

County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Mineral	Severe Storm/Thunder Storm	2013	5	\$525	\$0	0	0
Mineral	Severe Storm/Thunder Storm	2013	8	\$262	\$0	0	0
Mineral	Severe Storm/Thunder Storm	2013	11	\$131	\$0	0	0
Mineral	Severe Storm/Thunder Storm	2014	9	\$1,290	\$2,065	0	0
Mineral	Severe Storm/Thunder Storm	2015	6	\$0	\$516	0	0
Mineral	Severe Storm/Thunder Storm	2015	8	\$0	\$1,031	0	0
Mineral	Severe Storm/Thunder Storm	2015	9	\$0	\$1,031	0	0
Pendleton	Severe Storm/Thunder Storm	1960	8	\$751	\$751	0	0.02
Pendleton	Severe Storm/Thunder Storm	1964	6	\$0	\$717	0	0
Pendleton	Severe Storm/Thunder Storm	1965	4	\$0	\$353	0.01	0
Pendleton	Severe Storm/Thunder Storm	1965	10	\$0	\$4	0	0
Pendleton	Severe Storm/Thunder Storm	1967	3	\$0	\$332,571	0	0.025
Pendleton	Severe Storm/Thunder Storm	1970	9	\$0	\$29,159	0.0475	0
Pendleton	Severe Storm/Thunder Storm	1975	7	\$27,037	\$270	0	0
Pendleton	Severe Storm/Thunder Storm	1976	7	\$13	\$1,278	0.025	0
Pendleton	Severe Storm/Thunder Storm	1979	8	\$0	\$306	0.01	0
Pendleton	Severe Storm/Thunder Storm	1980	7	\$0	\$175	0	0
Pendleton	Severe Storm/Thunder Storm	1980	8	\$0	\$27	0	0
Pendleton	Severe Storm/Thunder Storm	1980	9	\$13	\$13	0	0
Pendleton	Severe Storm/Thunder Storm	1981	5	\$1	\$1,344	0	0
Pendleton	Severe Storm/Thunder Storm	1982	3	\$0	\$230	0	0
Pendleton	Severe Storm/Thunder Storm	1991	4	\$0	\$449	0	0
Pendleton	Severe Storm/Thunder Storm	1996	5	\$0	\$779	0	0
Pendleton	Severe Storm/Thunder Storm	1998	6	\$0	\$1,499	0	0
Pendleton	Severe Storm/Thunder Storm	1999	4	\$0	\$367	0	0
Pendleton	Severe Storm/Thunder Storm	2000	8	\$0	\$3,548	0	0
Pendleton	Severe Storm/Thunder Storm	2002	8	\$0	\$340	0	0
Pendleton	Severe Storm/Thunder Storm	2004	5	\$0	\$970	0	0
Pendleton	Severe Storm/Thunder Storm	2004	6	\$0	\$3,234	0	0
Pendleton	Severe Storm/Thunder Storm	2006	7	\$0	\$15,152	0	0
Pendleton	Severe Storm/Thunder Storm	2008	6	\$0	\$11,350	0	0
Pendleton	Severe Storm/Thunder Storm	2010	6	\$0	\$2,241	0	0
Pendleton	Severe Storm/Thunder Storm	2010	8	\$0	\$560	0	0
Pendleton	Severe Storm/Thunder Storm	2011	4	\$0	\$543	0	0
Pendleton	Severe Storm/Thunder Storm	2011	9	\$0	\$543	0	0
Pendleton	Severe Storm/Thunder Storm	2012	6	\$0	\$2,661	0	0
Pendleton	Severe Storm/Thunder Storm	2013	6	\$577	\$0	0	0
Pendleton	Severe Storm/Thunder Storm	2013	7	\$131	\$0	0	0
Pendleton	Severe Storm/Thunder Storm	2013	11	\$131	\$0	0	0
Pendleton	Severe Storm/Thunder Storm	2014	7	\$258	\$0	0	0
<b>Totals</b>				<b>\$171,912</b>	<b>\$2,569,566</b>	<b>2</b>	<b>0</b>



TABLE 5.1.J SHELDUS TORNADO DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Grant	Tornado	1997	6	\$22,839	\$0	0	0
Grant	Tornado	1998	8	\$0	\$22,488	0	0
Hampshire	Tornado	1998	6	\$224,883	\$179,907	5	0
Mineral	Tornado	1998	6	\$164,914	\$232,379	0	0
Pendleton	Tornado	1998	6	\$0	\$11,994	0	0
<b>Total</b>				<b>\$412,636</b>	<b>\$446,768</b>	<b>5</b>	<b>0</b>

TABLE 5.1.K SHELDUS WIND DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Grant	Wind	1960	2	\$0	\$751	0	0
Grant	Wind	1964	4	\$2	\$24	0	0
Grant	Wind	1965	4	\$0	\$353	0.01	0
Grant	Wind	1965	10	\$0	\$4	0	0
Grant	Wind	1965	11	\$0	\$71	0	0
Grant	Wind	1965	12	\$0	\$388	0	0
Grant	Wind	1966	7	\$0	\$3,428	0	0
Grant	Wind	1967	2	\$0	\$6,651	0	0
Grant	Wind	1969	6	\$0	\$303	0	0
Grant	Wind	1970	6	\$0	\$31,491	0	0
Grant	Wind	1970	9	\$0	\$29,159	0.0475	0
Grant	Wind	1971	1	\$0	\$5,485	0	0
Grant	Wind	1974	12	\$0	\$0	0	0.01
Grant	Wind	1975	1	\$0	\$413	0	0.02
Grant	Wind	1975	7	\$27,037	\$270	0	0
Grant	Wind	1976	1	\$0	\$3,904	0	0
Grant	Wind	1976	6	\$0	\$1,952	0	0
Grant	Wind	1976	7	\$13	\$1,278	0.025	0
Grant	Wind	1977	5	\$0	\$16,802	0	0
Grant	Wind	1978	1	\$0	\$3,407	0	0
Grant	Wind	1979	4	\$0	\$306	0	0
Grant	Wind	1979	8	\$0	\$306	0.01	0
Grant	Wind	1980	3	\$0	\$27	0	0
Grant	Wind	1980	7	\$0	\$148	0	0
Grant	Wind	1980	9	\$13	\$13	0	0
Grant	Wind	1981	2	\$0	\$244	0	0
Grant	Wind	1981	5	\$1	\$1,344	0	0
Grant	Wind	1981	6	\$2	\$2,444	0	0
Grant	Wind	1982	4	\$0	\$1,266	0	0
Grant	Wind	1986	7	\$0	\$68	0	0
Grant	Wind	1991	4	\$0	\$449	0	0



TABLE 5.1.K SHELDUS WIND DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Grant	Wind	1992	11	\$0	\$189	0	0
Grant	Wind	1993	1	\$0	\$169	0	0
Grant	Wind	1996	9	\$97,364	\$48,672	0	0
Grant	Wind	1997	3	\$0	\$10,087	0	0
Grant	Wind	1998	8	\$0	\$2,249	0	0
Grant	Wind	1999	9	\$0	\$3,667	0	0
Grant	Wind	2000	7	\$0	\$7,096	0	0
Grant	Wind	2000	8	\$0	\$7,096	0	0
Grant	Wind	2002	3	\$0	\$3,881	0	0
Grant	Wind	2002	4	\$0	\$340	0	0
Grant	Wind	2002	5	\$0	\$1,358	0	0
Grant	Wind	2003	1	\$0	\$1,395	0	0
Grant	Wind	2003	2	\$0	\$133	0	0
Grant	Wind	2003	7	\$0	\$1,992	0	0
Grant	Wind	2003	8	\$0	\$664	0	0
Grant	Wind	2003	9	\$48,144	\$129,491	0.38	0
Grant	Wind	2003	10	\$0	\$3,984	0	0
Grant	Wind	2003	11	\$0	\$4,980	0	0
Grant	Wind	2004	5	\$0	\$4,528	0	0
Grant	Wind	2005	4	\$0	\$0	1	1
Grant	Wind	2006	1	\$0	\$96,974	0	0
Grant	Wind	2007	6	\$0	\$1,768	0	0
Grant	Wind	2007	9	\$0	\$589	0	0
Grant	Wind	2008	2	\$0	\$709	0	0
Grant	Wind	2008	6	\$0	\$9,648	0	0
Grant	Wind	2008	7	\$0	\$568	0	0
Grant	Wind	2010	8	\$0	\$3,922	0	0
Grant	Wind	2011	4	\$0	\$6,518	0	0
Grant	Wind	2011	5	\$0	\$543	0	0
Grant	Wind	2011	7	\$0	\$1,630	0	0
Grant	Wind	2012	6	\$0	\$6,386	0	0
Grant	Wind	2012	7	\$0	\$532	0	0
Grant	Wind	2012	8	\$0	\$266	0	0
Grant	Wind	2012	10	\$21,287	\$10,644	0	0
Grant	Wind	2013	7	\$262	\$0	0	0
Grant	Wind	2013	12	\$262	\$0	0	0
Grant	Wind	2014	6	\$0	\$5,161	0	0
Grant	Wind	2014	7	\$3,355	\$1,032	0	0
Grant	Wind	2016	6	\$0	\$0	0	0
Hampshire	Wind	1960	2	\$0	\$751	0	0
Hampshire	Wind	1964	4	\$2	\$24	0	0
Hampshire	Wind	1965	4	\$0	\$353	0.01	0
Hampshire	Wind	1965	10	\$0	\$4	0	0
Hampshire	Wind	1965	11	\$0	\$71	0	0
Hampshire	Wind	1966	7	\$0	\$3,428	0	0



TABLE 5.1.K SHELDUS WIND DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Hampshire	Wind	1967	2	\$0	\$6,651	0	0
Hampshire	Wind	1969	6	\$0	\$303	0	0
Hampshire	Wind	1970	9	\$0	\$29,159	0.0475	0
Hampshire	Wind	1971	1	\$0	\$5,485	0	0
Hampshire	Wind	1974	12	\$0	\$0	0	0.01
Hampshire	Wind	1975	1	\$0	\$413	0	0.02
Hampshire	Wind	1975	7	\$27,037	\$270	0	0
Hampshire	Wind	1976	1	\$0	\$3,904	0	0
Hampshire	Wind	1976	6	\$0	\$1,952	0	0
Hampshire	Wind	1976	7	\$13	\$1,278	0.025	0
Hampshire	Wind	1977	5	\$0	\$16,802	0	0
Hampshire	Wind	1978	1	\$0	\$3,407	0	0
Hampshire	Wind	1979	4	\$0	\$306	0	0
Hampshire	Wind	1979	8	\$0	\$306	0.01	0
Hampshire	Wind	1980	3	\$0	\$27	0	0
Hampshire	Wind	1980	6	\$6	\$627	0	0
Hampshire	Wind	1980	7	\$0	\$148	0	0
Hampshire	Wind	1980	8	\$0	\$1,141	0	0
Hampshire	Wind	1980	9	\$19	\$71	0	0
Hampshire	Wind	1981	2	\$0	\$244	0	0
Hampshire	Wind	1981	5	\$1	\$1,344	0	0
Hampshire	Wind	1981	6	\$2	\$2,444	0	0
Hampshire	Wind	1983	7	\$0	\$61	0	0
Hampshire	Wind	1986	7	\$0	\$68	0	0
Hampshire	Wind	1990	6	\$0	\$47	0	0
Hampshire	Wind	1991	4	\$0	\$449	0	0
Hampshire	Wind	1992	11	\$0	\$189	0	0
Hampshire	Wind	1993	1	\$0	\$169	0	0
Hampshire	Wind	1996	6	\$0	\$58,407	0	0
Hampshire	Wind	1996	7	\$0	\$7,788	0	0
Hampshire	Wind	1996	9	\$97,364	\$48,672	0	0
Hampshire	Wind	1997	3	\$0	\$21,506	0	0
Hampshire	Wind	1997	8	\$0	\$3,806	0	0
Hampshire	Wind	1999	4	\$0	\$367	0	0
Hampshire	Wind	1999	5	\$0	\$11,001	0	0
Hampshire	Wind	2000	7	\$0	\$710	0	0
Hampshire	Wind	2000	8	\$0	\$3,548	0	0
Hampshire	Wind	2001	7	\$0	\$690	0	0
Hampshire	Wind	2002	3	\$0	\$3,881	0	0
Hampshire	Wind	2002	5	\$0	\$3,396	0	0
Hampshire	Wind	2002	7	\$0	\$1,358	0	0
Hampshire	Wind	2003	2	\$0	\$133	0	0
Hampshire	Wind	2003	7	\$0	\$1,992	0	0
Hampshire	Wind	2003	9	\$48,144	\$129,491	0.38	0
Hampshire	Wind	2003	10	\$0	\$3,984	0	0

TABLE 5.1.K SHELDTUS WIND DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Hampshire	Wind	2003	11	\$0	\$4,980	0	0
Hampshire	Wind	2004	5	\$0	\$5,821	0	0
Hampshire	Wind	2006	1	\$0	\$96,974	0	0
Hampshire	Wind	2006	7	\$0	\$30,304	0	0
Hampshire	Wind	2006	9	\$0	\$12,122	0	0
Hampshire	Wind	2006	10	\$0	\$20,607	0	0
Hampshire	Wind	2007	6	\$0	\$2,947	0	0
Hampshire	Wind	2007	7	\$0	\$1,179	0	0
Hampshire	Wind	2008	2	\$0	\$709	0	0
Hampshire	Wind	2008	4	\$0	\$1,703	0	0
Hampshire	Wind	2008	6	\$0	\$64,129	0	0
Hampshire	Wind	2008	7	\$0	\$2,838	0	0
Hampshire	Wind	2010	6	\$0	\$560	0	0
Hampshire	Wind	2010	7	\$0	\$2,802	0	0
Hampshire	Wind	2010	8	\$0	\$31,379	0	0
Hampshire	Wind	2010	9	\$0	\$560	0	0
Hampshire	Wind	2011	3	\$0	\$1,086	0	0
Hampshire	Wind	2011	4	\$0	\$1,086	0	0
Hampshire	Wind	2011	6	\$0	\$8,148	0	0
Hampshire	Wind	2011	7	\$0	\$4,889	0	0
Hampshire	Wind	2011	8	\$0	\$543	0	0
Hampshire	Wind	2011	9	\$0	\$543	0	0
Hampshire	Wind	2012	6	\$0	\$16,232	0	0
Hampshire	Wind	2012	7	\$0	\$1,597	0	0
Hampshire	Wind	2012	10	\$0	\$2,129	0	0
Hampshire	Wind	2013	5	\$262	\$0	0	0
Hampshire	Wind	2013	7	\$525	\$0	0	0
Hampshire	Wind	2013	11	\$0	\$525	0	0
Hampshire	Wind	2014	5	\$129	\$0	0	0
Hampshire	Wind	2014	6	\$129	\$0	0	0
Hampshire	Wind	2014	7	\$903	\$0	0	0
Hampshire	Wind	2014	8	\$129	\$0	0	0
Hampshire	Wind	2014	9	\$387	\$0	0	0
Hampshire	Wind	2015	5	\$0	\$1,031	0	0
Hampshire	Wind	2015	6	\$0	\$1,547	0	0
Hampshire	Wind	2015	9	\$0	\$516	0	0
Hardy	Wind	1960	2	\$0	\$751	0	0
Hardy	Wind	1964	4	\$2	\$24	0	0
Hardy	Wind	1965	4	\$0	\$353	0.01	0
Hardy	Wind	1965	10	\$0	\$4	0	0
Hardy	Wind	1965	11	\$0	\$71	0	0
Hardy	Wind	1966	7	\$0	\$3,428	0	0
Hardy	Wind	1967	2	\$0	\$6,651	0	0
Hardy	Wind	1969	6	\$0	\$303	0	0
Hardy	Wind	1970	9	\$0	\$29,159	0.0475	0



TABLE 5.1.K SHELDUS WIND DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Hardy	Wind	1971	1	\$0	\$5,485	0	0
Hardy	Wind	1974	12	\$0	\$0	0	0.01
Hardy	Wind	1975	1	\$0	\$413	0	0.02
Hardy	Wind	1975	7	\$27,037	\$270	0	0
Hardy	Wind	1976	1	\$0	\$3,904	0	0
Hardy	Wind	1976	6	\$0	\$1,952	0	0
Hardy	Wind	1976	7	\$13	\$1,278	0.025	0
Hardy	Wind	1977	5	\$0	\$16,802	0	0
Hardy	Wind	1978	1	\$0	\$3,407	0	0
Hardy	Wind	1979	4	\$0	\$306	0	0
Hardy	Wind	1979	8	\$0	\$306	0.01	0
Hardy	Wind	1980	3	\$0	\$27	0	0
Hardy	Wind	1980	7	\$0	\$148	0	0
Hardy	Wind	1980	9	\$13	\$13	0	0
Hardy	Wind	1981	2	\$0	\$244	0	0
Hardy	Wind	1981	5	\$1	\$1,344	0	0
Hardy	Wind	1981	6	\$2	\$2,444	0	0
Hardy	Wind	1986	7	\$0	\$68	0	0
Hardy	Wind	1991	4	\$0	\$449	0	0
Hardy	Wind	1992	11	\$0	\$189	0	0
Hardy	Wind	1993	1	\$0	\$169	0	0
Hardy	Wind	1995	7	\$0	\$6,414	0	0
Hardy	Wind	1996	9	\$97,364	\$48,672	0	0
Hardy	Wind	1997	3	\$0	\$10,087	0	0
Hardy	Wind	1997	6	\$0	\$1,523	0	0
Hardy	Wind	1998	6	\$0	\$7,496	0	0
Hardy	Wind	2000	6	\$0	\$7,805	0	0
Hardy	Wind	2000	7	\$0	\$7,805	0	0
Hardy	Wind	2000	8	\$0	\$7,096	0	0
Hardy	Wind	2001	8	\$0	\$345	0	0
Hardy	Wind	2002	3	\$0	\$3,881	0	0
Hardy	Wind	2002	5	\$0	\$340	0	0
Hardy	Wind	2002	8	\$0	\$1,358	0	0
Hardy	Wind	2003	2	\$0	\$133	0	0
Hardy	Wind	2003	6	\$0	\$664	0	0
Hardy	Wind	2003	8	\$0	\$664	0	0
Hardy	Wind	2003	9	\$48,144	\$129,491	0.38	0
Hardy	Wind	2003	10	\$0	\$3,984	0	0
Hardy	Wind	2003	11	\$0	\$4,980	0	0
Hardy	Wind	2004	5	\$0	\$647	0	0
Hardy	Wind	2006	1	\$0	\$96,974	0	0
Hardy	Wind	2007	2	\$0	\$6,679	0	0
Hardy	Wind	2007	6	\$0	\$1,179	0	0
Hardy	Wind	2007	8	\$0	\$589	0	0
Hardy	Wind	2008	2	\$0	\$709	0	0

TABLE 5.1.K SHELDS WIND DATA

County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Hardy	Wind	2008	6	\$0	\$2,838	0	0
Hardy	Wind	2008	7	\$0	\$1,703	0	0
Hardy	Wind	2010	5	\$0	\$1,681	0	0
Hardy	Wind	2010	8	\$0	\$3,922	0	0
Hardy	Wind	2011	4	\$0	\$4,346	0	0
Hardy	Wind	2011	5	\$0	\$3,802	0	0
Hardy	Wind	2011	6	\$0	\$272	0	0
Hardy	Wind	2011	7	\$0	\$1,086	0	0
Hardy	Wind	2011	9	\$0	\$1,086	0	0
Hardy	Wind	2012	6	\$0	\$2,661	0	0
Hardy	Wind	2012	7	\$0	\$5,322	0	0
Hardy	Wind	2012	8	\$0	\$798	0	0
Hardy	Wind	2013	6	\$1,311	\$0	0	0
Hardy	Wind	2013	7	\$262	\$0	0	0
Hardy	Wind	2013	8	\$131	\$0	0	0
Hardy	Wind	2013	11	\$131	\$0	0	0
Hardy	Wind	2014	6	\$8,903	\$20,645	0	0
Hardy	Wind	2014	7	\$1,419	\$1,032	0	0
Hardy	Wind	2014	10	\$0	\$1,032	0	0
Hardy	Wind	2015	6	\$0	\$516	0	0
Mineral	Wind	1960	2	\$0	\$751	0	0
Mineral	Wind	1964	4	\$2	\$24	0	0
Mineral	Wind	1965	4	\$0	\$353	0.01	0
Mineral	Wind	1965	10	\$0	\$4	0	0
Mineral	Wind	1965	11	\$0	\$71	0	0
Mineral	Wind	1966	7	\$0	\$3,428	0	0
Mineral	Wind	1967	2	\$0	\$6,651	0	0
Mineral	Wind	1969	6	\$0	\$303	0	0
Mineral	Wind	1970	9	\$0	\$29,159	0.0475	0
Mineral	Wind	1971	1	\$0	\$5,485	0	0
Mineral	Wind	1974	12	\$0	\$0	0	0.01
Mineral	Wind	1975	1	\$0	\$413	0	0.02
Mineral	Wind	1975	7	\$27,037	\$270	0	0
Mineral	Wind	1976	1	\$0	\$3,904	0	0
Mineral	Wind	1976	6	\$0	\$1,952	0	0
Mineral	Wind	1976	7	\$13	\$1,278	0.025	0
Mineral	Wind	1977	5	\$0	\$16,802	0	0
Mineral	Wind	1978	1	\$0	\$3,407	0	0
Mineral	Wind	1979	4	\$0	\$306	0	0
Mineral	Wind	1979	8	\$0	\$306	0.01	0
Mineral	Wind	1980	3	\$0	\$27	0	0
Mineral	Wind	1980	6	\$6	\$627	0	0
Mineral	Wind	1980	7	\$0	\$148	0	0
Mineral	Wind	1980	8	\$0	\$1,141	0	0
Mineral	Wind	1980	9	\$19	\$71	0	0



TABLE 5.1.K SHELDUS WIND DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Mineral	Wind	1981	2	\$0	\$244	0	0
Mineral	Wind	1981	5	\$1	\$1,344	0	0
Mineral	Wind	1981	6	\$2	\$2,444	0	0
Mineral	Wind	1986	7	\$0	\$68	0	0
Mineral	Wind	1991	4	\$0	\$4,486	0.5	0
Mineral	Wind	1992	11	\$0	\$189	0	0
Mineral	Wind	1993	1	\$0	\$169	0	0
Mineral	Wind	1995	7	\$0	\$2,405	0	0
Mineral	Wind	1996	9	\$97,364	\$48,672	0	0
Mineral	Wind	1997	3	\$0	\$10,087	0	0
Mineral	Wind	1997	5	\$0	\$20,555	0	0
Mineral	Wind	1997	6	\$0	\$1,523	0	0
Mineral	Wind	1997	7	\$0	\$4,568	0	0
Mineral	Wind	1997	8	\$0	\$10,658	0	0
Mineral	Wind	2000	1	\$0	\$21,287	0	0
Mineral	Wind	2000	6	\$0	\$1,419	0	0
Mineral	Wind	2000	8	\$0	\$1,419	0	0
Mineral	Wind	2000	11	\$0	\$355	0	0
Mineral	Wind	2001	4	\$0	\$6,899	0	0
Mineral	Wind	2001	7	\$0	\$345	0	0
Mineral	Wind	2002	3	\$0	\$3,881	0	0
Mineral	Wind	2002	5	\$0	\$4,075	0	0
Mineral	Wind	2002	8	\$0	\$3,396	0	0
Mineral	Wind	2003	1	\$0	\$1,395	0	0
Mineral	Wind	2003	2	\$0	\$133	0	0
Mineral	Wind	2003	7	\$0	\$1,660	0	0
Mineral	Wind	2003	8	\$0	\$1,992	0	0
Mineral	Wind	2003	9	\$48,144	\$129,491	0.38	0
Mineral	Wind	2003	10	\$0	\$3,984	0	0
Mineral	Wind	2003	11	\$0	\$4,980	0	0
Mineral	Wind	2004	5	\$0	\$9,702	0	0
Mineral	Wind	2006	1	\$0	\$96,974	0	0
Mineral	Wind	2006	2	\$0	\$60,608	0	0
Mineral	Wind	2006	3	\$0	\$42,426	0	0
Mineral	Wind	2006	5	\$0	\$60,608	0	0
Mineral	Wind	2006	6	\$0	\$3,030	0	0
Mineral	Wind	2007	6	\$0	\$2,947	0	0
Mineral	Wind	2007	7	\$0	\$589	0	0
Mineral	Wind	2008	1	\$0	\$1,703	0	0
Mineral	Wind	2008	2	\$0	\$709	0	0
Mineral	Wind	2008	6	\$0	\$13,620	0	0
Mineral	Wind	2008	7	\$0	\$5,108	0	0
Mineral	Wind	2010	6	\$0	\$1,121	0	0
Mineral	Wind	2010	8	\$0	\$5,603	0	0
Mineral	Wind	2010	12	\$0	\$2,241	0	0

TABLE 5.1.K SHELDTUS WIND DATA

County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Mineral	Wind	2012	5	\$0	\$1,064	0	0
Mineral	Wind	2012	6	\$0	\$4,257	0	0
Mineral	Wind	2012	7	\$0	\$2,129	0	0
Mineral	Wind	2013	5	\$525	\$0	0	0
Mineral	Wind	2013	8	\$262	\$0	0	0
Mineral	Wind	2013	11	\$131	\$0	0	0
Mineral	Wind	2014	9	\$1,290	\$2,065	0	0
Mineral	Wind	2015	6	\$0	\$516	0	0
Mineral	Wind	2015	8	\$0	\$1,031	0	0
Mineral	Wind	2015	9	\$0	\$1,031	0	0
Pendleton	Wind	1960	2	\$0	\$751	0	0
Pendleton	Wind	1964	4	\$2	\$24	0	0
Pendleton	Wind	1965	4	\$0	\$353	0.01	0
Pendleton	Wind	1965	10	\$0	\$4	0	0
Pendleton	Wind	1965	11	\$0	\$71	0	0
Pendleton	Wind	1966	7	\$0	\$3,428	0	0
Pendleton	Wind	1967	2	\$0	\$6,651	0	0
Pendleton	Wind	1969	6	\$0	\$303	0	0
Pendleton	Wind	1969	7	\$333	\$33,293	0	0
Pendleton	Wind	1970	9	\$0	\$29,159	0.0475	0
Pendleton	Wind	1971	1	\$0	\$5,485	0	0
Pendleton	Wind	1974	12	\$0	\$0	0	0.01
Pendleton	Wind	1975	1	\$0	\$413	0	0.02
Pendleton	Wind	1975	7	\$27,037	\$270	0	0
Pendleton	Wind	1976	1	\$0	\$3,904	0	0
Pendleton	Wind	1976	6	\$0	\$1,952	0	0
Pendleton	Wind	1976	7	\$13	\$1,278	0.025	0
Pendleton	Wind	1977	5	\$0	\$16,802	0	0
Pendleton	Wind	1978	1	\$0	\$3,407	0	0
Pendleton	Wind	1979	4	\$0	\$306	0	0
Pendleton	Wind	1979	8	\$0	\$306	0.01	0
Pendleton	Wind	1980	3	\$0	\$27	0	0
Pendleton	Wind	1980	7	\$0	\$148	0	0
Pendleton	Wind	1980	9	\$13	\$13	0	0
Pendleton	Wind	1981	2	\$0	\$244	0	0
Pendleton	Wind	1981	5	\$1	\$1,344	0	0
Pendleton	Wind	1981	6	\$2	\$2,444	0	0
Pendleton	Wind	1986	7	\$0	\$68	0	0
Pendleton	Wind	1991	4	\$0	\$449	0	0
Pendleton	Wind	1992	11	\$0	\$189	0	0
Pendleton	Wind	1993	1	\$0	\$169	0	0
Pendleton	Wind	1996	4	\$0	\$46,725	0	0
Pendleton	Wind	1996	5	\$0	\$779	0	0
Pendleton	Wind	1996	9	\$97,364	\$48,672	0	0
Pendleton	Wind	1997	3	\$0	\$10,087	0	0



TABLE 5.1.K SHELDUS WIND DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Pendleton	Wind	1998	4	\$0	\$1,499	0	0
Pendleton	Wind	1998	6	\$0	\$1,499	0	0
Pendleton	Wind	1999	4	\$0	\$367	0	0
Pendleton	Wind	2000	8	\$0	\$3,548	0	0
Pendleton	Wind	2002	3	\$0	\$3,881	0	0
Pendleton	Wind	2002	8	\$0	\$340	0	0
Pendleton	Wind	2003	2	\$0	\$133	0	0
Pendleton	Wind	2003	5	\$0	\$6,641	0	0
Pendleton	Wind	2003	9	\$48,144	\$129,491	0.38	0
Pendleton	Wind	2003	11	\$0	\$4,980	0	0
Pendleton	Wind	2004	5	\$0	\$970	0	0
Pendleton	Wind	2004	6	\$0	\$3,234	0	0
Pendleton	Wind	2006	1	\$0	\$96,974	0	0
Pendleton	Wind	2006	7	\$0	\$15,152	0	0
Pendleton	Wind	2007	4	\$0	\$5,893	0	0
Pendleton	Wind	2008	2	\$0	\$709	0	0
Pendleton	Wind	2008	6	\$0	\$11,350	0	0
Pendleton	Wind	2010	6	\$0	\$2,241	0	0
Pendleton	Wind	2010	8	\$0	\$560	0	0
Pendleton	Wind	2011	4	\$0	\$543	0	0
Pendleton	Wind	2011	9	\$0	\$543	0	0
Pendleton	Wind	2012	6	\$0	\$2,661	0	0
Pendleton	Wind	2013	6	\$577	\$0	0	0
Pendleton	Wind	2013	7	\$131	\$0	0	0
Pendleton	Wind	2013	11	\$131	\$0	0	0
Pendleton	Wind	2014	7	\$258	\$0	0	0
<b>Totals</b>				<b>\$906,338</b>	<b>\$2,878,762</b>	<b>4</b>	<b>1</b>

TABLE 5.1.L SHELDUS HEAT DATA							
County Name	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Grant	Heat	1993	7	0	0	0.02	0
Hampshire	Heat	1993	7	0	0	0.02	0
Hardy	Heat	1993	7	0	0	0.02	0
Mineral	Heat	1993	7	0	0	0.02	0
Pendleton	Heat	1993	7	0	0	0.02	0
<b>Totals</b>				<b>0</b>	<b>0</b>	<b>0.1</b>	<b>0</b>



NCEI SEVERE SUMMER WEATHER DATA

Data is organized by date and event. Events that are repeated on the same day, most likely took place in different areas of the county.

TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA							
County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hampshire	7/20/1986	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hardy	7/20/1986	Thunderstorm Wind	N/A	0	0	\$0	\$0
Grant	7/11/1987	Thunderstorm Wind	N/A	0	0	\$0	\$0
Mineral	4/25/1988	Hail	0.75" Dia..	0	0	\$0	\$0
Hampshire	7/6/1989	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hardy	7/6/1989	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hampshire	7/7/1989	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hardy	7/26/1989	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hampshire	6/30/1990	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hardy	4/9/1991	Hail	0.75" Dia..	0	0	\$0	\$0
Pendleton	4/9/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Grant	4/9/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Mineral	4/9/1991	Thunderstorm Wind	67 MPH	0	1	\$0	\$0
Hardy	4/9/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hampshire	4/9/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Grant	5/6/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Mineral	5/6/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hardy	5/6/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hampshire	5/6/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Pendleton	5/13/1991	Hail	0.75" Dia..	0	0	\$0	\$0
Grant	7/7/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Grant	7/7/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Mineral	7/20/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Mineral	7/22/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hampshire	9/18/1991	Hail	0.88" Dia.	0	0	\$0	\$0
Hampshire	9/18/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hampshire	9/18/1991	Thunderstorm Wind	N/A	0	0	\$0	\$0
Grant	4/24/1992	Hail	0.75" Dia..	0	0	\$0	\$0
Hardy	6/18/1992	Thunderstorm Wind	N/A	0	3	\$0	\$0
Mineral	7/10/1992	Thunderstorm Wind	N/A	0	0	\$0	\$0
Grant	7/10/1992	Thunderstorm Wind	N/A	0	0	\$0	\$0
Mineral	7/10/1992	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hampshire	7/10/1992	Thunderstorm Wind	N/A	0	0	\$0	\$0
Hampshire	5/12/1993	Hail	0.75" Dia..	0	0	\$0	\$0
Hampshire	8/11/1993	Hail	1.75" Dia.	0	0	\$0	\$0
Hampshire	9/2/1993	Hail	1.75" Dia.	0	0	\$5,000	\$5,000
Hampshire	9/2/1993	Thunderstorm Wind	N/A	0	1	\$50,000	\$5,000
Hardy	9/3/1993	Hail	0.75" Dia..	0	0	\$500	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hardy	9/3/1993	Thunderstorm Wind	N/A	0	0	\$500	\$0
Hardy	9/8/1993	Hail	0.88" Dia.	0	0	\$0	\$0
Pendleton	6/16/1994	Thunderstorm Wind	N/A	0	0	\$0	\$0
Pendleton	6/29/1994	Hail	0.75" Dia..	0	0	\$0	\$0
Hardy	7/27/1995	Thunderstorm Wind	N/A	0	0	\$8,000	\$0
Mineral	7/27/1995	Thunderstorm Wind	N/A	0	0	\$3,000	\$0
Pendleton	5/4/1996	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hampshire	6/19/1996	Thunderstorm Wind	N/A	0	0	\$75,000	\$0
Hampshire	7/30/1996	Thunderstorm Wind	N/A	0	0	\$10,000	\$0
Hampshire	8/15/1996	Hail	0.75" Dia.	0	0	\$0	\$0
Hardy	8/16/1996	Hail	0.75" Dia.	0	0	\$0	\$0
Hampshire	8/16/1996	Hail	0.75" Dia.	0	0	\$0	\$0
Hardy	9/6/1996	High Wind	N/A	0	0	\$25,000	\$50,000
Hampshire	9/6/1996	High Wind	N/A	0	0	\$25,000	\$100,000
Pendleton	9/12/1996	Hail	0.75" Dia.	0	0	\$0	\$0
Hampshire	3/6/1997	Strong Wind	N/A	0	0	\$0	\$0
Hardy	3/31/1997	Strong Wind	N/A	0	0	\$5,000	\$0
Hampshire	3/31/1997	Strong Wind	N/A	0	0	\$0	\$0
Grant	6/18/1997	Tornado	F0	0	0	\$0	\$15,000
Hardy	6/18/1997	Thunderstorm Wind	N/A	0	0	\$2,000	\$0
Mineral	7/28/1997	Thunderstorm Wind	N/A	0	0	\$5,000	\$0
Mineral	8/17/1997	Thunderstorm Wind	N/A	0	0	\$12,000	\$0
Hampshire	8/17/1997	Thunderstorm Wind	52 MPH	0	0	\$5,000	\$0
Hampshire	2/24/1998	Strong Wind	N/A	0	0	\$0	\$0
Hardy	2/24/1998	Strong Wind	N/A	0	0	\$0	\$0
Mineral	6/2/1998	Tornado	F1	0	0	\$5,000	\$10,000
Hampshire	6/2/1998	Tornado	F1	0	0	\$20,000	\$100,000
Hampshire	6/2/1998	Hail	1.75" Dia.	0	0	\$5,000	\$50,000
Mineral	6/2/1998	Tornado	F2	0	0	\$150,000	\$100,000
Mineral	6/2/1998	Hail	1.25" Dia.	0	0	\$0	\$3,000
Hampshire	6/2/1998	Tornado	F1	0	5	\$100,000	\$50,000
Hardy	6/13/1998	Thunderstorm Wind	N/A	0	0	\$5,000	\$0
Hardy	6/15/1998	Thunderstorm Wind	N/A	0	0	\$5,000	\$0
Pendleton	6/27/1998	Tornado	F0	0	0	\$8,000	\$0
Pendleton	6/28/1998	Thunderstorm Wind	N/A	0	0	\$2,000	\$0
Grant	8/9/1998	Tornado	F0	0	0	\$15,000	\$0
Grant	8/9/1998	Thunderstorm Wind	N/A	0	0	\$3,000	\$0
Grant	4/11/1999	Hail	1" Dia.	0	0	\$0	\$0
Mineral	4/23/1999	Hail	0.88" Dia.	0	0	\$0	\$0
Mineral	4/23/1999	Hail	0.75" Dia.	0	0	\$0	\$0
Hampshire	4/23/1999	Hail	1.5" Dia.	0	0	\$0	\$0
Hampshire	4/23/1999	Hail	1.5" Dia.	0	0	\$0	\$0
Hampshire	4/23/1999	Hail	1.25" Dia.	0	0	\$0	\$0
Pendleton	4/23/1999	Thunderstorm Wind	N/A	0	0	\$500	\$0
Hampshire	4/23/1999	Thunderstorm Wind	N/A	0	0	\$500	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hampshire	4/23/1999	Hail	2.75" Dia.	0	0	\$0	\$0
Hampshire	5/22/1999	Thunderstorm Wind	N/A	0	0	\$15,000	\$0
Hampshire	6/7/1999	Heat	N/A	0	0	\$0	\$0
Hardy	6/7/1999	Heat	N/A	0	0	\$0	\$0
Hampshire	7/4/1999	Heat	N/A	0	0	\$0	\$0
Hardy	7/4/1999	Heat	N/A	0	0	\$0	\$0
Hardy	9/5/1999	Heavy Rain	N/A	0	0	\$0	\$0
Hampshire	9/5/1999	Heavy Rain	N/A	0	0	\$0	\$0
Grant	9/29/1999	Thunderstorm Wind	N/A	0	0	\$5,000	\$0
Hampshire	9/29/1999	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Hardy	1/2/2000	Excessive Heat	N/A	0	0	\$0	\$0
Hampshire	1/2/2000	Excessive Heat	N/A	0	0	\$0	\$0
Hampshire	1/13/2000	High Wind	52 MPH	0	0	\$0	\$0
Hardy	3/8/2000	Heat	N/A	0	0	\$0	\$0
Hampshire	3/8/2000	Heat	N/A	0	0	\$0	\$0
Grant	4/17/2000	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	5/6/2000	Heat	N/A	0	0	\$0	\$0
Hampshire	5/6/2000	Heat	N/A	0	0	\$0	\$0
Hampshire	5/10/2000	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	5/10/2000	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	5/10/2000	Hail	1" Dia.	0	0	\$0	\$0
Mineral	6/2/2000	Thunderstorm Wind	N/A	0	0	\$2,000	\$0
Hampshire	6/10/2000	Heat	N/A	0	0	\$0	\$0
Hardy	6/10/2000	Heat	N/A	0	0	\$0	\$0
Hardy	6/15/2000	Thunderstorm Wind	N/A	0	0	\$1,000	\$0
Hampshire	6/15/2000	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	6/15/2000	Thunderstorm Wind	N/A	0	0	\$10,000	\$0
Hampshire	6/25/2000	Heat	N/A	0	0	\$0	\$0
Hardy	6/25/2000	Heat	N/A	0	0	\$0	\$0
Hardy	7/13/2000	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	7/13/2000	Hail	0.75" Dia.	0	0	\$0	\$0
Hardy	7/13/2000	Thunderstorm Wind	N/A	0	0	\$10,000	\$0
Hardy	7/28/2000	Thunderstorm Wind	N/A	0	0	\$1,000	\$0
Hampshire	7/28/2000	Thunderstorm Wind	N/A	0	0	\$1,000	\$0
Grant	7/31/2000	Thunderstorm Wind	N/A	0	0	\$10,000	\$0
Hardy	8/2/2000	Heavy Rain	N/A	0	0	\$0	\$0
Hampshire	8/3/2000	Heavy Rain	N/A	0	0	\$0	\$0
Hampshire	8/6/2000	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	8/6/2000	Heavy Rain	N/A	0	0	\$0	\$0
Grant	8/9/2000	Thunderstorm Wind	N/A	0	0	\$10,000	\$0
Mineral	8/9/2000	Thunderstorm Wind	N/A	0	0	\$2,000	\$0
Pendleton	8/9/2000	Thunderstorm Wind	N/A	0	0	\$5,000	\$0
Hardy	8/9/2000	Thunderstorm Wind	N/A	0	0	\$10,000	\$0
Hampshire	8/9/2000	Thunderstorm Wind	N/A	0	0	\$5,000	\$0
Pendleton	8/18/2000	Heavy Rain	N/A	0	0	\$0	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hampshire	9/1/2000	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	9/3/2000	Heavy Rain	N/A	0	0	\$0	\$0
Mineral	9/24/2000	Heavy Rain	N/A	0	0	\$0	\$0
Hampshire	9/24/2000	Heavy Rain	N/A	0	0	\$0	\$0
Pendleton	9/24/2000	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	9/24/2000	Heavy Rain	N/A	0	0	\$0	\$0
Grant	9/24/2000	Heavy Rain	N/A	0	0	\$0	\$0
Mineral	11/9/2000	Thunderstorm Wind	N/A	0	0	\$500	\$0
Mineral	11/9/2000	Thunderstorm Wind	53 MPH	0	0	\$0	\$0
Hardy	12/12/2000	Strong Wind	N/A	0	0	\$0	\$0
Hampshire	12/12/2000	Strong Wind	N/A	0	0	\$0	\$0
Hampshire	12/17/2000	Strong Wind	N/A	0	0	\$0	\$0
Hampshire	1/27/2001	Strong Wind	N/A	0	0	\$0	\$0
Hardy	1/27/2001	Strong Wind	N/A	0	0	\$0	\$0
Hardy	2/9/2001	Strong Wind	N/A	0	0	\$0	\$0
Hampshire	2/9/2001	Strong Wind	N/A	0	0	\$0	\$0
Hardy	3/6/2001	Strong Wind	N/A	0	0	\$0	\$0
Hampshire	3/6/2001	Strong Wind	N/A	0	0	\$0	\$0
Mineral	3/13/2001	Thunderstorm Wind	57 MPH	0	0	\$0	\$0
Hardy	3/21/2001	Heavy Rain	N/A	0	0	\$0	\$0
Mineral	4/9/2001	Hail	1" Dia.	0	0	\$0	\$0
Mineral	4/9/2001	Thunderstorm Wind	N/A	0	0	\$10,000	\$0
Grant	5/18/2001	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	5/18/2001	Heavy Rain	N/A	0	0	\$0	\$0
Hampshire	6/7/2001	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	6/12/2001	Heat	N/A	0	0	\$0	\$0
Hampshire	6/12/2001	Heat	N/A	0	0	\$0	\$0
Hardy	6/20/2001	Heavy Rain	N/A	0	0	\$0	\$0
Hampshire	6/20/2001	Hail	0.88" Dia.	0	0	\$0	\$0
Hardy	6/21/2001	Heavy Rain	N/A	0	0	\$0	\$0
Pendleton	6/22/2001	Heavy Rain	N/A	0	0	\$0	\$0
Hampshire	6/22/2001	Heavy Rain	N/A	0	0	\$0	\$0
Grant	6/22/2001	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	6/27/2001	Heat	N/A	0	0	\$0	\$0
Hampshire	6/27/2001	Heat	N/A	0	0	\$0	\$0
Mineral	7/10/2001	Thunderstorm Wind	N/A	0	0	\$500	\$0
Hampshire	7/10/2001	Thunderstorm Wind	N/A	0	0	\$1,000	\$0
Hardy	7/29/2001	Heavy Rain	N/A	0	0	\$0	\$0
Pendleton	7/29/2001	Heavy Rain	N/A	0	0	\$0	\$0
Grant	7/29/2001	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	8/6/2001	Heat	N/A	0	0	\$0	\$0
Hampshire	8/6/2001	Heat	N/A	0	0	\$0	\$0
Hardy	8/19/2001	Thunderstorm Wind	N/A	0	0	\$500	\$0
Hardy	2/1/2002	Strong Wind	N/A	0	0	\$0	\$0
Hampshire	2/1/2002	Strong Wind	N/A	0	0	\$0	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hardy	3/9/2002	Strong Wind	N/A	0	0	\$0	\$0
Hampshire	3/9/2002	Strong Wind	N/A	0	0	\$0	\$0
Hardy	3/21/2002	Strong Wind	N/A	0	0	\$0	\$0
Hampshire	3/21/2002	Strong Wind	N/A	0	0	\$0	\$0
Grant	4/28/2002	Thunderstorm Wind	N/A	0	0	\$500	\$0
Mineral	5/13/2002	Thunderstorm Wind	N/A	0	0	\$1,000	\$0
Hampshire	5/14/2002	Thunderstorm Wind	N/A	0	0	\$5,000	\$0
Hardy	5/14/2002	Thunderstorm Wind	N/A	0	0	\$500	\$0
Grant	5/14/2002	Thunderstorm Wind	N/A	0	0	\$2,000	\$0
Mineral	5/14/2002	Thunderstorm Wind	N/A	0	0	\$5,000	\$0
Mineral	5/14/2002	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hardy	5/26/2002	Heavy Rain	N/A	0	0	\$0	\$0
Hampshire	5/26/2002	Hail	1.75" Dia.	0	0	\$0	\$0
Hampshire	5/26/2002	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	5/26/2002	Hail	1" Dia.	0	0	\$0	\$0
Grant	5/27/2002	Heavy Rain	N/A	0	0	\$0	\$0
Grant	5/29/2002	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	6/4/2002	Hail	1.75" Dia.	0	0	\$0	\$0
Hardy	7/2/2002	Heat	N/A	0	0	\$0	\$0
Hampshire	7/2/2002	Heat	N/A	0	0	\$0	\$0
Pendleton	7/2/2002	Hail	1" Dia.	0	0	\$0	\$0
Hardy	7/2/2002	Hail	0.75" Dia.	0	0	\$0	\$0
Hampshire	7/9/2002	Thunderstorm Wind	N/A	0	0	\$2,000	\$0
Hardy	7/28/2002	Heat	N/A	0	0	\$0	\$0
Hampshire	7/28/2002	Heat	N/A	0	0	\$0	\$0
Hardy	8/1/2002	Heat	N/A	0	0	\$0	\$0
Hampshire	8/1/2002	Heat	N/A	0	0	\$0	\$0
Mineral	8/3/2002	Heavy Rain	N/A	0	0	\$0	\$0
Mineral	8/3/2002	Thunderstorm Wind	N/A	0	0	\$5,000	\$0
Mineral	8/3/2002	Hail	1.75" Dia.	0	0	\$0	\$0
Pendleton	8/3/2002	Thunderstorm Wind	N/A	0	0	\$500	\$0
Hardy	8/3/2002	Thunderstorm Wind	N/A	0	0	\$2,000	\$0
Hampshire	8/12/2002	Heat	N/A	0	0	\$0	\$0
Hardy	8/12/2002	Heat	N/A	0	0	\$0	\$0
Hardy	8/22/2002	Heat	N/A	0	0	\$0	\$0
Hampshire	8/22/2002	Heat	N/A	0	0	\$0	\$0
Hardy	1/8/2003	High Wind	35 MPH	0	0	\$0	\$0
Hampshire	1/8/2003	High Wind	35 MPH	0	0	\$0	\$0
Pendleton	2/22/2003	Heavy Rain	N/A	0	0	\$0	\$0
Mineral	2/22/2003	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	2/23/2003	Strong Wind	30 MPH	0	0	\$100	\$0
Hampshire	2/23/2003	Strong Wind	30 MPH	0	0	\$100	\$0
Pendleton	3/20/2003	Heavy Rain	N/A	0	0	\$0	\$0
Mineral	3/20/2003	Heavy Rain	N/A	0	0	\$0	\$0
Grant	3/20/2003	Heavy Rain	N/A	0	0	\$0	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hardy	5/7/2003	Heavy Rain	N/A	0	0	\$0	\$0
Pendleton	5/10/2003	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	6/12/2003	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Mineral	7/8/2003	Thunderstorm Wind	50 MPH	0	0	\$500	\$0
Mineral	7/12/2003	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hampshire	7/12/2003	Thunderstorm Wind	50 MPH	0	0	\$3,000	\$0
Pendleton	7/14/2003	Hail	1" Dia.	0	0	\$0	\$0
Grant	7/14/2003	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Grant	7/14/2003	Hail	0.75" Dia.	0	0	\$0	\$0
Grant	7/14/2003	Thunderstorm Wind	50 MPH	0	0	\$2,000	\$0
Hardy	7/14/2003	Hail	0.75" Dia.	0	0	\$0	\$0
Mineral	7/14/2003	Hail	0.75" Dia.	0	0	\$0	\$0
Mineral	7/14/2003	Hail	0.75" Dia.	0	0	\$0	\$0
Mineral	7/14/2003	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Mineral	7/14/2003	Hail	0.75" Dia.	0	0	\$0	\$0
Mineral	8/3/2003	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Grant	8/9/2003	Heavy Rain	N/A	0	0	\$0	\$0
Grant	8/26/2003	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hardy	8/26/2003	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Mineral	8/27/2003	Thunderstorm Wind	50 MPH	0	0	\$2,000	\$0
Hampshire	8/27/2003	Lightning	N/A	0	0	\$0	\$0
Hardy	9/18/2003	High Wind	50 MPH	0	0	\$50,000	\$50,000
Hampshire	9/18/2003	High Wind	50 MPH	0	0	\$150,000	\$50,000
Hampshire	10/15/2003	Strong Wind	43 MPH	0	0	\$2,000	\$0
Hardy	10/15/2003	Strong Wind	43 MPH	0	0	\$2,000	\$0
Hampshire	11/13/2003	Strong Wind	43 MPH	0	0	\$5,000	\$0
Hardy	11/13/2003	Strong Wind	46 MHP	0	0	\$3,000	\$0
Mineral	11/19/2003	Thunderstorm Wind	59 MPH	0	0	\$0	\$0
Hampshire	4/26/2004	Heavy Rain	N/A	0	0	\$0	\$0
Grant	5/7/2004	Thunderstorm Wind	55 MPH	0	0	\$3,000	\$0
Mineral	5/7/2004	Thunderstorm Wind	55 MPH	0	0	\$5,000	\$0
Hampshire	5/7/2004	Thunderstorm Wind	53 MPH	0	0	\$5,000	\$0
Hampshire	5/18/2004	Lightning	N/A	0	0	\$0	\$0
Grant	5/21/2004	Thunderstorm Wind	55 MPH	0	0	\$2,000	\$0
Mineral	5/21/2004	Thunderstorm Wind	55 MPH	0	0	\$7,000	\$0
Grant	5/21/2004	Thunderstorm Wind	53 MPH	0	0	\$2,000	\$0
Mineral	5/21/2004	Thunderstorm Wind	55 MPH	0	0	\$3,000	\$0
Pendleton	5/21/2004	Thunderstorm Wind	50 MPH	0	0	\$1,500	\$0
Hampshire	5/21/2004	Thunderstorm Wind	50 MPH	0	0	\$2,000	\$0
Hampshire	5/21/2004	Thunderstorm Wind	55 MPH	0	0	\$2,000	\$0
Hardy	5/21/2004	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Pendleton	6/1/2004	Thunderstorm Wind	60 MPH	0	0	\$5,000	\$0
Mineral	8/4/2004	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hardy	12/1/2004	High Wind	50 MPH	0	0	\$0	\$0
Hampshire	12/1/2004	High Wind	50 MPH	0	0	\$0	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hampshire	4/3/2005	High Wind	50 MPH	0	0	\$0	\$0
Hardy	4/3/2005	High Wind	50 MPH	0	0	\$0	\$0
Pendleton	6/28/2005	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Pendleton	7/7/2005	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	7/7/2005	Heavy Rain	N/A	0	0	\$0	\$0
Hardy	1/14/2006	High Wind	50 MPH	0	0	\$75,000	\$0
Hampshire	1/14/2006	High Wind	50 MPH	0	0	\$80,000	\$0
Hampshire	4/3/2006	Hail	0.88" Dia.	0	0	\$0	\$0
Grant	4/7/2006	Thunderstorm Wind	53 MPH	0	0	\$0	\$0
Mineral	6/1/2006	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Grant	7/18/2006	Hail	0.75" Dia.	0	0	\$0	\$0
Grant	7/18/2006	Hail	1.75" Dia.	0	0	\$0	\$0
Grant	7/18/2006	Hail	0.88" Dia.	0	0	\$0	\$0
Pendleton	7/18/2006	Thunderstorm Wind	50 MPH	0	0	\$10,000	\$0
Hampshire	7/18/2006	Hail	1" Dia.	0	0	\$0	\$0
Pendleton	7/20/2006	Thunderstorm Wind	50 MPH	0	0	\$15,000	\$0
Hampshire	7/20/2006	Thunderstorm Wind	54 MPH	0	0	\$50,000	\$0
Hampshire	9/28/2006	Thunderstorm Wind	50 MPH	0	0	\$20,000	\$0
Hampshire	10/28/2006	Strong Wind	40 MPH	0	0	\$14,000	\$0
Hardy	2/22/2007	Strong Wind	45 MPH	0	0	\$10,000	\$0
Hampshire	6/1/2007	Hail	0.88" Dia.	0	0	\$0	\$0
Pendleton	6/8/2007	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Grant	6/8/2007	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	6/12/2007	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hampshire	6/12/2007	Hail	1.5" Dia.	0	0	\$0	\$0
Mineral	6/12/2007	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hardy	6/12/2007	Thunderstorm Wind	50 MPH	0	0	\$2,000	\$0
Grant	6/12/2007	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Mineral	6/13/2007	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Mineral	6/13/2007	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	6/19/2007	Hail	1" Dia.	0	0	\$0	\$0
Grant	6/21/2007	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Grant	6/27/2007	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Mineral	7/27/2007	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hampshire	7/28/2007	Thunderstorm Wind	50 MPH	0	0	\$2,000	\$0
Hardy	8/9/2007	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Grant	9/27/2007	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hampshire	9/27/2007	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Mineral	12/16/2007	High Wind	50 MPH	0	0	\$3,000	\$0
Mineral	12/16/2007	High Wind	50 MPH	0	0	\$3,000	\$0
Hampshire	12/16/2007	High Wind	50 MPH	0	0	\$5,000	\$0
Hardy	12/16/2007	High Wind	50 MPH	0	0	\$0	\$0
Grant	12/16/2007	High Wind	53 MPH	0	0	\$0	\$0
Grant	12/16/2007	High Wind	53 MPH	0	0	\$0	\$0
Mineral	1/30/2008	High Wind	51 MPH	0	0	\$3,000	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Mineral	1/30/2008	High Wind	51 MPH	0	0	\$3,000	\$0
Grant	2/10/2008	High Wind	50 MPH	0	0	\$5,000	\$0
Mineral	2/10/2008	High Wind	57 MPH	0	0	\$5,000	\$0
Grant	2/10/2008	High Wind	50 MPH	0	0	\$5,000	\$0
Mineral	2/10/2008	High Wind	57 MPH	0	0	\$5,000	\$0
Hampshire	2/10/2008	High Wind	50 MPH	0	0	\$10,000	\$0
Hardy	2/10/2008	High Wind	53 MPH	0	0	\$0	\$0
Hampshire	4/11/2008	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hampshire	4/11/2008	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hampshire	4/11/2008	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hampshire	4/26/2008	Hail	0.75" Dia.	0	0	\$0	\$0
Pendleton	6/4/2008	Thunderstorm Wind	50 MPH	0	0	\$15,000	\$0
Pendleton	6/4/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Grant	6/4/2008	Thunderstorm Wind	50 MPH	0	0	\$10,000	\$0
Grant	6/4/2008	Thunderstorm Wind	50 MPH	0	0	\$3,000	\$0
Grant	6/4/2008	Thunderstorm Wind	50 MPH	0	0	\$3,000	\$0
Hampshire	6/4/2008	Thunderstorm Wind	50 MPH	0	0	\$50,000	\$0
Hampshire	6/4/2008	Thunderstorm Wind	50 MPH	0	0	\$3,000	\$0
Hardy	6/10/2008	Hail	1.75" Dia.	0	0	\$0	\$0
Grant	6/10/2008	Hail	0.75" Dia.	0	0	\$0	\$0
Pendleton	6/10/2008	Hail	0.88" Dia.	0	0	\$0	\$0
Mineral	6/10/2008	Hail	0.88" Dia.	0	0	\$0	\$0
Hardy	6/10/2008	Thunderstorm Wind	50 MPH	0	0	\$2,000	\$0
Hardy	6/10/2008	Hail	0.75" Dia.	0	0	\$0	\$0
Hampshire	6/10/2008	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	6/13/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hampshire	6/13/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hampshire	6/13/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hampshire	6/13/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hampshire	6/13/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hardy	6/14/2008	Thunderstorm Wind	50 MPH	0	0	\$3,000	\$0
Grant	6/16/2008	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hampshire	6/16/2008	Thunderstorm Wind	50 MPH	0	0	\$4,000	\$0
Hampshire	6/22/2008	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Mineral	6/22/2008	Hail	1.75" Dia.	0	0	\$20,000	\$0
Mineral	6/28/2008	Thunderstorm Wind	50 MPH	0	0	\$4,000	\$0
Mineral	6/28/2008	Thunderstorm Wind	50 MPH	0	0	\$20,000	\$0
Hampshire	6/28/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hampshire	6/28/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hampshire	6/28/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hampshire	6/28/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hampshire	6/28/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hampshire	6/28/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Grant	7/5/2008	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hardy	7/7/2008	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0





TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hardy	7/7/2008	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Mineral	7/20/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Mineral	7/20/2008	Thunderstorm Wind	50 MPH	0	0	\$4,000	\$0
Hampshire	7/20/2008	Thunderstorm Wind	50 MPH	0	0	\$5,000	\$0
Hardy	7/20/2008	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Grant	12/29/2008	High Wind	51 MPH	0	0	\$0	\$0
Grant	12/30/2008	High Wind	53 MPH	0	0	\$0	\$0
Grant	2/11/2009	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Grant	2/11/2009	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hardy	2/11/2009	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Mineral	2/11/2009	Thunderstorm Wind	53 MPH	0	0	\$0	\$0
Mineral	2/12/2009	High Wind	50 MPH	0	0	\$0	\$0
Hampshire	2/12/2009	High Wind	50 MPH	0	0	\$0	\$0
Mineral	2/12/2009	High Wind	62 MPH	0	0	\$0	\$0
Grant	2/12/2009	High Wind	50 MPH	0	0	\$0	\$0
Grant	2/12/2009	High Wind	51 MPH	0	0	\$0	\$0
Mineral	2/12/2009	High Wind	58 MPH	0	0	\$0	\$0
Grant	5/28/2009	Hail	0.88" Dia.	0	0	\$0	\$0
Hardy	6/3/2009	Hail	0.75" Dia.	0	0	\$0	\$0
Mineral	6/9/2009	Hail	0.75" Dia.	0	0	\$0	\$0
Hampshire	6/9/2009	Hail	0.75" Dia.	0	0	\$0	\$0
Mineral	6/9/2009	Hail	0.75" Dia.	0	0	\$0	\$0
Hampshire	6/9/2009	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	6/9/2009	Hail	1.75" Dia.	0	0	\$0	\$0
Hardy	6/9/2009	Hail	0.75" Dia.	0	0	\$0	\$0
Pendleton	6/9/2009	Hail	0.75" Dia.	0	0	\$0	\$0
Hampshire	6/10/2009	Hail	0.88" Dia.	0	0	\$0	\$0
Hampshire	6/17/2009	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	6/17/2009	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	6/17/2009	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Pendleton	7/21/2009	Hail	0.75" Dia.	0	0	\$0	\$0
Pendleton	7/21/2009	Hail	0.88" Dia.	0	0	\$0	\$0
Pendleton	7/21/2009	Hail	0.75" Dia.	0	0	\$0	\$0
Pendleton	7/21/2009	Thunderstorm Wind	60 MPH	0	0	\$0	\$0
Hardy	7/21/2009	Hail	0.75" Dia.	0	0	\$0	\$0
Grant	2/26/2010	High Wind	58 MPH	0	0	\$0	\$0
Mineral	3/22/2010	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	4/25/2010	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	4/25/2010	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	4/25/2010	Hail	1" Dia.	0	0	\$0	\$0
Mineral	5/14/2010	Hail	1" Dia.	0	0	\$0	\$0
Mineral	5/14/2010	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Pendleton	5/27/2010	Hail	1" Dia.	0	0	\$0	\$0
Hardy	5/27/2010	Hail	1" Dia.	0	0	\$0	\$0
Hardy	5/28/2010	Thunderstorm Wind	50 MPH	0	0	\$3,000	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hampshire	6/12/2010	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Mineral	6/24/2010	Thunderstorm Wind	50 MPH	0	0	\$2,000	\$0
Hardy	6/24/2010	Hail	1" Dia.	0	0	\$1,000	\$0
Hampshire	6/24/2010	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Pendleton	6/24/2010	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Pendleton	6/24/2010	Thunderstorm Wind	50 MPH	0	0	\$3,000	\$0
Pendleton	7/17/2010	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Hampshire	7/25/2010	Thunderstorm Wind	57 MPH	0	0	\$2,000	\$0
Hampshire	7/25/2010	Thunderstorm Wind	57 MPH	0	0	\$3,000	\$0
Mineral	8/4/2010	Thunderstorm Wind	56 MPH	0	0	\$3,000	\$0
Grant	8/4/2010	Thunderstorm Wind	61 MPH	0	0	\$7,000	\$0
Mineral	8/4/2010	Thunderstorm Wind	56 MPH	0	0	\$7,000	\$0
Mineral	8/4/2010	Thunderstorm Wind	51 MPH	0	0	\$0	\$0
Hardy	8/4/2010	Thunderstorm Wind	52 MPH	0	0	\$7,000	\$0
Pendleton	8/4/2010	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hampshire	8/4/2010	Thunderstorm Wind	65 MPH	0	0	\$3,000	\$0
Hampshire	8/4/2010	Thunderstorm Wind	70 MPH	0	0	\$50,000	\$0
Hampshire	8/4/2010	Thunderstorm Wind	61 MPH	0	0	\$3,000	\$0
Hampshire	9/16/2010	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Mineral	12/1/2010	High Wind	54 MPH	0	0	\$2,000	\$0
Pendleton	2/12/2011	High Wind	56 MPH	0	0	\$0	\$0
Pendleton	2/12/2011	High Wind	56 MPH	0	0	\$0	\$0
Grant	2/12/2011	High Wind	56 MPH	0	0	\$0	\$0
Mineral	2/19/2011	High Wind	51 MPH	0	0	\$0	\$0
Mineral	2/25/2011	High Wind	56 MPH	0	0	\$0	\$0
Mineral	2/25/2011	High Wind	56 MPH	0	0	\$0	\$0
Grant	2/25/2011	High Wind	53 MPH	0	0	\$0	\$0
Grant	2/25/2011	High Wind	52 MPH	0	0	\$0	\$0
Pendleton	2/25/2011	High Wind	50 MPH	0	0	\$0	\$0
Pendleton	2/25/2011	High Wind	50 MPH	0	0	\$0	\$0
Pendleton	2/28/2011	Thunderstorm Wind	61 MPH	0	0	\$0	\$0
Grant	3/23/2011	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Hampshire	3/23/2011	Thunderstorm Wind	52 MPH	0	0	\$2,000	\$0
Hardy	4/16/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Grant	4/16/2011	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Grant	4/16/2011	Hail	1.5" Dia.	0	0	\$0	\$0
Grant	4/16/2011	Thunderstorm Wind	61 MPH	0	0	\$1,000	\$0
Grant	4/16/2011	Hail	1.5" Dia.	0	0	\$0	\$0
Grant	4/16/2011	Hail	1" Dia.	0	0	\$0	\$0
Grant	4/16/2011	Thunderstorm Wind	61 MPH	0	0	\$1,000	\$0
Grant	4/16/2011	Thunderstorm Wind	61 MPH	0	0	\$1,000	\$0
Pendleton	4/16/2011	Hail	1" Dia.	0	0	\$0	\$0
Pendleton	4/16/2011	Hail	1" Dia.	0	0	\$0	\$0
Pendleton	4/16/2011	Hail	1.25" Dia.	0	0	\$0	\$0
Pendleton	4/16/2011	Hail	1" Dia.	0	0	\$0	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Pendleton	4/16/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hampshire	4/16/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Pendleton	4/16/2011	Hail	1.5" Dia.	0	0	\$0	\$0
Grant	4/16/2011	Thunderstorm Wind	56 MPH	0	0	\$0	\$0
Grant	4/16/2011	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Grant	4/16/2011	Thunderstorm Wind	56 MPH	0	0	\$2,000	\$0
Grant	4/26/2011	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hardy	4/26/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Pendleton	4/26/2011	Hail	1" Dia.	0	0	\$0	\$0
Grant	4/26/2011	Thunderstorm Wind	56 MPH	0	0	\$1,000	\$0
Grant	4/26/2011	Hail	1" Dia.	0	0	\$0	\$0
Grant	4/26/2011	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hardy	4/26/2011	Hail	1" Dia.	0	0	\$0	\$0
Hardy	4/26/2011	Thunderstorm Wind	56 MPH	0	0	\$1,000	\$0
Grant	4/27/2011	Thunderstorm Wind	50 MPH	0	0	\$2,000	\$0
Grant	4/27/2011	Thunderstorm Wind	50 MPH	0	0	\$2,000	\$0
Hampshire	4/28/2011	Thunderstorm Wind	56 MPH	0	0	\$1,000	\$0
Hardy	4/28/2011	Thunderstorm Wind	61 MPH	0	0	\$3,000	\$0
Hardy	4/28/2011	Thunderstorm Wind	61 MPH	0	0	\$2,000	\$0
Pendleton	5/13/2011	Hail	1" Dia.	0	0	\$0	\$0
Mineral	5/26/2011	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Mineral	5/26/2011	Hail	1" Dia.	0	0	\$0	\$0
Mineral	5/26/2011	Hail	1.5" Dia.	0	0	\$0	\$0
Mineral	5/26/2011	Hail	1" Dia.	0	0	\$0	\$0
Mineral	5/26/2011	Hail	1" Dia.	0	0	\$0	\$0
Hardy	5/26/2011	Hail	1" Dia.	0	0	\$0	\$0
Hardy	5/26/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Pendleton	5/26/2011	Hail	1" Dia.	0	0	\$0	\$0
Grant	5/26/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hardy	5/26/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hardy	5/26/2011	Thunderstorm Wind	56 MPH	0	0	\$5,000	\$0
Hampshire	6/9/2011	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	6/9/2011	Thunderstorm Wind	61 MPH	0	0	\$5,000	\$0
Hampshire	6/9/2011	Thunderstorm Wind	56 MPH	0	0	\$10,000	\$0
Hardy	6/18/2011	Thunderstorm Wind	52 MPH	0	0	\$500	\$0
Hampshire	7/7/2011	Thunderstorm Wind	45 MPH	0	0	\$1,000	\$0
Hampshire	7/11/2011	Thunderstorm Wind	45 MPH	0	0	\$1,000	\$0
Mineral	7/21/2011	Excessive Heat	N/A	0	0	\$0	\$0
Mineral	7/21/2011	Heat	N/A	0	0	\$0	\$0
Hampshire	7/21/2011	Heat	N/A	0	0	\$0	\$0
Hardy	7/22/2011	Heat	N/A	0	0	\$0	\$0
Hampshire	7/22/2011	Heat	N/A	0	0	\$0	\$0
Mineral	7/22/2011	Heat	N/A	0	0	\$0	\$0
Grant	7/22/2011	Heat	N/A	0	0	\$0	\$0
Hampshire	7/22/2011	Thunderstorm Wind	52 MPH	0	0	\$3,000	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hampshire	7/22/2011	Thunderstorm Wind	56 MPH	0	0	\$1,000	\$0
Hampshire	7/22/2011	Thunderstorm Wind	52 MPH	0	0	\$3,000	\$0
Grant	7/22/2011	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Grant	7/22/2011	Thunderstorm Wind	52 MPH	0	0	\$3,000	\$0
Hardy	7/22/2011	Thunderstorm Wind	50 MPH	0	0	\$2,000	\$0
Hampshire	8/1/2011	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hampshire	8/1/2011	Hail	1.25" Dia.	0	0	\$0	\$0
Pendleton	9/3/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hardy	9/14/2011	Hail	1" Dia.	0	0	\$0	\$0
Hardy	9/14/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hardy	9/14/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hampshire	9/27/2011	Hail	1.5" Dia.	0	0	\$0	\$0
Hampshire	9/27/2011	Hail	1.25" Dia.	0	0	\$0	\$0
Hampshire	9/27/2011	Hail	1.5" Dia.	0	0	\$0	\$0
Hampshire	9/27/2011	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hardy	3/28/2012	Hail	1" Dia.	0	0	\$0	\$0
Pendleton	3/28/2012	Hail	1" Dia.	0	0	\$0	\$0
Mineral	5/29/2012	Thunderstorm Wind	52 MPH	0	0	\$2,000	\$0
Hampshire	6/1/2012	Thunderstorm Wind	52 MPH	0	0	\$500	\$0
Grant	6/29/2012	Thunderstorm Wind	61 MPH	0	0	\$2,000	\$0
Pendleton	6/29/2012	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Pendleton	6/29/2012	Thunderstorm Wind	70 MPH	0	0	\$5,000	\$0
Grant	6/29/2012	Thunderstorm Wind	61 MPH	0	0	\$10,000	\$0
Mineral	6/29/2012	Thunderstorm Wind	57 MPH	0	0	\$5,000	\$0
Mineral	6/29/2012	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Hardy	6/29/2012	Thunderstorm Wind	61 MPH	0	0	\$5,000	\$0
Mineral	6/29/2012	Thunderstorm Wind	61 MPH	0	0	\$2,000	\$0
Mineral	6/29/2012	Thunderstorm Wind	57 MPH	0	0	\$1,000	\$0
Hampshire	6/29/2012	Thunderstorm Wind	57 MPH	0	0	\$5,000	\$0
Hampshire	6/29/2012	Thunderstorm Wind	52 MPH	0	0	\$25,000	\$0
Hampshire	7/4/2012	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hampshire	7/4/2012	Thunderstorm Wind	56 MPH	0	0	\$1,000	\$0
Hardy	7/4/2012	Thunderstorm Wind	61 MPH	0	0	\$0	\$0
Hardy	7/4/2012	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Mineral	7/7/2012	Heat	N/A	0	0	\$0	\$0
Grant	7/7/2012	Heat	N/A	0	0	\$0	\$0
Hardy	7/7/2012	Heat	N/A	0	0	\$0	\$0
Hampshire	7/7/2012	Heat	N/A	0	0	\$0	\$0
Hampshire	7/8/2012	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hardy	7/8/2012	Thunderstorm Wind	56 MPH	0	0	\$1,000	\$0
Hardy	7/18/2012	Thunderstorm Wind	52 MPH	0	0	\$2,000	\$0
Hardy	7/18/2012	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hardy	7/18/2012	Hail	1" Dia.	0	0	\$0	\$0
Hardy	7/18/2012	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Pendleton	7/18/2012	Thunderstorm Wind	52 MPH	0	0	\$0	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Pendleton	7/18/2012	Thunderstorm Wind	56 MPH	0	0	\$0	\$0
Mineral	7/24/2012	Thunderstorm Wind	56 MPH	0	0	\$1,000	\$0
Mineral	7/24/2012	Thunderstorm Wind	56 MPH	0	0	\$1,000	\$0
Grant	7/24/2012	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hardy	7/24/2012	Thunderstorm Wind	61 MPH	0	0	\$2,000	\$0
Hardy	7/24/2012	Thunderstorm Wind	61 MPH	0	0	\$2,000	\$0
Mineral	7/26/2012	Thunderstorm Wind	52 MPH	0	0	\$2,000	\$0
Grant	7/31/2012	Hail	1" Dia.	0	0	\$0	\$0
Grant	7/31/2012	Hail	1" Dia.	0	0	\$0	\$0
Hardy	8/1/2012	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Grant	8/9/2012	Thunderstorm Wind	52 MPH	0	0	\$500	\$0
Hardy	8/14/2012	Thunderstorm Wind	52 MPH	0	0	\$500	\$0
Hardy	9/27/2012	Hail	1.75" Dia.	0	0	\$0	\$0
Pendleton	10/29/2012	High Wind	50 MPH	0	0	\$0	\$0
Grant	10/29/2012	High Wind	50 MPH	0	0	\$10,000	\$10,000
Grant	10/29/2012	High Wind	50 MPH	0	0	\$0	\$10,000
Hampshire	10/29/2012	High Wind	50 MPH	0	0	\$2,000	\$0
Hardy	10/29/2012	High Wind	50 MPH	0	0	\$0	\$0
Mineral	10/29/2012	High Wind	56 MPH	0	0	\$0	\$0
Mineral	10/29/2012	High Wind	56 MPH	0	0	\$0	\$0
Pendleton	10/30/2012	High Wind	50 MPH	0	0	\$0	\$0
Pendleton	12/21/2012	High Wind	51 MPH	0	0	\$0	\$0
Pendleton	12/21/2012	High Wind	51 MPH	0	0	\$0	\$0
Mineral	5/22/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$500
Mineral	5/22/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$500
Hampshire	5/23/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$500
Pendleton	6/13/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$500
Pendleton	6/13/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$500
Hardy	6/13/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$500
Hardy	6/13/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$2,000
Pendleton	6/23/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$100
Hampshire	6/24/2013	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	7/11/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$1,000
Grant	7/19/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Grant	7/19/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Pendleton	7/19/2013	Hail	1" Dia.	0	0	\$0	\$0
Pendleton	7/19/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hardy	7/19/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hardy	7/19/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Grant	7/19/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Hardy	8/7/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Mineral	8/7/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$500
Hampshire	11/1/2013	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Mineral	11/17/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Pendleton	11/17/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$250



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Hardy	11/17/2013	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Grant	12/22/2013	Thunderstorm Wind	50 MPH	0	0	\$0	\$250
Grant	12/22/2013	Thunderstorm Wind	50 MPH	0	0	\$0	\$250
Mineral	3/12/2014	High Wind	53 MPH	0	0	\$0	\$0
Pendleton	5/13/2014	Hail	1.75" Dia.	0	0	\$0	\$0
Hampshire	5/13/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Grant	6/8/2014	Thunderstorm Wind	52 MPH	0	0	\$10,000	\$0
Hardy	6/8/2014	Thunderstorm Wind	52 MPH	0	0	\$20,000	\$5,000
Hardy	6/8/2014	Thunderstorm Wind	52 MPH	0	0	\$20,000	\$10,000
Hardy	6/8/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$2,000
Hardy	6/25/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hampshire	6/25/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hampshire	7/2/2014	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	7/2/2014	Hail	1" Dia.	0	0	\$0	\$0
Hardy	7/3/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Grant	7/3/2014	Thunderstorm Wind	52 MPH	0	0	\$2,000	\$500
Grant	7/3/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$1,000
Hardy	7/3/2014	Thunderstorm Wind	52 MPH	0	0	\$2,000	\$1,000
Pendleton	7/8/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Grant	7/8/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$2,000
Mineral	7/8/2014	Thunderstorm Wind	55 MPH	0	0	\$0	\$0
Grant	7/8/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$3,000
Hardy	7/8/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hardy	7/8/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hardy	7/8/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hardy	7/8/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hardy	7/8/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hardy	7/8/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hampshire	7/10/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hampshire	7/10/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hampshire	7/13/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hampshire	7/13/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hampshire	7/13/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$500
Hampshire	7/27/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Pendleton	7/27/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hampshire	8/12/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Mineral	9/2/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$1,000
Mineral	9/2/2014	Thunderstorm Wind	52 MPH	0	0	\$2,000	\$500
Mineral	9/2/2014	Thunderstorm Wind	52 MPH	0	0	\$2,000	\$1,000
Hampshire	9/2/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$250
Hampshire	9/2/2014	Thunderstorm Wind	52 MPH	0	0	\$0	\$500
Hardy	10/15/2014	Thunderstorm Wind	52 MPH	0	0	\$2,000	\$0
Hampshire	5/31/2015	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hampshire	5/31/2015	Thunderstorm Wind	50 MPH	0	0	\$1,000	\$0
Hampshire	6/20/2015	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0



TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA

County	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Mineral	6/20/2015	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hardy	6/20/2015	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hampshire	6/20/2015	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Hampshire	6/23/2015	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Mineral	8/4/2015	Thunderstorm Wind	52 MPH	0	0	\$2,000	\$0
Hampshire	9/4/2015	Thunderstorm Wind	52 MPH	0	0	\$1,000	\$0
Mineral	9/4/2015	Thunderstorm Wind	61 MPH	0	0	\$2,000	\$0
Grant	11/13/2015	High Wind	52 MPH	0	0	\$0	\$0
Pendleton	3/28/2016	High Wind	50 MPH	0	0	\$0	\$0
Grant	4/2/2016	High Wind	50 MPH	0	0	\$0	\$0
Hampshire	4/2/2016	High Wind	50 MPH	0	0	\$0	\$0
Hardy	4/2/2016	High Wind	50 MPH	0	0	\$0	\$0
Mineral	4/2/2016	High Wind	50 MPH	0	0	\$0	\$0
Mineral	4/2/2016	High Wind	50 MPH	0	0	\$0	\$0
Mineral	4/2/2016	High Wind	50 MPH	0	0	\$0	\$0
Grant	4/2/2016	High Wind	50 MPH	0	0	\$0	\$0
Hampshire	4/2/2016	High Wind	50 MPH	0	0	\$0	\$0
Grant	4/2/2016	High Wind	50 MPH	0	0	\$0	\$0
Grant	4/2/2016	High Wind	50 MPH	0	0	\$0	\$0
Grant	4/3/2016	High Wind	50 MPH	0	0	\$0	\$0
Grant	4/3/2016	High Wind	50 MPH	0	0	\$0	\$0
Pendleton	4/3/2016	High Wind	50 MPH	0	0	\$0	\$0
Hardy	6/16/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Mineral	6/16/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Pendleton	6/16/2016	Thunderstorm Wind	56 MPH	0	0	\$0	\$0
Pendleton	6/16/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hardy	6/16/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hardy	6/16/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Mineral	6/21/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	6/21/2016	Hail	1" Dia.	0	0	\$0	\$0
Hampshire	6/21/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Grant	6/24/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hardy	6/24/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Grant	6/24/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Grant	6/24/2016	Hail	1.25" Dia.	0	0	\$0	\$0
Grant	6/24/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Grant	6/24/2016	Hail	1" Dia.	0	0	\$0	\$0
Grant	6/24/2016	Hail	1" Dia.	0	0	\$0	\$0
Grant	6/24/2016	Thunderstorm Wind	35 MPH	0	0	\$1,000	\$0
Grant	6/24/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hardy	6/24/2016	Hail	1" Dia.	0	0	\$0	\$0
Hardy	6/24/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hardy	6/24/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	8/13/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hardy	9/26/2016	Thunderstorm Wind	50 MPH	0	0	\$0	\$0



**TABLE 5.1.M NCEI SEVERE SUMMER WEATHER DATA**

<i>County</i>	<i>Date</i>	<i>Event Type</i>	<i>Magnitude</i>	<i>Deaths</i>	<i>Injuries</i>	<i>Property Damage</i>	<i>Crop Damage</i>
Mineral	11/19/2016	High Wind	52 MPH	0	0	\$0	\$0
Pendleton	11/19/2016	High Wind	52 MPH	0	0	\$0	\$0
Pendleton	11/19/2016	High Wind	52 MPH	0	0	\$0	\$0
Grant	11/20/2016	High Wind	61 MPH	0	0	\$0	\$0
Hardy	3/1/2017	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Grant	3/1/2017	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Grant	3/1/2017	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	4/30/2017	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Hampshire	4/30/2017	Hail	1.5" Dia.	0	0	\$0	\$0
Hampshire	4/30/2017	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Hampshire	4/30/2017	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Hampshire	4/30/2017	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Hampshire	4/30/2017	Thunderstorm Wind	52 MPH	0	0	\$0	\$0
Hampshire	4/30/2017	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	4/30/2017	Hail	1" Dia.	0	0	\$0	\$0
Grant	6/14/2017	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Mineral	6/14/2017	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	7/7/2017	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Mineral	7/7/2017	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Hampshire	7/14/2017	Hail	1" Dia.	0	0	\$0	\$0
Mineral	7/17/2017	Hail	1" Dia.	0	0	\$0	\$0
Mineral	7/17/2017	Hail	1" Dia.	0	0	\$0	\$0
Mineral	7/17/2017	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Grant	7/22/2017	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
Pendleton	7/22/2017	Thunderstorm Wind	50 MPH	0	0	\$0	\$0
<b>Totals</b>				<b>0</b>	<b>10</b>	<b>\$1,841,200</b>	<b>\$650,100</b>





SEVERE WINTER WEATHER

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA					
County	Date	Event	Deaths	Injury	Property Damage
Hardy	1/7/1996	Blizzard	0	0	0
Hampshire	1/7/1996	Blizzard	0	0	0
Hardy	1/12/1996	Heavy Snow	0	0	0
Hampshire	1/12/1996	Heavy Snow	0	0	0
Hardy	2/3/1996	Heavy Snow	0	0	0
Hampshire	2/3/1996	Heavy Snow	0	0	0
Hampshire	12/5/1996	Heavy Snow	0	0	0
Hardy	12/5/1996	Heavy Snow	0	0	0
Hardy	12/19/1996	Heavy Snow	0	0	0
Hardy	1/9/1997	Winter Weather	0	0	0
Hampshire	1/9/1997	Winter Storm	0	0	0
Hardy	1/24/1997	Winter Weather	0	0	0
Hampshire	1/24/1997	Winter Weather	0	0	0
Hardy	2/8/1997	Heavy Snow	0	0	0
Hampshire	2/8/1997	Heavy Snow	0	0	0
Hampshire	2/13/1997	Winter Weather	0	0	0
Hardy	2/13/1997	Winter Weather	0	0	0
Hampshire	12/29/1997	Winter Storm	0	0	0
Hardy	12/29/1997	Winter Storm	0	0	0
Hardy	1/15/1998	Ice Storm	0	0	2,500
Hampshire	1/15/1998	Ice Storm	0	0	2,500
Hampshire	1/22/1998	Winter Weather	0	0	0
Hardy	1/22/1998	Winter Weather	0	0	0
Hardy	1/27/1998	Winter Storm	0	0	0
Hampshire	1/27/1998	Winter Storm	0	0	0
Hardy	2/4/1998	Winter Storm	0	0	0
Hampshire	2/4/1998	Winter Storm	0	0	0
Hardy	2/23/1998	Winter Storm	0	0	0
Hampshire	2/23/1998	Winter Storm	0	0	0
Hampshire	3/11/1998	Cold/Wind Chill	0	0	0
Hampshire	1/2/1999	Winter Storm	0	0	0
Hardy	1/2/1999	Winter Storm	0	0	0
Hardy	1/8/1999	Winter Storm	0	0	0
Hampshire	1/8/1999	Winter Storm	0	0	0
Hardy	1/14/1999	Ice Storm	0	0	10,000
Hampshire	1/14/1999	Ice Storm	0	0	10,000
Hardy	3/3/1999	Winter Weather	0	0	0
Hampshire	3/3/1999	Winter Weather	0	0	0
Hampshire	3/9/1999	Winter Storm	0	0	0
Hardy	3/9/1999	Winter Storm	0	0	0
Hardy	3/14/1999	Winter Storm	0	0	0
Hampshire	3/14/1999	Winter Storm	0	0	0
Hardy	1/20/2000	Winter Weather	0	0	0
Hampshire	1/20/2000	Winter Weather	0	0	0
Hardy	1/21/2000	Extreme Cold/Wind Chill	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Hampshire	1/21/2000	Extreme Cold/Wind Chill	0	0	0
Hampshire	1/22/2000	Extreme Cold/Wind Chill	0	0	0
Hardy	1/22/2000	Extreme Cold/Wind Chill	0	0	0
Hampshire	1/27/2000	Extreme Cold/Wind Chill	0	0	0
Hardy	1/27/2000	Extreme Cold/Wind Chill	0	0	0
Hardy	1/30/2000	Winter Weather	0	0	0
Hampshire	1/30/2000	Winter Weather	0	0	0
Hardy	2/18/2000	Winter Storm	0	0	0
Hampshire	2/18/2000	Winter Storm	0	0	0
Hardy	3/21/2000	Winter Weather	0	0	0
Hampshire	11/25/2000	Winter Weather	0	0	0
Hardy	11/25/2000	Winter Weather	0	0	0
Hampshire	12/13/2000	Ice Storm	0	0	0
Hardy	12/13/2000	Ice Storm	0	0	0
Hardy	12/19/2000	Winter Weather	0	0	0
Hampshire	12/19/2000	Winter Storm	0	0	0
Hardy	12/22/2000	Extreme Cold/Wind Chill	0	0	0
Hampshire	12/22/2000	Extreme Cold/Wind Chill	0	0	0
Hardy	1/5/2001	Winter Weather	0	0	0
Hampshire	1/5/2001	Winter Weather	0	0	0
Hampshire	1/8/2001	Winter Weather	0	0	0
Hardy	1/20/2001	Winter Storm	0	0	0
Hampshire	1/20/2001	Winter Storm	0	0	0
Hardy	2/22/2001	Winter Weather	0	0	0
Hampshire	2/22/2001	Winter Storm	0	0	0
Hampshire	3/4/2001	Winter Weather	0	0	0
Hampshire	4/19/2001	Extreme Cold/Wind Chill	0	0	0
Hardy	4/19/2001	Extreme Cold/Wind Chill	0	0	0
Hardy	1/6/2002	Winter Storm	0	0	0
Hampshire	1/6/2002	Winter Storm	0	0	0
Hardy	1/19/2002	Winter Storm	0	0	0
Hampshire	1/19/2002	Winter Weather	0	0	0
Hardy	10/29/2002	Winter Weather	0	0	0
Hampshire	10/29/2002	Winter Weather	0	0	0
Hampshire	12/5/2002	Winter Storm	0	0	0
Hardy	12/5/2002	Winter Storm	0	0	0
Hampshire	12/7/2002	Cold/Wind Chill	0	0	0
Hardy	12/7/2002	Cold/Wind Chill	0	0	0
Hampshire	12/11/2002	Ice Storm	0	0	0
Hardy	12/11/2002	Ice Storm	0	0	0
Hampshire	12/24/2002	Winter Weather	0	0	0
Hardy	12/24/2002	Winter Weather	0	0	0
Hardy	1/5/2003	Winter Weather	0	0	0
Hampshire	1/5/2003	Winter Weather	0	0	0
Hampshire	2/6/2003	Winter Storm	0	0	0
Hardy	2/6/2003	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Hampshire	2/14/2003	Winter Storm	0	0	0
Hardy	2/14/2003	Winter Storm	0	0	1,500,000
Hampshire	2/26/2003	Winter Weather	0	0	0
Hardy	2/26/2003	Winter Weather	0	0	0
Hardy	3/30/2003	Winter Storm	0	0	0
Hampshire	3/30/2003	Winter Storm	0	0	0
Hampshire	12/4/2003	Winter Storm	0	0	0
Hardy	12/4/2003	Winter Weather	0	0	0
Hampshire	12/14/2003	Winter Storm	0	0	0
Hardy	12/14/2003	Winter Storm	0	0	0
Hampshire	12/17/2003	Winter Weather	0	0	0
Hampshire	1/23/2004	Winter Storm	0	0	0
Hampshire	1/25/2004	Winter Storm	0	0	0
Hardy	1/25/2004	Winter Storm	0	0	0
Hampshire	2/3/2004	Winter Storm	0	0	0
Hardy	2/3/2004	Winter Storm	0	0	0
Hampshire	2/5/2004	Winter Storm	0	0	0
Hampshire	2/24/2005	Winter Storm	0	0	0
Hampshire	2/28/2005	Winter Storm	0	0	0
Hardy	2/28/2005	Winter Storm	0	0	0
Hardy	10/25/2005	Winter Storm	0	0	80,000
Hampshire	12/5/2005	Winter Weather	0	0	0
Hampshire	12/9/2005	Heavy Snow	0	0	0
Hardy	12/9/2005	Winter Weather	0	0	0
Hampshire	12/15/2005	Ice Storm	0	0	0
Hardy	12/15/2005	Ice Storm	0	0	0
Hardy	2/11/2006	Heavy Snow	0	0	0
Hampshire	2/11/2006	Heavy Snow	0	0	0
Grant	12/7/2006	Winter Weather	0	0	0
Mineral	12/7/2006	Winter Weather	0	0	0
Grant	1/9/2007	Winter Storm	0	0	0
Mineral	1/9/2007	Winter Weather	0	0	0
Mineral	1/19/2007	Winter Weather	0	0	0
Grant	1/19/2007	Winter Weather	0	0	0
Grant	1/21/2007	Winter Weather	0	0	0
Mineral	1/21/2007	Winter Weather	0	0	0
Grant	1/21/2007	Winter Weather	0	0	0
Mineral	1/21/2007	Winter Weather	0	0	0
Hardy	1/21/2007	Winter Weather	0	0	0
Grant	1/25/2007	Winter Storm	0	0	0
Grant	1/28/2007	Winter Weather	0	0	0
Grant	1/30/2007	Winter Storm	0	0	0
Grant	2/2/2007	Winter Storm	0	0	0
Grant	2/6/2007	Winter Storm	0	0	0
Mineral	2/6/2007	Winter Weather	0	0	0
Hampshire	2/6/2007	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Hardy	2/6/2007	Winter Weather	0	0	0
Grant	2/6/2007	Winter Storm	0	0	0
Grant	2/12/2007	Winter Weather	0	0	0
Mineral	2/12/2007	Winter Weather	0	0	0
Hampshire	2/12/2007	Winter Weather	0	0	0
Hardy	2/12/2007	Winter Storm	0	0	0
Grant	2/12/2007	Winter Weather	0	0	0
Grant	2/17/2007	Winter Weather	0	0	0
Hampshire	2/24/2007	Winter Storm	0	0	0
Mineral	2/24/2007	Winter Storm	0	0	0
Hardy	2/24/2007	Winter Weather	0	0	0
Grant	3/3/2007	Winter Weather	0	0	0
Hardy	3/7/2007	Winter Storm	0	0	0
Hampshire	3/7/2007	Winter Storm	0	0	0
Grant	3/7/2007	Winter Storm	0	0	0
Grant	3/7/2007	Winter Storm	0	0	0
Mineral	3/7/2007	Winter Storm	0	0	0
Mineral	3/7/2007	Winter Storm	0	0	0
Hampshire	3/16/2007	Winter Storm	0	0	0
Grant	3/16/2007	Winter Storm	0	0	0
Mineral	3/16/2007	Winter Storm	0	0	0
Mineral	3/16/2007	Winter Storm	0	0	0
Grant	3/16/2007	Winter Storm	0	0	0
Hardy	3/16/2007	Winter Storm	0	0	0
Grant	3/17/2007	Winter Weather	0	0	0
Grant	3/17/2007	Winter Weather	0	0	0
Hampshire	3/17/2007	Winter Weather	0	0	0
Grant	4/16/2007	Heavy Snow	0	0	0
Mineral	4/16/2007	Heavy Snow	0	0	0
Grant	11/15/2007	Winter Weather	0	0	0
Grant	12/3/2007	Heavy Snow	0	0	0
Grant	12/5/2007	Heavy Snow	0	0	0
Mineral	12/5/2007	Heavy Snow	0	0	0
Grant	12/5/2007	Heavy Snow	0	0	0
Hampshire	12/5/2007	Heavy Snow	0	0	0
Mineral	12/5/2007	Heavy Snow	0	0	0
Mineral	12/15/2007	Winter Storm	0	0	0
Hampshire	12/15/2007	Winter Storm	0	0	0
Mineral	12/15/2007	Winter Storm	0	0	0
Grant	12/15/2007	Winter Storm	0	0	0
Grant	12/15/2007	Winter Storm	0	0	0
Hardy	12/15/2007	Winter Storm	0	0	1,000
Grant	12/16/2007	Heavy Snow	0	0	0
Mineral	1/1/2008	Heavy Snow	0	0	0
Grant	1/1/2008	Heavy Snow	0	0	0
Grant	1/14/2008	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Hardy	1/17/2008	Winter Weather	0	0	0
Hampshire	1/17/2008	Winter Weather	0	0	0
Mineral	1/17/2008	Winter Weather	0	0	0
Mineral	1/17/2008	Winter Weather	0	0	0
Grant	1/17/2008	Winter Weather	0	0	0
Grant	1/17/2008	Winter Weather	0	0	0
Grant	1/24/2008	Winter Weather	0	0	0
Mineral	2/1/2008	Ice Storm	0	0	0
Hardy	2/1/2008	Ice Storm	0	0	0
Hampshire	2/1/2008	Ice Storm	0	0	0
Mineral	2/1/2008	Ice Storm	0	0	0
Grant	2/1/2008	Winter Weather	0	0	0
Grant	2/1/2008	Winter Weather	0	0	0
Grant	2/2/2008	Winter Weather	0	0	0
Mineral	2/12/2008	Winter Weather	0	0	0
Hardy	2/12/2008	Winter Weather	0	0	0
Hampshire	2/12/2008	Winter Weather	0	0	0
Mineral	2/12/2008	Winter Storm	0	0	0
Grant	2/12/2008	Winter Weather	0	0	0
Grant	2/12/2008	Winter Weather	0	0	0
Hampshire	2/20/2008	Winter Weather	0	0	0
Grant	2/20/2008	Heavy Snow	0	0	0
Grant	2/20/2008	Heavy Snow	0	0	0
Mineral	2/20/2008	Heavy Snow	0	0	0
Mineral	2/20/2008	Winter Weather	0	0	0
Hardy	2/20/2008	Winter Weather	0	0	0
Grant	2/27/2008	Heavy Snow	0	0	0
Grant	10/28/2008	Winter Weather	0	0	0
Grant	10/28/2008	Winter Weather	0	0	0
Mineral	10/28/2008	Winter Weather	0	0	0
Grant	11/17/2008	Heavy Snow	0	0	0
Mineral	11/17/2008	Winter Weather	0	0	0
Grant	11/20/2008	Heavy Snow	0	0	0
Grant	11/25/2008	Heavy Snow	0	0	0
Mineral	11/30/2008	Winter Weather	0	0	0
Grant	11/30/2008	Winter Weather	0	0	0
Grant	12/1/2008	Winter Weather	0	0	0
Grant	12/6/2008	Winter Storm	0	0	0
Grant	12/12/2008	Winter Weather	0	0	0
Grant	12/16/2008	Winter Storm	0	0	0
Mineral	12/16/2008	Winter Weather	0	0	0
Hampshire	12/16/2008	Winter Weather	0	0	0
Grant	12/21/2008	Winter Weather	0	0	0
Mineral	12/23/2008	Winter Weather	0	0	0
Mineral	12/23/2008	Winter Weather	0	0	0
Grant	12/23/2008	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Grant	12/30/2008	Winter Weather	0	0	0
Hampshire	1/6/2009	Winter Storm	0	0	0
Grant	1/6/2009	Winter Weather	0	0	0
Mineral	1/6/2009	Winter Weather	0	0	0
Mineral	1/6/2009	Winter Weather	0	0	0
Hardy	1/6/2009	Winter Weather	0	0	0
Grant	1/6/2009	Winter Weather	0	0	0
Grant	1/7/2009	Winter Weather	0	0	0
Grant	1/10/2009	Winter Weather	0	0	0
Mineral	1/10/2009	Winter Weather	0	0	0
Grant	1/10/2009	Winter Weather	0	0	0
Grant	1/12/2009	Winter Weather	0	0	0
Grant	1/13/2009	Winter Weather	0	0	0
Grant	1/14/2009	Winter Storm	0	0	0
Grant	1/15/2009	Winter Weather	0	0	0
Mineral	1/15/2009	Winter Weather	0	0	0
Grant	1/18/2009	Winter Weather	0	0	0
Hardy	1/27/2009	Winter Storm	0	0	0
Mineral	1/27/2009	Winter Storm	0	0	0
Grant	1/27/2009	Winter Storm	0	0	0
Hampshire	1/27/2009	Winter Storm	0	0	0
Grant	1/27/2009	Winter Storm	0	0	0
Mineral	1/27/2009	Winter Storm	0	0	0
Grant	1/30/2009	Winter Weather	0	0	0
Grant	2/2/2009	Winter Weather	0	0	0
Mineral	2/2/2009	Winter Weather	0	0	0
Hardy	2/2/2009	Winter Weather	0	0	0
Hampshire	2/2/2009	Winter Weather	0	0	0
Mineral	2/19/2009	Winter Weather	0	0	0
Grant	2/19/2009	Winter Storm	0	0	0
Grant	2/22/2009	Winter Storm	0	0	0
Grant	4/6/2009	Winter Weather	0	0	0
Grant	11/27/2009	Winter Weather	0	0	0
Hardy	12/5/2009	Winter Storm	0	0	0
Mineral	12/5/2009	Winter Storm	0	0	0
Mineral	12/5/2009	Winter Storm	0	0	0
Grant	12/5/2009	Winter Storm	0	0	0
Grant	12/5/2009	Winter Storm	0	0	0
Hampshire	12/5/2009	Winter Storm	0	0	0
Mineral	12/8/2009	Winter Storm	0	0	0
Mineral	12/8/2009	Winter Weather	0	0	0
Hampshire	12/8/2009	Winter Weather	0	0	0
Grant	12/8/2009	Winter Storm	0	0	0
Grant	12/13/2009	Winter Weather	0	0	0
Mineral	12/13/2009	Winter Weather	0	0	0
Grant	12/13/2009	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Mineral	12/13/2009	Winter Weather	0	0	0
Hampshire	12/13/2009	Winter Weather	0	0	0
Hardy	12/13/2009	Winter Weather	0	0	0
Hampshire	12/18/2009	Winter Storm	0	0	0
Grant	12/18/2009	Winter Storm	0	0	0
Hardy	12/18/2009	Winter Storm	0	0	0
Grant	12/18/2009	Winter Storm	0	0	0
Mineral	12/18/2009	Winter Storm	0	0	0
Mineral	12/18/2009	Winter Storm	0	0	0
Hampshire	12/25/2009	Winter Weather	0	0	0
Hardy	12/25/2009	Winter Weather	0	0	0
Grant	12/28/2009	Winter Storm	0	0	0
Grant	12/31/2009	Winter Weather	0	0	0
Mineral	12/31/2009	Winter Weather	0	0	0
Grant	12/31/2009	Winter Weather	0	0	0
Hampshire	12/31/2009	Winter Weather	0	0	0
Hardy	12/31/2009	Winter Weather	0	0	0
Mineral	1/1/2010	Winter Storm	0	0	0
Grant	1/1/2010	Winter Storm	0	0	0
Grant	1/3/2010	Winter Weather	0	0	0
Mineral	1/3/2010	Winter Weather	0	0	0
Mineral	1/7/2010	Winter Storm	0	0	0
Grant	1/7/2010	Winter Storm	0	0	0
Hardy	1/21/2010	Winter Weather	0	0	0
Grant	1/21/2010	Winter Storm	0	0	0
Mineral	1/21/2010	Winter Weather	0	0	0
Mineral	1/21/2010	Winter Weather	0	0	0
Grant	1/25/2010	Winter Storm	0	0	0
Grant	1/30/2010	Winter Weather	0	0	0
Hardy	1/30/2010	Winter Weather	0	0	0
Mineral	1/30/2010	Winter Weather	0	0	0
Mineral	1/30/2010	Winter Weather	0	0	0
Grant	1/30/2010	Winter Storm	0	0	0
Grant	2/2/2010	Winter Storm	0	0	0
Hardy	2/2/2010	Winter Storm	0	0	0
Grant	2/2/2010	Winter Storm	0	0	0
Mineral	2/2/2010	Winter Weather	0	0	0
Hampshire	2/2/2010	Winter Weather	0	0	0
Mineral	2/2/2010	Winter Weather	0	0	0
Grant	2/5/2010	Winter Storm	0	0	0
Mineral	2/5/2010	Winter Storm	0	0	2,000
Mineral	2/5/2010	Winter Storm	0	0	10,000
Grant	2/5/2010	Winter Storm	0	0	0
Hardy	2/5/2010	Winter Storm	0	0	0
Hampshire	2/5/2010	Winter Storm	0	0	0
Mineral	2/9/2010	Winter Storm	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Grant	2/9/2010	Winter Storm	0	0	0
Grant	2/9/2010	Winter Storm	0	0	0
Hardy	2/9/2010	Winter Storm	0	0	0
Mineral	2/9/2010	Winter Storm	0	0	0
Hampshire	2/9/2010	Winter Storm	0	0	0
Grant	2/10/2010	Blizzard	0	0	0
Mineral	2/10/2010	Blizzard	0	0	0
Grant	2/11/2010	Winter Weather	0	0	0
Mineral	2/11/2010	Winter Weather	0	0	0
Grant	2/13/2010	Winter Weather	0	0	0
Mineral	2/15/2010	Winter Storm	0	0	0
Grant	2/15/2010	Winter Storm	0	0	0
Hardy	2/15/2010	Winter Weather	0	0	0
Mineral	2/15/2010	Winter Weather	0	0	0
Grant	2/25/2010	Winter Storm	0	0	0
Mineral	2/25/2010	Winter Storm	0	0	0
Grant	2/25/2010	Blizzard	0	0	0
Mineral	2/25/2010	Blizzard	0	0	0
Grant	12/5/2010	Winter Storm	0	0	0
Mineral	12/5/2010	Winter Weather	0	0	0
Pendleton	12/5/2010	Winter Storm	0	0	0
Pendleton	12/6/2010	Blizzard	0	0	0
Grant	12/6/2010	Blizzard	0	0	0
Mineral	12/6/2010	Blizzard	0	0	0
Grant	12/12/2010	Winter Weather	0	0	0
Pendleton	12/12/2010	Winter Weather	0	0	0
Mineral	12/12/2010	Winter Weather	0	0	0
Mineral	12/12/2010	Winter Weather	0	0	0
Hardy	12/12/2010	Winter Weather	0	0	0
Hampshire	12/12/2010	Winter Weather	0	0	0
Pendleton	12/14/2010	Extreme Cold/Wind Chill	0	0	0
Grant	12/14/2010	Extreme Cold/Wind Chill	0	0	0
Pendleton	12/16/2010	Winter Weather	0	0	0
Pendleton	12/16/2010	Winter Weather	0	0	0
Hampshire	12/16/2010	Winter Weather	0	0	0
Hardy	12/16/2010	Winter Weather	0	0	0
Grant	12/16/2010	Winter Weather	0	0	0
Grant	12/16/2010	Winter Weather	0	0	0
Mineral	12/16/2010	Winter Weather	0	0	0
Mineral	12/16/2010	Winter Weather	0	0	0
Grant	12/26/2010	Winter Weather	0	0	0
Pendleton	12/26/2010	Winter Weather	0	0	0
Mineral	12/30/2010	Winter Weather	0	0	0
Hampshire	12/30/2010	Winter Weather	0	0	0
Pendleton	12/30/2010	Winter Weather	0	0	0
Grant	12/30/2010	Winter Weather	0	0	0



TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Hardy	12/30/2010	Winter Weather	0	0	0
Pendleton	12/30/2010	Winter Weather	0	0	0
Grant	1/6/2011	Winter Weather	0	0	0
Pendleton	1/6/2011	Winter Weather	0	0	0
Mineral	1/6/2011	Winter Weather	0	0	0
Mineral	1/8/2011	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/8/2011	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/8/2011	Extreme Cold/Wind Chill	0	0	0
Grant	1/8/2011	Extreme Cold/Wind Chill	0	0	0
Mineral	1/11/2011	Winter Weather	0	0	0
Pendleton	1/11/2011	Winter Weather	0	0	0
Grant	1/11/2011	Winter Weather	0	0	0
Grant	1/11/2011	Winter Storm	0	0	0
Pendleton	1/11/2011	Winter Storm	0	0	0
Pendleton	1/12/2011	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/12/2011	Extreme Cold/Wind Chill	0	0	0
Mineral	1/12/2011	Extreme Cold/Wind Chill	0	0	0
Grant	1/12/2011	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/12/2011	Extreme Cold/Wind Chill	0	0	0
Hampshire	1/17/2011	Winter Weather	0	0	0
Hardy	1/17/2011	Winter Weather	0	0	0
Grant	1/20/2011	Winter Weather	0	0	0
Mineral	1/21/2011	Extreme Cold/Wind Chill	0	0	0
Grant	1/21/2011	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/21/2011	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/21/2011	Extreme Cold/Wind Chill	0	0	0
Grant	1/22/2011	Extreme Cold/Wind Chill	0	0	0
Mineral	1/22/2011	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/23/2011	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/23/2011	Extreme Cold/Wind Chill	0	0	0
Mineral	1/26/2011	Winter Storm	0	0	0
Pendleton	1/26/2011	Winter Storm	0	0	0
Grant	1/26/2011	Winter Storm	0	0	0
Mineral	1/26/2011	Winter Storm	0	0	0
Pendleton	1/26/2011	Winter Storm	0	0	0
Grant	1/26/2011	Winter Storm	0	0	0
Hampshire	1/26/2011	Winter Storm	0	0	0
Hardy	1/26/2011	Winter Storm	0	0	0
Mineral	2/1/2011	Winter Weather	0	0	0
Hampshire	2/1/2011	Winter Weather	0	0	0
Mineral	2/1/2011	Winter Weather	0	0	0
Hampshire	2/1/2011	Winter Weather	0	0	0
Hampshire	2/5/2011	Winter Weather	0	0	0
Mineral	2/5/2011	Winter Weather	0	0	0
Mineral	2/5/2011	Winter Weather	0	0	0
Grant	2/21/2011	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Grant	2/21/2011	Winter Weather	0	0	0
Mineral	2/21/2011	Winter Weather	0	0	0
Hampshire	2/21/2011	Winter Weather	0	0	0
Mineral	2/21/2011	Winter Weather	0	0	0
Hardy	2/21/2011	Winter Weather	0	0	0
Pendleton	2/21/2011	Winter Weather	0	0	0
Pendleton	2/21/2011	Winter Weather	0	0	0
Mineral	3/6/2011	Winter Weather	0	0	0
Pendleton	3/6/2011	Winter Weather	0	0	0
Grant	3/6/2011	Winter Weather	0	0	0
Hardy	3/6/2011	Winter Weather	0	0	0
Hampshire	3/6/2011	Winter Weather	0	0	0
Pendleton	3/9/2011	Winter Weather	0	0	0
Mineral	3/9/2011	Winter Weather	0	0	0
Pendleton	3/27/2011	Winter Weather	0	0	0
Pendleton	3/27/2011	Winter Weather	0	0	0
Grant	3/27/2011	Winter Weather	0	0	0
Hardy	3/27/2011	Winter Weather	0	0	0
Pendleton	4/1/2011	Winter Storm	0	0	0
Hampshire	10/28/2011	Winter Storm	0	0	0
Grant	10/28/2011	Winter Storm	0	0	0
Pendleton	10/28/2011	Winter Storm	0	0	0
Hardy	10/28/2011	Winter Storm	0	0	0
Pendleton	10/28/2011	Winter Storm	0	0	0
Grant	10/28/2011	Winter Storm	0	0	0
Mineral	10/28/2011	Winter Storm	0	0	0
Mineral	10/28/2011	Winter Storm	0	0	0
Pendleton	12/7/2011	Winter Storm	0	0	0
Mineral	12/7/2011	Winter Storm	0	0	0
Grant	12/7/2011	Winter Storm	0	0	0
Mineral	1/2/2012	Winter Weather	0	0	0
Pendleton	1/2/2012	Winter Storm	0	0	0
Grant	1/2/2012	Winter Storm	0	0	0
Mineral	1/2/2012	Winter Weather	0	0	0
Pendleton	1/2/2012	Winter Storm	0	0	0
Grant	1/2/2012	Winter Storm	0	0	0
Pendleton	1/11/2012	Winter Weather	0	0	0
Grant	1/11/2012	Winter Weather	0	0	0
Grant	1/11/2012	Winter Weather	0	0	0
Pendleton	1/11/2012	Winter Weather	0	0	0
Pendleton	1/11/2012	Winter Weather	0	0	0
Grant	1/11/2012	Winter Weather	0	0	0
Grant	1/11/2012	Winter Weather	0	0	0
Pendleton	1/11/2012	Winter Weather	0	0	0
Grant	1/12/2012	Winter Weather	0	0	0
Pendleton	1/12/2012	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Grant	1/12/2012	Winter Weather	0	0	0
Pendleton	1/12/2012	Winter Weather	0	0	0
Mineral	1/16/2012	Winter Weather	0	0	0
Mineral	1/16/2012	Winter Weather	0	0	0
Mineral	1/16/2012	Winter Weather	0	0	0
Mineral	1/16/2012	Winter Weather	0	0	0
Grant	1/20/2012	Winter Weather	0	0	0
Mineral	1/20/2012	Winter Weather	0	0	0
Mineral	1/20/2012	Winter Weather	0	0	0
Hampshire	1/20/2012	Winter Weather	0	0	0
Hardy	1/20/2012	Winter Weather	0	0	0
Grant	1/20/2012	Winter Weather	0	0	0
Grant	1/20/2012	Winter Weather	0	0	0
Mineral	1/20/2012	Winter Weather	0	0	0
Mineral	1/20/2012	Winter Weather	0	0	0
Hampshire	1/20/2012	Winter Weather	0	0	0
Hardy	1/20/2012	Winter Weather	0	0	0
Grant	1/20/2012	Winter Weather	0	0	0
Mineral	1/22/2012	Winter Weather	0	0	0
Hampshire	1/22/2012	Winter Weather	0	0	0
Hardy	1/22/2012	Winter Weather	0	0	0
Grant	1/22/2012	Winter Weather	0	0	0
Grant	1/22/2012	Winter Weather	0	0	0
Mineral	1/22/2012	Winter Weather	0	0	0
Mineral	1/22/2012	Winter Weather	0	0	0
Hampshire	1/22/2012	Winter Weather	0	0	0
Hardy	1/22/2012	Winter Weather	0	0	0
Grant	1/22/2012	Winter Weather	0	0	0
Grant	1/22/2012	Winter Weather	0	0	0
Mineral	1/22/2012	Winter Weather	0	0	0
Mineral	1/22/2012	Winter Weather	0	0	0
Hampshire	1/22/2012	Winter Weather	0	0	0
Hardy	1/22/2012	Winter Weather	0	0	0
Grant	1/22/2012	Winter Weather	0	0	0
Grant	1/22/2012	Winter Weather	0	0	0
Mineral	1/22/2012	Winter Weather	0	0	0
Grant	2/10/2012	Winter Storm	0	0	0
Pendleton	2/10/2012	Winter Storm	0	0	0
Grant	2/10/2012	Winter Storm	0	0	0
Pendleton	2/10/2012	Winter Storm	0	0	0
Pendleton	2/25/2012	Winter Weather	0	0	0
Mineral	2/25/2012	Winter Weather	0	0	0
Grant	2/25/2012	Winter Weather	0	0	0
Pendleton	2/25/2012	Winter Weather	0	0	0
Mineral	2/25/2012	Winter Weather	0	0	0
Grant	2/25/2012	Winter Weather	0	0	0
Grant	4/23/2012	Winter Weather	0	0	0
Pendleton	4/23/2012	Winter Weather	0	0	0
Mineral	4/23/2012	Winter Weather	0	0	0
Grant	4/23/2012	Winter Weather	0	0	0
Pendleton	4/23/2012	Winter Weather	0	0	0
Mineral	4/23/2012	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Grant	10/29/2012	Blizzard	0	0	0
Pendleton	10/29/2012	Blizzard	0	0	0
Pendleton	10/29/2012	Blizzard	0	0	0
Mineral	10/29/2012	Blizzard	0	0	0
Grant	10/29/2012	Blizzard	0	0	0
Pendleton	10/29/2012	Blizzard	0	0	0
Pendleton	10/29/2012	Blizzard	0	0	0
Mineral	10/29/2012	Blizzard	0	0	0
Mineral	12/21/2012	Blizzard	0	0	0
Pendleton	12/21/2012	Blizzard	0	0	0
Grant	12/21/2012	Blizzard	0	0	0
Mineral	12/21/2012	Blizzard	0	0	0
Pendleton	12/21/2012	Blizzard	0	0	0
Grant	12/21/2012	Blizzard	0	0	0
Hampshire	12/24/2012	Winter Weather	0	0	0
Hardy	12/24/2012	Winter Weather	0	0	0
Hampshire	12/24/2012	Winter Weather	0	0	0
Hardy	12/24/2012	Winter Weather	0	0	0
Mineral	12/26/2012	Winter Storm	0	0	0
Grant	12/26/2012	Winter Storm	0	0	0
Pendleton	12/26/2012	Winter Weather	0	0	0
Pendleton	12/26/2012	Winter Storm	0	0	0
Hardy	12/26/2012	Winter Storm	0	0	0
Hampshire	12/26/2012	Winter Storm	0	0	0
Mineral	12/26/2012	Winter Storm	0	0	0
Grant	12/26/2012	Winter Storm	0	0	0
Mineral	12/26/2012	Winter Storm	0	0	0
Grant	12/26/2012	Winter Storm	0	0	0
Pendleton	12/26/2012	Winter Weather	0	0	0
Pendleton	12/26/2012	Winter Storm	0	0	0
Hardy	12/26/2012	Winter Storm	0	0	0
Hampshire	12/26/2012	Winter Storm	0	0	0
Mineral	12/26/2012	Winter Storm	0	0	0
Grant	12/26/2012	Winter Storm	0	0	0
Grant	12/29/2012	Winter Weather	0	0	0
Mineral	12/29/2012	Winter Weather	0	0	0
Pendleton	12/29/2012	Winter Weather	0	0	0
Grant	12/29/2012	Winter Weather	0	0	0
Mineral	12/29/2012	Winter Weather	0	0	0
Pendleton	12/29/2012	Winter Weather	0	0	0
Grant	1/14/2013	Winter Weather	0	0	0
Mineral	1/14/2013	Winter Weather	0	0	0
Grant	1/14/2013	Winter Weather	0	0	0
Mineral	1/14/2013	Winter Weather	0	0	0
Pendleton	1/15/2013	Winter Weather	0	0	0
Pendleton	1/15/2013	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Mineral	1/15/2013	Winter Weather	0	0	0
Grant	1/15/2013	Winter Weather	0	0	0
Grant	1/15/2013	Winter Weather	0	0	0
Hardy	1/15/2013	Winter Weather	0	0	0
Hampshire	1/15/2013	Winter Weather	0	0	0
Mineral	1/15/2013	Winter Weather	0	0	0
Pendleton	1/15/2013	Winter Weather	0	0	0
Pendleton	1/15/2013	Winter Weather	0	0	0
Mineral	1/15/2013	Winter Weather	0	0	0
Grant	1/15/2013	Winter Weather	0	0	0
Grant	1/15/2013	Winter Weather	0	0	0
Hardy	1/15/2013	Winter Weather	0	0	0
Hampshire	1/15/2013	Winter Weather	0	0	0
Mineral	1/15/2013	Winter Weather	0	0	0
Pendleton	1/23/2013	Winter Storm	0	0	0
Grant	1/23/2013	Winter Weather	0	0	0
Pendleton	1/23/2013	Winter Storm	0	0	0
Grant	1/23/2013	Winter Weather	0	0	0
Hampshire	1/25/2013	Winter Weather	0	0	0
Pendleton	1/25/2013	Winter Weather	0	0	0
Grant	1/25/2013	Winter Weather	0	0	0
Mineral	1/25/2013	Winter Weather	0	0	0
Hampshire	1/25/2013	Winter Weather	0	0	0
Pendleton	1/25/2013	Winter Weather	0	0	0
Grant	1/25/2013	Winter Weather	0	0	0
Mineral	1/25/2013	Winter Weather	0	0	0
Mineral	1/28/2013	Winter Weather	0	0	0
Mineral	1/28/2013	Winter Weather	0	0	0
Pendleton	1/28/2013	Winter Weather	0	0	0
Pendleton	1/28/2013	Winter Weather	0	0	0
Grant	1/28/2013	Winter Weather	0	0	0
Grant	1/28/2013	Winter Weather	0	0	0
Hardy	1/28/2013	Winter Weather	0	0	0
Hampshire	1/28/2013	Winter Weather	0	0	0
Mineral	1/28/2013	Winter Weather	0	0	0
Mineral	1/28/2013	Winter Weather	0	0	0
Pendleton	1/28/2013	Winter Weather	0	0	0
Pendleton	1/28/2013	Winter Weather	0	0	0
Grant	1/28/2013	Winter Weather	0	0	0
Grant	1/28/2013	Winter Weather	0	0	0
Hardy	1/28/2013	Winter Weather	0	0	0
Hampshire	1/28/2013	Winter Weather	0	0	0
Grant	1/31/2013	Winter Weather	0	0	0
Pendleton	1/31/2013	Winter Weather	0	0	0
Mineral	1/31/2013	Winter Weather	0	0	0
Grant	1/31/2013	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Pendleton	1/31/2013	Winter Weather	0	0	0
Mineral	1/31/2013	Winter Weather	0	0	0
Grant	2/2/2013	Winter Weather	0	0	0
Mineral	2/2/2013	Winter Weather	0	0	0
Grant	2/2/2013	Winter Weather	0	0	0
Mineral	2/2/2013	Winter Weather	0	0	0
Pendleton	2/4/2013	Winter Storm	0	0	0
Mineral	2/4/2013	Winter Weather	0	0	0
Grant	2/4/2013	Winter Weather	0	0	0
Hampshire	2/4/2013	Winter Weather	0	0	0
Mineral	2/4/2013	Winter Weather	0	0	0
Grant	2/4/2013	Winter Weather	0	0	0
Hardy	2/4/2013	Winter Weather	0	0	0
Pendleton	2/4/2013	Winter Storm	0	0	0
Mineral	2/4/2013	Winter Weather	0	0	0
Grant	2/4/2013	Winter Weather	0	0	0
Hampshire	2/4/2013	Winter Weather	0	0	0
Mineral	2/4/2013	Winter Weather	0	0	0
Grant	2/4/2013	Winter Weather	0	0	0
Hardy	2/4/2013	Winter Weather	0	0	0
Pendleton	2/8/2013	Winter Weather	0	0	0
Pendleton	2/8/2013	Winter Weather	0	0	0
Pendleton	2/13/2013	Winter Weather	0	0	0
Pendleton	2/13/2013	Winter Weather	0	0	0
Grant	2/16/2013	Winter Storm	0	0	0
Pendleton	2/16/2013	Winter Storm	0	0	0
Grant	2/16/2013	Winter Storm	0	0	0
Pendleton	2/16/2013	Winter Storm	0	0	0
Pendleton	2/19/2013	Winter Weather	0	0	0
Pendleton	2/19/2013	Winter Weather	0	0	0
Pendleton	2/22/2013	Winter Weather	0	0	0
Grant	2/22/2013	Winter Weather	0	0	0
Grant	2/22/2013	Winter Weather	0	0	0
Hardy	2/22/2013	Winter Weather	0	0	0
Pendleton	2/22/2013	Winter Weather	0	0	0
Mineral	2/22/2013	Winter Weather	0	0	0
Hampshire	2/22/2013	Winter Weather	0	0	0
Mineral	2/22/2013	Winter Weather	0	0	0
Pendleton	2/22/2013	Winter Weather	0	0	0
Grant	2/22/2013	Winter Weather	0	0	0
Grant	2/22/2013	Winter Weather	0	0	0
Hardy	2/22/2013	Winter Weather	0	0	0
Pendleton	2/22/2013	Winter Weather	0	0	0
Mineral	2/22/2013	Winter Weather	0	0	0
Hampshire	2/22/2013	Winter Weather	0	0	0
Mineral	2/22/2013	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Pendleton	2/26/2013	Winter Storm	0	0	0
Pendleton	2/26/2013	Winter Storm	0	0	0
Hardy	2/26/2013	Winter Weather	0	0	0
Grant	2/26/2013	Winter Storm	0	0	0
Grant	2/26/2013	Winter Weather	0	0	0
Hampshire	2/26/2013	Winter Weather	0	0	0
Mineral	2/26/2013	Winter Weather	0	0	0
Mineral	2/26/2013	Winter Weather	0	0	0
Pendleton	2/26/2013	Winter Storm	0	0	0
Pendleton	2/26/2013	Winter Storm	0	0	0
Hardy	2/26/2013	Winter Weather	0	0	0
Grant	2/26/2013	Winter Storm	0	0	0
Grant	2/26/2013	Winter Weather	0	0	0
Hampshire	2/26/2013	Winter Weather	0	0	0
Mineral	2/26/2013	Winter Weather	0	0	0
Mineral	2/26/2013	Winter Weather	0	0	0
Grant	2/28/2013	Winter Weather	0	0	0
Pendleton	2/28/2013	Winter Weather	0	0	0
Grant	2/28/2013	Winter Weather	0	0	0
Pendleton	2/28/2013	Winter Weather	0	0	0
Pendleton	3/2/2013	Winter Weather	0	0	0
Pendleton	3/2/2013	Winter Weather	0	0	0
Pendleton	3/5/2013	Winter Storm	0	0	0
Pendleton	3/5/2013	Winter Storm	0	0	0
Mineral	3/5/2013	Winter Storm	0	0	0
Grant	3/5/2013	Winter Storm	0	0	0
Grant	3/5/2013	Winter Storm	0	0	0
Hardy	3/5/2013	Winter Storm	0	0	0
Hampshire	3/5/2013	Winter Storm	0	0	0
Mineral	3/5/2013	Winter Storm	0	0	0
Pendleton	3/5/2013	Winter Storm	0	0	0
Pendleton	3/5/2013	Winter Storm	0	0	0
Mineral	3/5/2013	Winter Storm	0	0	0
Grant	3/5/2013	Winter Storm	0	0	0
Grant	3/5/2013	Winter Storm	0	0	0
Hardy	3/5/2013	Winter Storm	0	0	0
Hampshire	3/5/2013	Winter Storm	0	0	0
Mineral	3/5/2013	Winter Storm	0	0	0
Grant	3/17/2013	Winter Weather	0	0	0
Pendleton	3/17/2013	Winter Storm	0	0	0
Pendleton	3/17/2013	Winter Weather	0	0	0
Grant	3/17/2013	Winter Weather	0	0	0
Hardy	3/17/2013	Winter Weather	0	0	0
Grant	3/17/2013	Winter Weather	0	0	0
Pendleton	3/17/2013	Winter Storm	0	0	0
Pendleton	3/17/2013	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Grant	3/17/2013	Winter Weather	0	0	0
Hardy	3/17/2013	Winter Weather	0	0	0
Mineral	3/18/2013	Winter Weather	0	0	0
Hampshire	3/18/2013	Winter Weather	0	0	0
Mineral	3/18/2013	Winter Weather	0	0	0
Mineral	3/18/2013	Winter Weather	0	0	0
Pendleton	3/18/2013	Winter Weather	0	0	0
Grant	3/18/2013	Winter Weather	0	0	0
Mineral	3/18/2013	Winter Weather	0	0	0
Grant	3/18/2013	Winter Weather	0	0	0
Hampshire	3/18/2013	Winter Weather	0	0	0
Pendleton	3/18/2013	Winter Weather	0	0	0
Hardy	3/18/2013	Winter Weather	0	0	0
Mineral	3/18/2013	Winter Weather	0	0	0
Hampshire	3/18/2013	Winter Weather	0	0	0
Mineral	3/18/2013	Winter Weather	0	0	0
Mineral	3/18/2013	Winter Weather	0	0	0
Pendleton	3/18/2013	Winter Weather	0	0	0
Grant	3/18/2013	Winter Weather	0	0	0
Mineral	3/18/2013	Winter Weather	0	0	0
Grant	3/18/2013	Winter Weather	0	0	0
Hampshire	3/18/2013	Winter Weather	0	0	0
Pendleton	3/18/2013	Winter Weather	0	0	0
Hardy	3/18/2013	Winter Weather	0	0	0
Mineral	3/24/2013	Winter Storm	0	0	0
Pendleton	3/24/2013	Winter Storm	0	0	0
Pendleton	3/24/2013	Winter Storm	0	0	0
Grant	3/24/2013	Winter Storm	0	0	0
Mineral	3/24/2013	Winter Storm	0	0	0
Hardy	3/24/2013	Winter Storm	0	0	0
Hampshire	3/24/2013	Winter Storm	0	0	0
Grant	3/24/2013	Winter Storm	0	0	0
Mineral	3/24/2013	Winter Storm	0	0	0
Pendleton	3/24/2013	Winter Storm	0	0	0
Pendleton	3/24/2013	Winter Storm	0	0	0
Grant	3/24/2013	Winter Storm	0	0	0
Mineral	3/24/2013	Winter Storm	0	0	0
Hardy	3/24/2013	Winter Storm	0	0	0
Hampshire	3/24/2013	Winter Storm	0	0	0
Grant	3/24/2013	Winter Storm	0	0	0
Pendleton	3/26/2013	Winter Storm	0	0	0
Pendleton	3/26/2013	Winter Storm	0	0	0
Pendleton	3/27/2013	Winter Weather	0	0	0
Pendleton	3/27/2013	Winter Weather	0	0	0
Pendleton	4/4/2013	Winter Weather	0	0	0
Pendleton	4/4/2013	Winter Weather	0	0	0



TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Grant	4/4/2013	Winter Weather	0	0	0
Hardy	4/4/2013	Winter Weather	0	0	0
Pendleton	4/4/2013	Winter Weather	0	0	0
Pendleton	4/4/2013	Winter Weather	0	0	0
Grant	4/4/2013	Winter Weather	0	0	0
Hardy	4/4/2013	Winter Weather	0	0	0
Grant	11/12/2013	Winter Weather	0	0	0
Grant	11/12/2013	Winter Weather	0	0	0
Pendleton	11/26/2013	Winter Weather	0	0	0
Grant	11/26/2013	Winter Weather	0	0	0
Grant	11/26/2013	Winter Weather	0	0	0
Hardy	11/26/2013	Winter Weather	0	0	0
Hampshire	11/26/2013	Winter Weather	0	0	0
Mineral	11/26/2013	Winter Weather	0	0	0
Mineral	11/26/2013	Winter Weather	0	0	0
Pendleton	11/26/2013	Winter Weather	0	0	0
Pendleton	11/26/2013	Winter Weather	0	0	0
Grant	11/26/2013	Winter Weather	0	0	0
Grant	11/26/2013	Winter Weather	0	0	0
Hardy	11/26/2013	Winter Weather	0	0	0
Hampshire	11/26/2013	Winter Weather	0	0	0
Mineral	11/26/2013	Winter Weather	0	0	0
Mineral	11/26/2013	Winter Weather	0	0	0
Pendleton	11/26/2013	Winter Weather	0	0	0
Grant	11/27/2013	Winter Weather	0	0	0
Grant	11/27/2013	Winter Weather	0	0	0
Mineral	12/6/2013	Winter Weather	0	0	0
Grant	12/6/2013	Winter Weather	0	0	0
Mineral	12/6/2013	Winter Weather	0	0	0
Grant	12/6/2013	Winter Weather	0	0	0
Hardy	12/8/2013	Winter Storm	0	0	0
Pendleton	12/8/2013	Winter Storm	0	0	0
Pendleton	12/8/2013	Winter Storm	0	0	0
Grant	12/8/2013	Winter Storm	0	0	0
Grant	12/8/2013	Winter Storm	0	0	0
Hampshire	12/8/2013	Winter Storm	0	0	0
Mineral	12/8/2013	Winter Storm	0	0	0
Mineral	12/8/2013	Winter Storm	0	0	0
Hardy	12/8/2013	Winter Storm	0	0	0
Pendleton	12/8/2013	Winter Storm	0	0	0
Pendleton	12/8/2013	Winter Storm	0	0	0
Grant	12/8/2013	Winter Storm	0	0	0
Grant	12/8/2013	Winter Storm	0	0	0
Hampshire	12/8/2013	Winter Storm	0	0	0
Mineral	12/8/2013	Winter Storm	0	0	0
Mineral	12/8/2013	Winter Storm	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Hampshire	12/10/2013	Winter Weather	0	0	0
Hardy	12/10/2013	Winter Weather	0	0	0
Hampshire	12/10/2013	Winter Weather	0	0	0
Hardy	12/10/2013	Winter Weather	0	0	0
Grant	12/14/2013	Winter Weather	0	0	0
Pendleton	12/14/2013	Winter Weather	0	0	0
Pendleton	12/14/2013	Winter Weather	0	0	0
Grant	12/14/2013	Winter Storm	0	0	0
Hampshire	12/14/2013	Winter Storm	0	0	0
Mineral	12/14/2013	Winter Storm	0	0	0
Mineral	12/14/2013	Winter Weather	0	0	0
Hardy	12/14/2013	Winter Weather	0	0	0
Grant	12/14/2013	Winter Weather	0	0	0
Pendleton	12/14/2013	Winter Weather	0	0	0
Pendleton	12/14/2013	Winter Weather	0	0	0
Grant	12/14/2013	Winter Storm	0	0	0
Hampshire	12/14/2013	Winter Storm	0	0	0
Mineral	12/14/2013	Winter Storm	0	0	0
Mineral	12/14/2013	Winter Weather	0	0	0
Hardy	12/14/2013	Winter Weather	0	0	0
Pendleton	1/2/2014	Winter Weather	0	0	0
Hardy	1/2/2014	Winter Weather	0	0	0
Hampshire	1/2/2014	Winter Weather	0	0	0
Grant	1/2/2014	Winter Weather	0	0	0
Pendleton	1/2/2014	Winter Weather	0	0	0
Hardy	1/2/2014	Winter Weather	0	0	0
Hampshire	1/2/2014	Winter Weather	0	0	0
Grant	1/2/2014	Winter Weather	0	0	0
Mineral	1/3/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/3/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/3/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/3/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/3/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/3/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/3/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/3/2014	Extreme Cold/Wind Chill	0	0	0
Hampshire	1/5/2014	Winter Weather	0	0	0
Hardy	1/5/2014	Winter Weather	0	0	0
Mineral	1/5/2014	Winter Weather	0	0	0
Mineral	1/5/2014	Winter Weather	0	0	0
Hampshire	1/5/2014	Winter Weather	0	0	0
Hardy	1/5/2014	Winter Weather	0	0	0
Mineral	1/5/2014	Winter Weather	0	0	0
Mineral	1/5/2014	Winter Weather	0	0	0
Grant	1/6/2014	Winter Weather	0	0	0
Mineral	1/6/2014	Extreme Cold/Wind Chill	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Grant	1/6/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/6/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/6/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/6/2014	Winter Weather	0	0	0
Mineral	1/6/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/6/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/6/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/6/2014	Extreme Cold/Wind Chill	0	0	0
Hardy	1/7/2014	Extreme Cold/Wind Chill	0	0	0
Hampshire	1/7/2014	Extreme Cold/Wind Chill	0	0	0
Hardy	1/7/2014	Extreme Cold/Wind Chill	0	0	0
Hampshire	1/7/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/10/2014	Winter Weather	0	0	0
Pendleton	1/10/2014	Winter Weather	0	0	0
Mineral	1/10/2014	Winter Weather	0	0	0
Grant	1/10/2014	Winter Weather	0	0	0
Mineral	1/10/2014	Winter Weather	0	0	0
Hardy	1/10/2014	Winter Weather	0	0	0
Hampshire	1/10/2014	Winter Weather	0	0	0
Grant	1/10/2014	Winter Weather	0	0	0
Pendleton	1/10/2014	Winter Weather	0	0	0
Pendleton	1/10/2014	Winter Weather	0	0	0
Mineral	1/10/2014	Winter Weather	0	0	0
Grant	1/10/2014	Winter Weather	0	0	0
Mineral	1/10/2014	Winter Weather	0	0	0
Hardy	1/10/2014	Winter Weather	0	0	0
Hampshire	1/10/2014	Winter Weather	0	0	0
Grant	1/10/2014	Winter Weather	0	0	0
Grant	1/18/2014	Winter Weather	0	0	0
Pendleton	1/18/2014	Winter Weather	0	0	0
Grant	1/18/2014	Winter Weather	0	0	0
Pendleton	1/18/2014	Winter Weather	0	0	0
Pendleton	1/21/2014	Winter Storm	0	0	0
Pendleton	1/21/2014	Winter Storm	0	0	0
Grant	1/21/2014	Winter Storm	0	0	0
Grant	1/21/2014	Winter Storm	0	0	0
Hardy	1/21/2014	Winter Storm	0	0	0
Hampshire	1/21/2014	Winter Storm	0	0	0
Mineral	1/21/2014	Winter Storm	0	0	0
Mineral	1/21/2014	Winter Storm	0	0	0
Pendleton	1/21/2014	Winter Storm	0	0	0
Pendleton	1/21/2014	Winter Storm	0	0	0
Grant	1/21/2014	Winter Storm	0	0	0
Grant	1/21/2014	Winter Storm	0	0	0
Hardy	1/21/2014	Winter Storm	0	0	0
Hampshire	1/21/2014	Winter Storm	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Mineral	1/21/2014	Winter Storm	0	0	0
Mineral	1/21/2014	Winter Storm	0	0	0
Mineral	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Hampshire	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Hardy	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Hampshire	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Hardy	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/23/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/25/2014	Winter Weather	0	0	0
Pendleton	1/25/2014	Winter Storm	0	0	0
Grant	1/25/2014	Winter Storm	0	0	0
Mineral	1/25/2014	Winter Weather	0	0	0
Pendleton	1/25/2014	Winter Storm	0	0	0
Grant	1/25/2014	Winter Storm	0	0	0
Mineral	1/28/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/28/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/28/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/28/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/28/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/28/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/28/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/28/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/28/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/28/2014	Extreme Cold/Wind Chill	0	0	0



TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Mineral	1/29/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/29/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/29/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/29/2014	Extreme Cold/Wind Chill	0	0	0
Mineral	1/29/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/29/2014	Extreme Cold/Wind Chill	0	0	0
Pendleton	1/29/2014	Extreme Cold/Wind Chill	0	0	0
Grant	1/29/2014	Extreme Cold/Wind Chill	0	0	0
Hampshire	2/2/2014	Winter Storm	0	0	0
Hardy	2/2/2014	Winter Weather	0	0	0
Pendleton	2/2/2014	Winter Weather	0	0	0
Pendleton	2/2/2014	Winter Weather	0	0	0
Grant	2/2/2014	Winter Weather	0	0	0
Mineral	2/2/2014	Winter Weather	0	0	0
Grant	2/2/2014	Winter Weather	0	0	0
Mineral	2/2/2014	Winter Weather	0	0	0
Hampshire	2/2/2014	Winter Storm	0	0	0
Hardy	2/2/2014	Winter Weather	0	0	0
Pendleton	2/2/2014	Winter Weather	0	0	0
Pendleton	2/2/2014	Winter Weather	0	0	0
Grant	2/2/2014	Winter Weather	0	0	0
Mineral	2/2/2014	Winter Weather	0	0	0
Grant	2/2/2014	Winter Weather	0	0	0
Mineral	2/2/2014	Winter Weather	0	0	0
Mineral	2/4/2014	Winter Storm	0	0	0
Pendleton	2/4/2014	Winter Weather	0	0	0
Pendleton	2/4/2014	Winter Weather	0	0	0
Hampshire	2/4/2014	Winter Storm	0	0	0
Grant	2/4/2014	Winter Storm	0	0	0
Mineral	2/4/2014	Winter Storm	0	0	0
Grant	2/4/2014	Winter Storm	0	0	0
Mineral	2/4/2014	Winter Storm	0	0	0
Pendleton	2/4/2014	Winter Weather	0	0	0
Pendleton	2/4/2014	Winter Weather	0	0	0
Hampshire	2/4/2014	Winter Storm	0	0	0
Grant	2/4/2014	Winter Storm	0	0	0
Mineral	2/4/2014	Winter Storm	0	0	0
Grant	2/4/2014	Winter Storm	0	0	0
Hardy	2/5/2014	Winter Storm	0	0	0
Hardy	2/5/2014	Winter Storm	0	0	0
Grant	2/12/2014	Winter Storm	0	0	0
Pendleton	2/12/2014	Winter Storm	0	0	0
Mineral	2/12/2014	Winter Storm	0	0	0
Grant	2/12/2014	Winter Storm	0	0	0
Hardy	2/12/2014	Winter Storm	0	0	0
Pendleton	2/12/2014	Winter Storm	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Mineral	2/12/2014	Winter Storm	0	0	0
Hampshire	2/12/2014	Winter Storm	0	0	0
Grant	2/12/2014	Winter Storm	0	0	0
Pendleton	2/12/2014	Winter Storm	0	0	0
Mineral	2/12/2014	Winter Storm	0	0	0
Grant	2/12/2014	Winter Storm	0	0	0
Hardy	2/12/2014	Winter Storm	0	0	0
Pendleton	2/12/2014	Winter Storm	0	0	0
Mineral	2/12/2014	Winter Storm	0	0	0
Hampshire	2/12/2014	Winter Storm	0	0	0
Hampshire	2/15/2014	Winter Weather	0	0	0
Pendleton	2/15/2014	Winter Weather	0	0	0
Mineral	2/15/2014	Winter Weather	0	0	0
Grant	2/15/2014	Winter Weather	0	0	0
Pendleton	2/15/2014	Winter Weather	0	0	0
Hardy	2/15/2014	Winter Weather	0	0	0
Grant	2/15/2014	Winter Weather	0	0	0
Mineral	2/15/2014	Winter Weather	0	0	0
Hampshire	2/15/2014	Winter Weather	0	0	0
Pendleton	2/15/2014	Winter Weather	0	0	0
Mineral	2/15/2014	Winter Weather	0	0	0
Grant	2/15/2014	Winter Weather	0	0	0
Pendleton	2/15/2014	Winter Weather	0	0	0
Hardy	2/15/2014	Winter Weather	0	0	0
Grant	2/15/2014	Winter Weather	0	0	0
Mineral	2/15/2014	Winter Weather	0	0	0
Hampshire	2/19/2014	Winter Weather	0	0	0
Pendleton	2/19/2014	Winter Weather	0	0	0
Mineral	2/19/2014	Winter Weather	0	0	0
Grant	2/19/2014	Winter Weather	0	0	0
Hardy	2/19/2014	Winter Weather	0	0	0
Grant	2/19/2014	Winter Weather	0	0	0
Mineral	2/19/2014	Winter Weather	0	0	0
Pendleton	2/19/2014	Winter Weather	0	0	0
Hampshire	2/19/2014	Winter Weather	0	0	0
Pendleton	2/19/2014	Winter Weather	0	0	0
Mineral	2/19/2014	Winter Weather	0	0	0
Grant	2/19/2014	Winter Weather	0	0	0
Hardy	2/19/2014	Winter Weather	0	0	0
Grant	2/19/2014	Winter Weather	0	0	0
Mineral	2/19/2014	Winter Weather	0	0	0
Pendleton	2/19/2014	Winter Weather	0	0	0
Grant	2/26/2014	Winter Weather	0	0	0
Grant	2/26/2014	Winter Weather	0	0	0
Pendleton	3/2/2014	Winter Storm	0	0	0
Mineral	3/2/2014	Winter Weather	0	0	0



TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Grant	3/2/2014	Winter Weather	0	0	0
Grant	3/2/2014	Winter Weather	0	0	0
Mineral	3/2/2014	Winter Weather	0	0	0
Hardy	3/2/2014	Winter Weather	0	0	0
Hampshire	3/2/2014	Winter Weather	0	0	0
Grant	3/2/2014	Winter Weather	0	0	0
Pendleton	3/2/2014	Winter Storm	0	0	0
Pendleton	3/2/2014	Winter Storm	0	0	0
Mineral	3/2/2014	Winter Weather	0	0	0
Grant	3/2/2014	Winter Weather	0	0	0
Grant	3/2/2014	Winter Weather	0	0	0
Mineral	3/2/2014	Winter Weather	0	0	0
Hardy	3/2/2014	Winter Weather	0	0	0
Hampshire	3/2/2014	Winter Weather	0	0	0
Grant	3/2/2014	Winter Weather	0	0	0
Pendleton	3/2/2014	Winter Storm	0	0	0
Pendleton	3/16/2014	Winter Storm	0	0	0
Pendleton	3/16/2014	Winter Storm	0	0	0
Hardy	3/16/2014	Winter Storm	0	0	0
Mineral	3/16/2014	Winter Weather	0	0	0
Grant	3/16/2014	Winter Storm	0	0	0
Mineral	3/16/2014	Winter Storm	0	0	0
Grant	3/16/2014	Winter Storm	0	0	0
Pendleton	3/16/2014	Winter Storm	0	0	0
Pendleton	3/16/2014	Winter Storm	0	0	0
Hardy	3/16/2014	Winter Storm	0	0	0
Mineral	3/16/2014	Winter Weather	0	0	0
Grant	3/16/2014	Winter Storm	0	0	0
Mineral	3/16/2014	Winter Storm	0	0	0
Grant	3/16/2014	Winter Storm	0	0	0
Grant	3/25/2014	Winter Weather	0	0	0
Pendleton	3/25/2014	Winter Storm	0	0	0
Grant	3/25/2014	Winter Weather	0	0	0
Pendleton	3/25/2014	Winter Storm	0	0	0
Grant	3/30/2014	Winter Storm	0	0	0
Pendleton	3/30/2014	Winter Storm	0	0	0
Grant	3/30/2014	Winter Storm	0	0	0
Pendleton	3/30/2014	Winter Storm	0	0	0
Grant	11/18/2014	Cold/Wind Chill	0	0	0
Mineral	11/18/2014	Cold/Wind Chill	0	0	0
Grant	11/18/2014	Cold/Wind Chill	0	0	0
Pendleton	11/18/2014	Cold/Wind Chill	0	0	0
Pendleton	11/18/2014	Cold/Wind Chill	0	0	0
Pendleton	11/26/2014	Winter Storm	0	0	0
Mineral	11/26/2014	Winter Storm	0	0	0
Mineral	11/26/2014	Winter Storm	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Hardy	11/26/2014	Winter Storm	0	0	0
Hampshire	11/26/2014	Winter Storm	0	0	0
Grant	11/26/2014	Winter Storm	0	0	0
Grant	11/26/2014	Winter Storm	0	0	0
Pendleton	11/26/2014	Winter Storm	0	0	0
Grant	11/27/2014	Winter Weather	0	0	0
Pendleton	11/27/2014	Winter Weather	0	0	0
Pendleton	12/2/2014	Winter Weather	0	0	0
Mineral	12/2/2014	Winter Weather	0	0	0
Grant	12/2/2014	Winter Weather	0	0	0
Hardy	12/2/2014	Winter Weather	0	0	0
Hampshire	12/2/2014	Winter Weather	0	0	0
Pendleton	12/2/2014	Winter Weather	0	0	0
Mineral	12/2/2014	Winter Weather	0	0	0
Grant	12/2/2014	Winter Weather	0	0	0
Grant	12/4/2014	Winter Weather	0	0	0
Hardy	12/4/2014	Winter Weather	0	0	0
Mineral	12/4/2014	Winter Weather	0	0	0
Pendleton	12/4/2014	Winter Weather	0	0	0
Grant	12/4/2014	Winter Weather	0	0	0
Mineral	12/4/2014	Winter Weather	0	0	0
Pendleton	12/4/2014	Winter Weather	0	0	0
Hampshire	12/4/2014	Winter Weather	0	0	0
Pendleton	12/8/2014	Winter Weather	0	0	0
Pendleton	12/8/2014	Winter Weather	0	0	0
Grant	12/8/2014	Winter Weather	0	0	0
Grant	12/8/2014	Winter Weather	0	0	0
Hampshire	12/8/2014	Winter Weather	0	0	0
Mineral	12/8/2014	Winter Weather	0	0	0
Mineral	12/8/2014	Winter Weather	0	0	0
Hardy	12/8/2014	Winter Weather	0	0	0
Hampshire	12/22/2014	Winter Weather	0	0	0
Mineral	12/22/2014	Winter Weather	0	0	0
Mineral	12/22/2014	Winter Weather	0	0	0
Grant	12/22/2014	Winter Weather	0	0	0
Grant	12/22/2014	Winter Weather	0	0	0
Hardy	12/22/2014	Winter Weather	0	0	0
Pendleton	12/22/2014	Winter Weather	0	0	0
Pendleton	12/22/2014	Winter Weather	0	0	0
Mineral	1/3/2015	Winter Weather	0	0	0
Hardy	1/3/2015	Winter Weather	0	0	0
Grant	1/3/2015	Winter Weather	0	0	0
Grant	1/3/2015	Winter Weather	0	0	0
Pendleton	1/3/2015	Winter Weather	0	0	0
Pendleton	1/3/2015	Winter Weather	0	0	0
Hampshire	1/3/2015	Winter Weather	0	0	0



TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Mineral	1/3/2015	Winter Weather	0	0	0
Hampshire	1/6/2015	Winter Weather	0	0	0
Grant	1/6/2015	Heavy Snow	0	0	0
Pendleton	1/6/2015	Winter Weather	0	0	0
Pendleton	1/6/2015	Winter Weather	0	0	0
Hardy	1/6/2015	Winter Weather	0	0	0
Hampshire	1/11/2015	Winter Weather	0	0	0
Grant	1/11/2015	Winter Weather	0	0	0
Hardy	1/11/2015	Winter Weather	0	0	0
Pendleton	1/23/2015	Ice Storm	0	0	0
Pendleton	1/26/2015	Winter Weather	0	0	0
Grant	1/26/2015	Winter Weather	0	0	0
Hampshire	1/29/2015	Winter Weather	0	0	0
Mineral	1/29/2015	Winter Weather	0	0	0
Grant	2/14/2015	Winter Weather	0	0	0
Mineral	2/14/2015	Extreme Cold/Wind Chill	0	0	0
Mineral	2/14/2015	Extreme Cold/Wind Chill	0	0	0
Pendleton	2/14/2015	Extreme Cold/Wind Chill	0	0	0
Pendleton	2/14/2015	Extreme Cold/Wind Chill	0	0	0
Hampshire	2/16/2015	Winter Weather	0	0	0
Grant	2/16/2015	Winter Weather	0	0	0
Grant	2/16/2015	Winter Weather	0	0	0
Pendleton	2/16/2015	Winter Weather	0	0	0
Pendleton	2/16/2015	Winter Weather	0	0	0
Hardy	2/16/2015	Winter Weather	0	0	0
Mineral	2/21/2015	Winter Weather	0	0	0
Mineral	2/21/2015	Winter Weather	0	0	0
Grant	2/21/2015	Winter Weather	0	0	0
Pendleton	2/21/2015	Winter Storm	0	0	0
Pendleton	2/21/2015	Winter Storm	0	0	0
Hardy	2/21/2015	Winter Storm	0	0	0
Hampshire	2/21/2015	Winter Storm	0	0	0
Grant	2/21/2015	Winter Storm	0	0	0
Pendleton	2/26/2015	Winter Weather	0	0	0
Grant	3/1/2015	Winter Weather	0	0	0
Grant	3/1/2015	Winter Weather	0	0	0
Mineral	3/1/2015	Winter Weather	0	0	0
Mineral	3/1/2015	Winter Weather	0	0	0
Hardy	3/1/2015	Winter Weather	0	0	0
Hampshire	3/1/2015	Winter Weather	0	0	0
Pendleton	3/1/2015	Winter Weather	0	0	0
Pendleton	3/1/2015	Winter Weather	0	0	0
Mineral	3/3/2015	Winter Weather	0	0	0
Hampshire	3/3/2015	Winter Weather	0	0	0
Hardy	3/3/2015	Winter Weather	0	0	0
Pendleton	3/3/2015	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Grant	3/3/2015	Winter Weather	0	0	0
Grant	3/3/2015	Winter Weather	0	0	0
Mineral	3/3/2015	Winter Weather	0	0	0
Mineral	3/4/2015	Winter Storm	0	0	0
Grant	3/4/2015	Winter Storm	0	0	0
Pendleton	3/5/2015	Winter Storm	0	0	0
Mineral	3/5/2015	Winter Storm	0	0	0
Pendleton	3/5/2015	Winter Storm	0	0	0
Grant	3/5/2015	Winter Storm	0	0	0
Hardy	3/5/2015	Winter Storm	0	0	0
Hampshire	3/5/2015	Winter Storm	0	0	0
Hampshire	3/20/2015	Winter Weather	0	0	0
Hardy	3/25/2015	Winter Weather	0	0	0
Grant	3/25/2015	Winter Weather	0	0	0
Grant	3/25/2015	Winter Weather	0	0	0
Hampshire	3/25/2015	Winter Weather	0	0	0
Mineral	3/25/2015	Winter Weather	0	0	0
Mineral	3/25/2015	Winter Weather	0	0	0
Mineral	12/28/2015	Winter Weather	0	0	0
Pendleton	1/8/2016	Winter Weather	0	0	0
Hardy	1/8/2016	Winter Weather	0	0	0
Grant	1/8/2016	Winter Weather	0	0	0
Grant	1/8/2016	Winter Weather	0	0	0
Pendleton	1/8/2016	Winter Weather	0	0	0
Hampshire	1/8/2016	Winter Weather	0	0	0
Mineral	1/8/2016	Winter Weather	0	0	0
Mineral	1/8/2016	Winter Weather	0	0	0
Mineral	1/12/2016	Winter Weather	0	0	0
Grant	1/12/2016	Winter Weather	0	0	0
Grant	1/12/2016	Winter Weather	0	0	0
Pendleton	1/12/2016	Winter Weather	0	0	0
Pendleton	1/22/2016	Winter Storm	0	0	0
Pendleton	1/22/2016	Winter Storm	0	0	0
Grant	1/22/2016	Winter Storm	0	0	0
Hardy	1/22/2016	Winter Storm	0	0	0
Grant	1/22/2016	Winter Storm	0	0	0
Mineral	1/22/2016	Winter Storm	0	0	0
Hampshire	1/22/2016	Winter Storm	0	0	0
Mineral	1/22/2016	Winter Storm	0	0	0
Grant	1/26/2016	Winter Weather	0	0	0
Hardy	1/26/2016	Winter Weather	0	0	0
Hampshire	1/26/2016	Winter Weather	0	0	0
Mineral	1/26/2016	Winter Weather	0	0	0
Grant	1/29/2016	Winter Weather	0	0	0
Pendleton	1/29/2016	Winter Weather	0	0	0
Pendleton	2/8/2016	Winter Weather	0	0	0



TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Mineral	2/8/2016	Winter Weather	0	0	0
Grant	2/8/2016	Winter Weather	0	0	0
Hampshire	2/9/2016	Winter Weather	0	0	0
Pendleton	2/9/2016	Winter Weather	0	0	0
Grant	2/9/2016	Winter Weather	0	0	0
Mineral	2/9/2016	Winter Weather	0	0	0
Hardy	2/9/2016	Winter Weather	0	0	0
Mineral	2/14/2016	Ice Storm	0	0	0
Pendleton	2/14/2016	Winter Weather	0	0	0
Grant	2/14/2016	Winter Weather	0	0	0
Hardy	2/14/2016	Ice Storm	0	0	0
Grant	2/14/2016	Ice Storm	0	0	0
Pendleton	2/14/2016	Ice Storm	0	0	0
Hampshire	2/14/2016	Ice Storm	0	0	0
Mineral	2/14/2016	Ice Storm	0	0	0
Pendleton	3/19/2016	Winter Storm	0	0	0
Mineral	3/19/2016	Winter Weather	0	0	0
Grant	3/19/2016	Winter Weather	0	0	0
Grant	3/19/2016	Winter Weather	0	0	0
Pendleton	3/19/2016	Winter Weather	0	0	0
Mineral	3/19/2016	Winter Weather	0	0	0
Hampshire	3/19/2016	Winter Weather	0	0	0
Hardy	3/19/2016	Winter Weather	0	0	0
Grant	4/2/2016	Winter Weather	0	0	0
Grant	4/9/2016	Winter Storm	0	0	0
Grant	11/19/2016	Winter Weather	0	0	0
Pendleton	11/19/2016	Winter Weather	0	0	0
Grant	12/2/2016	Winter Weather	0	0	0
Pendleton	12/2/2016	Winter Weather	0	0	0
Mineral	12/2/2016	Winter Weather	0	0	0
Pendleton	12/4/2016	Winter Weather	0	0	0
Mineral	12/4/2016	Winter Weather	0	0	0
Grant	12/4/2016	Winter Weather	0	0	0
Grant	12/6/2016	Winter Weather	0	0	0
Pendleton	12/6/2016	Winter Weather	0	0	0
Mineral	12/6/2016	Winter Weather	0	0	0
Mineral	12/6/2016	Winter Storm	0	0	0
Hampshire	12/6/2016	Winter Weather	0	0	0
Grant	12/6/2016	Winter Weather	0	0	0
Mineral	12/11/2016	Winter Weather	0	0	0
Grant	12/11/2016	Winter Weather	0	0	0
Grant	12/11/2016	Winter Weather	0	0	0
Grant	12/11/2016	Winter Weather	0	0	0
Pendleton	12/11/2016	Winter Weather	0	0	0
Hampshire	12/11/2016	Winter Weather	0	0	0
Grant	12/15/2016	Cold/Wind Chill	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA

County	Date	Event	Deaths	Injury	Property Damage
Pendleton	12/15/2016	Cold/Wind Chill	0	0	0
Pendleton	12/15/2016	Cold/Wind Chill	0	0	0
Mineral	12/15/2016	Cold/Wind Chill	0	0	0
Mineral	12/17/2016	Winter Weather	0	0	0
Grant	12/17/2016	Winter Weather	0	0	0
Hampshire	12/17/2016	Winter Weather	0	0	0
Grant	12/17/2016	Winter Weather	0	0	0
Hardy	12/17/2016	Winter Weather	0	0	0
Pendleton	12/17/2016	Winter Weather	0	0	0
Pendleton	12/17/2016	Winter Weather	0	0	0
Mineral	12/17/2016	Winter Weather	0	0	0
Mineral	12/18/2016	Winter Weather	0	0	0
Mineral	12/29/2016	Winter Weather	0	0	0
Hardy	12/29/2016	Winter Weather	0	0	0
Hampshire	12/29/2016	Winter Weather	0	0	0
Grant	12/29/2016	Winter Weather	0	0	0
Grant	12/29/2016	Winter Weather	0	0	0
Mineral	12/29/2016	Winter Weather	0	0	0
Mineral	12/29/2016	Winter Weather	0	0	0
Grant	12/29/2016	Winter Storm	0	0	0
Pendleton	12/29/2016	Winter Storm	0	0	0
Grant	1/5/2017	Winter Weather	0	0	0
Mineral	1/5/2017	Winter Weather	0	0	0
Pendleton	1/5/2017	Winter Weather	0	0	0
Hampshire	1/5/2017	Winter Weather	0	0	0
Hardy	1/5/2017	Winter Weather	0	0	0
Mineral	1/10/2017	Winter Weather	0	0	0
Hampshire	1/10/2017	Winter Weather	0	0	0
Grant	1/10/2017	Winter Weather	0	0	0
Hardy	1/10/2017	Winter Weather	0	0	0
Grant	1/10/2017	Winter Weather	0	0	0
Mineral	1/10/2017	Winter Weather	0	0	0
Mineral	1/13/2017	Winter Weather	0	0	0
Grant	1/14/2017	Winter Weather	0	0	0
Pendleton	1/14/2017	Winter Weather	0	0	0
Pendleton	1/14/2017	Winter Weather	0	0	0
Hardy	1/14/2017	Winter Weather	0	0	0
Grant	1/14/2017	Winter Weather	0	0	0
Hampshire	1/14/2017	Winter Weather	0	0	0
Mineral	1/14/2017	Winter Weather	0	0	0
Mineral	1/23/2017	Winter Weather	0	0	0
Pendleton	1/23/2017	Winter Weather	0	0	0
Grant	1/23/2017	Winter Weather	0	0	0
Grant	1/26/2017	Winter Weather	0	0	0
Grant	1/29/2017	Winter Weather	0	0	0
Pendleton	1/29/2017	Winter Weather	0	0	0

TABLE 5.1.N NCEI SEVERE WINTER WEATHER DATA					
County	Date	Event	Deaths	Injury	Property Damage
Grant	2/1/2017	Winter Weather	0	0	0
Grant	2/9/2017	Winter Weather	0	0	0
Mineral	2/9/2017	Winter Weather	0	0	0
Pendleton	2/9/2017	Winter Weather	0	0	0
Grant	2/15/2017	Winter Weather	0	0	0
Pendleton	2/15/2017	Winter Weather	0	0	0
Grant	3/10/2017	Winter Weather	0	0	0
Mineral	3/10/2017	Winter Weather	0	0	0
Grant	3/13/2017	Winter Storm	0	0	0
Mineral	3/13/2017	Winter Storm	0	0	0
Pendleton	3/13/2017	Winter Storm	0	0	0
Hampshire	3/13/2017	Winter Storm	0	0	0
Hardy	3/13/2017	Winter Storm	0	0	0
Grant	3/13/2017	Winter Storm	0	0	0
Mineral	3/13/2017	Winter Storm	0	0	0
Pendleton	3/13/2017	Winter Storm	0	0	0
Grant	3/14/2017	Cold/Wind Chill	0	0	0
Pendleton	3/14/2017	Cold/Wind Chill	0	0	0
Pendleton	3/14/2017	Cold/Wind Chill	0	0	0
Mineral	3/14/2017	Cold/Wind Chill	0	0	0
Pendleton	3/17/2017	Winter Weather	0	0	0
Hampshire	3/24/2017	Winter Weather	0	0	0
Mineral	3/24/2017	Winter Weather	0	0	0
Mineral	3/24/2017	Winter Weather	0	0	0
Grant	4/6/2017	Winter Weather	0	0	0
Pendleton	4/6/2017	Winter Weather	0	0	0
Grant	10/29/2017	Winter Weather	0	0	0
<b>Totals</b>			<b>0</b>	<b>0</b>	<b>1,618,000</b>

TABLE 5.1.O SHELDUS SEVERE WINTER WEATHER DATA							
County	Hazard	Year	Month	Crop Damage (ADJ 2016)	Property Damage (ADJ 2016)	Injuries	Fatalities
Grant	Winter Weather	1960	2	\$0	\$751	0	0
Hampshire	Winter Weather	1960	2	\$0	\$751	0	0
Hardy	Winter Weather	1960	2	\$0	\$751	0	0
Mineral	Winter Weather	1960	2	\$0	\$751	0	0
Pendleton	Winter Weather	1960	2	\$0	\$751	0	0
Grant	Winter Weather	1960	3	\$0	\$751	0	0
Hampshire	Winter Weather	1960	3	\$0	\$751	0	0
Hardy	Winter Weather	1960	3	\$0	\$751	0	0
Mineral	Winter Weather	1960	3	\$0	\$751	0	0



**TABLE 5.1.O SHELUDS SEVERE WINTER WEATHER DATA**

<i>County</i>	<i>Hazard</i>	<i>Year</i>	<i>Month</i>	<i>Crop Damage (ADJ 2016)</i>	<i>Property Damage (ADJ 2016)</i>	<i>Injuries</i>	<i>Fatalities</i>
Pendleton	Winter Weather	1960	3	\$0	\$751	0	0
Grant	Winter Weather	1961	1	\$0	\$0	0	0.22
Hampshire	Winter Weather	1961	1	\$0	\$0	0	0.22
Hardy	Winter Weather	1961	1	\$0	\$0	0	0.22
Mineral	Winter Weather	1961	1	\$0	\$0	0	0.22
Pendleton	Winter Weather	1961	1	\$0	\$0	0	0.22
Grant	Winter Weather	1966	1	\$0	\$309	0.05	0
Hampshire	Winter Weather	1966	1	\$0	\$309	0.05	0
Hardy	Winter Weather	1966	1	\$0	\$309	0.05	0
Mineral	Winter Weather	1966	1	\$0	\$309	0.05	0
Pendleton	Winter Weather	1966	1	\$0	\$137	0	0
Grant	Winter Weather	1967	12	\$0	\$665	0	0
Hampshire	Winter Weather	1967	12	\$0	\$665	0	0
Hardy	Winter Weather	1967	12	\$0	\$665	0	0
Mineral	Winter Weather	1967	12	\$0	\$665	0	0
Pendleton	Winter Weather	1967	12	\$0	\$665	0	0
Grant	Winter Weather	1968	1	\$0	\$638	0	0
Hampshire	Winter Weather	1968	1	\$0	\$638	0	0
Hardy	Winter Weather	1968	1	\$0	\$638	0	0
Mineral	Winter Weather	1968	1	\$0	\$638	0	0
Pendleton	Winter Weather	1968	1	\$0	\$638	0	0
Grant	Winter Weather	1968	11	\$0	\$195	0	0
Hampshire	Winter Weather	1968	11	\$0	\$195	0	0
Hardy	Winter Weather	1968	11	\$0	\$195	0	0
Mineral	Winter Weather	1968	11	\$0	\$195	0	0
Pendleton	Winter Weather	1968	11	\$0	\$195	0	0
Grant	Winter Weather	1974	12	\$0	\$0	0	0.01
Hampshire	Winter Weather	1974	12	\$0	\$0	0	0.01
Hardy	Winter Weather	1974	12	\$0	\$0	0	0.01
Mineral	Winter Weather	1974	12	\$0	\$0	0	0.01
Pendleton	Winter Weather	1974	12	\$0	\$0	0	0.01
Grant	Winter Weather	1975	1	\$0	\$413	0	0
Hampshire	Winter Weather	1975	1	\$0	\$413	0	0
Hardy	Winter Weather	1975	1	\$0	\$413	0	0
Mineral	Winter Weather	1975	1	\$0	\$413	0	0
Pendleton	Winter Weather	1975	1	\$0	\$413	0	0
Grant	Winter Weather	1977	1	\$0	\$3,666	0	0
Hampshire	Winter Weather	1977	1	\$0	\$3,666	0	0
Hardy	Winter Weather	1977	1	\$0	\$3,666	0	0
Mineral	Winter Weather	1977	1	\$0	\$3,666	0	1
Pendleton	Winter Weather	1977	1	\$0	\$3,666	0	0
Grant	Winter Weather	1977	5	\$36,660	\$0	0	0
Hampshire	Winter Weather	1977	5	\$36,660	\$0	0	0
Hardy	Winter Weather	1977	5	\$36,660	\$0	0	0



**TABLE 5.1.O SHELDTUS SEVERE WINTER WEATHER DATA**

<i>County</i>	<i>Hazard</i>	<i>Year</i>	<i>Month</i>	<i>Crop Damage (ADJ 2016)</i>	<i>Property Damage (ADJ 2016)</i>	<i>Injuries</i>	<i>Fatalities</i>
Mineral	Winter Weather	1977	5	\$36,660	\$0	0	0
Pendleton	Winter Weather	1977	5	\$36,660	\$0	0	0
Grant	Winter Weather	1979	10	\$1,403	\$14,025	0	0
Hampshire	Winter Weather	1979	10	\$1,403	\$14,025	0	0
Hardy	Winter Weather	1979	10	\$1,403	\$14,025	0	0
Mineral	Winter Weather	1979	10	\$1,403	\$14,025	0	0
Pendleton	Winter Weather	1979	10	\$1,403	\$14,025	0	0
Grant	Winter Weather	1980	3	\$0	\$40	0	0
Hampshire	Winter Weather	1980	3	\$0	\$40	0	0
Hardy	Winter Weather	1980	3	\$0	\$40	0	0
Mineral	Winter Weather	1980	3	\$0	\$40	0	0
Pendleton	Winter Weather	1980	3	\$0	\$40	0	0
Grant	Winter Weather	1982	3	\$0	\$23	0	0
Hampshire	Winter Weather	1982	3	\$0	\$23	0	0
Hardy	Winter Weather	1982	3	\$0	\$23	0	0
Mineral	Winter Weather	1982	3	\$0	\$23	0	0
Pendleton	Winter Weather	1982	3	\$0	\$23	0	0
Grant	Winter Weather	1983	12	\$0	\$0	0.16	0
Hampshire	Winter Weather	1983	12	\$0	\$0	0.16	0
Hardy	Winter Weather	1983	12	\$0	\$0	0.16	0
Mineral	Winter Weather	1983	12	\$0	\$0	0.16	0
Pendleton	Winter Weather	1983	12	\$0	\$0	0.16	0
Grant	Winter Weather	1984	1	\$0	\$784	0.33	0
Hampshire	Winter Weather	1984	1	\$0	\$784	0.33	0
Mineral	Winter Weather	1984	1	\$0	\$784	0.33	0
Pendleton	Winter Weather	1984	1	\$0	\$784	0.33	0
Grant	Winter Weather	1987	2	\$0	\$9,778	0	0
Hampshire	Winter Weather	1987	2	\$0	\$9,778	0	0
Hardy	Winter Weather	1987	2	\$0	\$9,778	0	0
Mineral	Winter Weather	1987	2	\$0	\$9,778	0	0
Pendleton	Winter Weather	1987	2	\$0	\$9,778	0	0
Grant	Winter Weather	1987	4	\$0	\$1,956	0	0.05
Hampshire	Winter Weather	1987	4	\$0	\$1,956	0	0.05
Hardy	Winter Weather	1987	4	\$0	\$1,956	0	0.05
Mineral	Winter Weather	1987	4	\$0	\$1,956	0	0.05
Pendleton	Winter Weather	1987	4	\$0	\$1,956	0	0.05
Pendleton	Winter Weather	1991	11	\$0	\$1,025,271	0	0
Grant	Winter Weather	1991	12	\$0	\$1,121	0	0
Hampshire	Winter Weather	1991	12	\$0	\$1,121	0	0
Hardy	Winter Weather	1991	12	\$0	\$1,121	0	0
Mineral	Winter Weather	1991	12	\$0	\$1,121	0	0
Pendleton	Winter Weather	1991	12	\$0	\$1,121	0	0
Grant	Winter Weather	1992	12	\$0	\$17,446	0	0
Hampshire	Winter Weather	1992	12	\$0	\$17,446	0	0



**TABLE 5.1.O SHELDTUS SEVERE WINTER WEATHER DATA**

<i>County</i>	<i>Hazard</i>	<i>Year</i>	<i>Month</i>	<i>Crop Damage (ADJ 2016)</i>	<i>Property Damage (ADJ 2016)</i>	<i>Injuries</i>	<i>Fatalities</i>
Hardy	Winter Weather	1992	12	\$0	\$17,446	0	0
Mineral	Winter Weather	1992	12	\$0	\$17,446	0	0
Pendleton	Winter Weather	1992	12	\$0	\$17,446	0	0
Grant	Winter Weather	1993	3	\$0	\$1,057	0	0
Hampshire	Winter Weather	1993	3	\$0	\$1,057	0	0
Hardy	Winter Weather	1993	3	\$0	\$1,057	0	0
Mineral	Winter Weather	1993	3	\$0	\$1,057	0	0
Pendleton	Winter Weather	1993	3	\$0	\$1,057	0	0
Grant	Winter Weather	1994	1	\$0	\$99,926	0.02	0
Hampshire	Winter Weather	1994	1	\$0	\$278,836	0.02	0
Hardy	Winter Weather	1994	1	\$0	\$99,926	0.02	0
Mineral	Winter Weather	1994	1	\$0	\$115,591	0.02	0
Pendleton	Winter Weather	1994	1	\$0	\$99,101	0.02	0
Grant	Winter Weather	1994	2	\$989	\$24,899	0	0
Hampshire	Winter Weather	1994	2	\$907	\$83,436	0	0
Hardy	Winter Weather	1994	2	\$1,649	\$90,774	0	0
Mineral	Winter Weather	1994	2	\$165	\$9,152	0	0
Pendleton	Winter Weather	1994	2	\$165	\$9,069	0	0
Grant	Winter Weather	1994	3	\$0	\$824	0	0
Hampshire	Winter Weather	1994	3	\$0	\$824	0	0
Hardy	Winter Weather	1994	3	\$0	\$824	0	0
Mineral	Winter Weather	1994	3	\$0	\$1,649	0	0
Pendleton	Winter Weather	1994	3	\$0	\$824	0	0
Grant	Winter Weather	1995	11	\$0	\$12,828	0	0
Hampshire	Winter Weather	1995	11	\$0	\$12,828	0	0
Hardy	Winter Weather	1995	11	\$0	\$12,828	0	0
Mineral	Winter Weather	1995	11	\$0	\$12,828	0	0
<b>TOTALS</b>				<b>\$7,362,280</b>	<b>\$7,765,065</b>	<b>3.42</b>	<b>2.4</b>



HAZARDOUS MATERIALS

TABLE 5.1.P NRC HAZARDOUS MATERIALS INCIDENTS				
<i>Type of Incident</i>	<i>Incident Cause</i>	<i>Date</i>	<i>Nearest City</i>	<i>County</i>
Mobile	Operator Error	02/01/10	Mt. Storm	Grant
Railroad	Derailment	03/05/10	Bayard	Grant
Fixed Facility	Dumping	04/28/10	Mathias	Hardy
Fixed Facility	Explosion	05/24/10	Rocket Center	Mineral
Fixed Facility	Natural Phenomenon	06/03/10	Levels	Hampshire
Railroad	Derailment	08/03/10	Bayard	Grant
Fixed Facility	Unknown	11/12/10	Seneca Rocks	Pendleton
Railroad	Operator Error	02/15/11	Keyser	Mineral
Fixed Facility	Other	03/22/11	Bayard	Grant
Mobile	Dumping	04/22/11	Wardensville	Hardy
Storage Tank	Operator Error	04/24/11	Moorefield	Hardy
Fixed Facility	Other	06/16/11	Ridgeley	Mineral
Fixed Facility	Equipment Failure	07/25/11	Beryl	Mineral
Fixed Facility	Natural Phenomenon	09/01/11	Green Spring	Hampshire
Fixed Facility	Unknown	09/03/11	Keyser	Mineral
Fixed Facility	Other	09/07/11	Keyser	Mineral
Pipeline	Operator Error	12/15/11	Elk Garden	Mineral
Railroad	Transport Accident	12/26/11	Bayard	Grant
Unknown Sheen	Unknown	01/30/12	Keyser	Mineral
Fixed Facility	Unknown	02/29/12	Rocket Center	Mineral
Unknown Sheen	Unknown	05/25/12	Scherr	Grant
Railroad	Trespasser	03/24/13	Keyser	Mineral
Fixed Facility	Equipment Failure	05/30/13	Mt. Storm	Grant
Fixed Facility	Equipment Failure	05/30/13	Mt. Storm	Grant
Mobile	Transport Accident	06/13/13	Scherr	Grant
Railroad	Equipment Failure	06/16/13		Mineral
Railroad	Operator Error	07/20/13	Piedmont	Mineral
Railroad	Unknown	08/17/13	Paw Paw	Hampshire
Fixed Facility	Other	11/05/13	Keyser	Mineral
Fixed Facility	Other	04/16/14	Mt. Storm	Grant
Fixed Facility	Unknown	04/26/14	Franklin	Pendleton
Fixed Facility	Dumping	05/17/14	Keyser	Mineral
Pipeline	Unknown	06/30/14	Green Spring	Hampshire
Storage Tank	Equipment Failure	07/07/14	Green Spring	Hampshire
Fixed Facility	Operator Error	07/11/14	Green Spring	Hampshire
Fixed Facility	Unknown	07/24/14	Wardensville	Hardy
Fixed Facility	Unknown	07/25/14	Petersburg	Grant
Fixed Facility	Unknown	08/16/14	Petersburg	Grant
Railroad	Unknown	10/28/14	Keyser	Mineral
Railroad	Unknown	11/03/14	Piedmont	Mineral
Railroad	Derailment	02/03/15	Levels	Hampshire
Fixed Facility	Unknown	02/11/15	Romney	Hampshire
Fixed Facility	Other	03/12/15	Ridgeley	Mineral

TABLE 5.1.P NRC HAZARDOUS MATERIALS INCIDENTS				
Type of Incident	Incident Cause	Date	Nearest City	County
Fixed Facility	Unknown	03/25/15	Lost River	Hardy
Storage Tank	Operator Error	04/13/15	Riverton	Pendleton
Fixed Facility	Operator Error	04/26/15	Green Spring	Hampshire
Fixed Facility	Unknown	05/17/15	Moorefield	Hardy
Railroad	Unknown	07/13/15	Cumberland	Mineral
Fixed Facility	Dumping	08/11/15	Delray	Hampshire
Fixed Facility	Unknown	08/21/15	Capon Springs	Hampshire
Mobile	Other	09/10/15	Mt. Storm	Grant
Storage Tank	Operator Error	11/09/15	Green Spring	Hampshire
Storage Tank	Equipment Failure	12/01/15	Green Spring	Hampshire
Fixed Facility	Other	06/13/16	Keyser	Mineral
Railroad	Unknown	10/21/16	Keyser	Mineral
Fixed Facility	Equipment Failure	01/08/17	Augusta	Hampshire
Fixed Facility	Equipment Failure	02/14/17	Mt. Storm	Grant
Fixed Facility	Unknown	03/14/17	Mt. Storm	Grant
Fixed Facility	Equipment Failure	06/19/17	Mt. Storm	Grant
Fixed Facility	Unknown	11/30/17	Piedmont	Mineral
Fixed Facility	Dumping	11/30/17	Petersburg	Grant
Fixed Facility	Unknown	12/01/17	Piedmont	Mineral

TABLE 5.1.Q PHMSA HAZARDOUS MATERIALS INCIDENTS					
County	Incident City	Date of Incident	Mode of Transportation	Transportation Phase	Total Amount of Damages
Hampshire	Green Spring	8/16/1990	Rail	In transit	\$0
Pendleton	Franklin	7/15/1994	Highway	In transit	\$0
Mineral	Beryl	9/28/1995	Rail	In transit	\$10
Mineral	Keyser	6/1/1996	Rail	In transit	\$0
Mineral	Piedmont	6/5/1996	Rail	In transit	\$0
Mineral	Keyser	11/5/1997	Highway	Unloading	\$650
Mineral	WV Central Junction	1/13/2001	Rail	In transit	\$0
Grant	Petersburg	10/15/2001	Highway	Unloading	\$1,972
Hardy	Wardensville	11/19/2001	Highway	Unloading	\$250,360
Mineral	Piedmont	9/18/2002	Highway	Unloading	\$3
Hampshire	Romney	5/11/2004	Highway	In transit	\$132,158
Grant	Petersburg	12/20/2004	Highway	In transit	\$16,812
Mineral	Fountain	9/22/2005	Highway	In transit	\$50,230
Pendleton	Franklin	7/3/2006	Highway	In transit	\$0
Hardy	Moorefield	9/28/2007	Highway	Unloading	\$0
Hardy	Moorefield	9/28/2007	Highway	Unloading	\$0
Hardy	Moorefield	4/24/2011	Highway	Unloading	\$33,289
<b>Totals</b>					<b>\$485,484</b>

## APPENDIX 2

# PROCESS AND PARTICIPATION

Region 8 Planning and Development Council - July 20, 2017

✓ If correct	Last	First	Address	Telephone	Email
	Alderman	Greg	PO Box 7, Wardensville, WV 26851	304-874-3950	
✓	Veteran Armentrout	Butch	P.O. Box 7 Ridgeley, WV 26753	304-738-1612 (w)	carp7@atlanticbb.net
✓	Ashley	Joan	457 Ashley Lane, Franklin, WV 26807	304-358-2572 (h)	joan.ashley@frontier.com
	Bean	William	P.O. Drawer 30 Moorefield, WV 26807	304-530-6198 (w)	gentlemenfirst@yahoo.com
	Bland	Michael	150 Armstrong Street Keyser, WV 26726	304-788-5921 (w)	mbland@mineralcountywv.com
✓	Braithwaite	Tom	P.O. Box 256, Elk Garden, WV 26717	304-446-5684 (h)	wbraithwaite@shentel.net
✓	Brill	Alan	5864 Carpers Pike, Yellow Springs, WV 26865	304-856-3635 (h)	abrill@frontiernet.net
	Carr	Lynn	PO Box 1290, Ridgeley, WV 26753	304-738-9400 (w)	ridgeleymayor@atlanticbbn.net
	Combs	Mallie	P.O. 209 Moorefield, WV 26836	304-530-3047 (w)	mjcombs@hardynet.com
	Durst	Steven	P.O. Box 274, Bayard, WV 26707		
	Funkhouser	Amy	92 Middle Cove Road, Mathias, WV 26812	304-874-3512	
	Hammond	John	P.O. Box 177, Yellow Springs, WV 26865	304-874-4115 (h)	john@asaclinehouse.com
✓	Helmick	Rose	204 Washington Street, Moorefield, WV 26836	304-530-0284	hdycommi@court.state.wv.us
	Hevener	Carl	343 PG Riggelman Road, Franklin, WV 26807	304-668-9113 c	
	Hiser	Harold	5 Highland Avenue Petersburg, WV 26847	304-257-4550 (w)	
	Keadle	Beverly	340 East Main Street Romney, WV 26757	304-822-5118 (w)	mayorofromney@atlanticbbn.net

✓	Kitzmiller	Tammy	PO Box 114, Petersburg, WV 26847	304-257-2168 (w)	TKitzmiller@grantcounty-wv.com
✓	Leatherman	Roger	HC 75 Box 144, New Creek, WV 26743	304-289-3106 (h)	rdlivi@frontiernet.net
	Liller	Terry	370 Hilltop Avenue, Keyser, WV 26726	304-790-2981 c	terryliller@gmail.com
	Loving	William	PO Box 238, Franklin, WV 26807	304-668-0218 c	bloving@yourbank.com
	Michael	Gary	PO Box 669, Petersburg, WV 26847	304-257-4941	gam99@frontiernet.net
✓	Parker	David	P.O. Box 901, Romney, WV 26757	304-822-5896 (h)	drparker68@yahoo.com
	Sasso	Valerie	PO Box 397, Franklin, WV 26807	304-358-3603	irakula@frontier.com
	Sirbaugh	Stephen	HC 71 Box 75-DA, Capon Bridge, WV 26711	304-856-3625 (w)	
✓	Smith	Benjamin	52 Second Street, Piedmont, WV 26750	304-355-2621 (w) 304-813-2400	love for chevys@hotmail.com
	Smith	Richard	401 Maple Avenue, Moorefield, WV 26836	304-538-7711 (w)	rsmith@ewvcaa/prg
	Stalaker	Gary	206 Winchester Ave, Moorefield, WV 26836	304-530-6142	townofmfld@hardynet.com
	Walker	Dale	HC 69 Box 228, Fort Seybert, WV 26802	304-249-5397	dmw@frontier.com
	Watts	Sherry	316 Eastern Drive, Moorefield, WV 26836	304-434-8000 (w)	sherry.watts@easternwv.edu
	Wilkins	J. D.	P.O. Box 26, Riverton, WV 26814		jwilkins@grantcountybank.com
	Williams	Elwood	504 Clement Street, Moorefield, WV 26836	304-257-7236 c	cew1999@hardynet.com

Guests

Name	Address	Telephone	Email	Representing
Melissa Earle	Region 8 Staff			
Lynn Phillips	Governor's office	304-389-5216	lynn.e.phillips@wv.gov	
Matthew Pennington	Region 9	304-707-1920	mpennington@region9wv.com	
Herb Peddicord		(304) 541-9285	herb.f.peddicord@wv.gov	WV Div. of Forestry
Alana Hartman	22288 Northwestern Pike, Romney WV 26757	(304) 993-6814 cell	alana.chartman@wv.gov	WVDEP/WVFB
<del>WVFB</del> Chad Thompson		304 919 1139	Chad.m.thompson@wv.gov	WVDEP
Sozy Campbell		304-539-2682	SCampbell@WVCA.US	WVCA
Shirley Vandette				
Pam Kephlinger				
Tom Braithwaite		304-446-5684	wbraithwaite@shentel	Town of Elk Garden
Jean Braithwaite				
BEN SMITH		304-813-2400	LOVE.FOR.CHEVY59@hotmail.com	Piedmont
Butch Armentrout		304 738 1612	carp.7e@atlanticbbw.net	Town of Ceredale (Mayor)
Jean Ashley				
Carla Runt	Staff			
Peggy Hawse	Senator Manchin's Office			

# AGENDA

## Region 8 Planning and Development Council Meeting

Thursday, July 20, 2017

12:30 p.m.



### I. CALL TO ORDER

### II. MINUTES OF PREVIOUS MEETING June 2017

### III. REPORT

#### A. Treasurer's Report

### IV. BUSINESS

#### A. Introduction of New Members

#### B. WV's Chesapeake Bay Tributary Team discussion of progress and what remains to be done.

#### C. Appointment of Hazard Mitigation Steering Committee

#### D. RLF Board Members

#### E. Director's Update

### V. ADJOURNMENT

## Region 8 Planning and Development Council

Thursday, July 20, 2017– 12:30 p.m.

### CALL TO ORDER

David Parker, Region 8 PDC Chairman, called the meeting to order at approximately 12:30 p.m. with 9 members present.

### PREVIOUS MINUTES

Joan Ashley made a motion to approve the minutes for June 2017. Alan Brill seconded the motion. Motion carried.

### REPORTS

#### Treasurer's Report

An agency balance sheet and agency-wide line item revenues and expenditures sheet was provided to members in their meeting packets. Joan Ashley made a motion to accept the Treasurer's Report as presented in the meeting packet. Butch Armentrout seconded the motion. Motion carried.

### BUSINESS

#### Introduction of New Members

Terry informed the group that as a result of this year's elections, he is honored to announce that we have two new board members. Beverly Keadle, Mayor of the City of Romney and Marian Droppleman, Mayor of the Town of Elk Garden.

#### WV's Chesapeake Bay Tributary Team Discussion of progress and what remains to be done

Over the past decade the communities and counties in the region have been actively working to reduce pollutions in the Chesapeake Bay Watershed. I am happy to say that the last two sewer plants that were affecting the Watershed are currently under construction to improve their effluent and bring them within the current limits of their permits. Terry introduced our guest speaker, Alana Hartman, with the Department of Environmental Protection – Division of Water and Waste Management, Watershed Improvement Branch she is here to give us an update on the conditions of the Potomac River.

Mrs. Hartman gave a handout to the group that informed them what practices can be done to help reduce nitrogen, phosphorus, and sediment in the local waters which include:

- ✓ Help with a local tree planting event
- ✓ Participate in a cost-share program to improve conservation practices on your farm.
- ✓ Support good stormwater management in your community, and do your part on your property by installing rain gardens and maintaining areas with native plants besides grass.
- ✓ Share your stories about your appreciation of local waters.
- ✓ Many more ideas at website [www.chesapeakebay.net/takeaction/howtotips](http://www.chesapeakebay.net/takeaction/howtotips)

Ms. Hartman also mentioned to target particular areas interested in setting up a new sewer system. She explained this is a good strategy to be fundable and to make a good selling point for grant money to put a new sewer system into a particular area.

Matthew Pennington with Region 9 Planning and Development Council presented a slideshow that showed the Stormwater Ordinance that Region 9 has created. This Ordinance explains how to manage pollution and to prevent reoccurring flooding. Mr. Pennington mentioned if Region 8 Planning and Development Council is interested in using this Stormwater Ordinance that he will



assist to help get this off the ground. Mr. Pennington also mentioned the Poultry Litter Management Program to help with clean up the rivers etc. Discussion Occurred.

Chad Thompson, with the Department of Environmental Protection gave a handout to the group that informed them of the funding opportunities available for watershed-related work in the Potomac Basin of West Virginia. He explained these Grants are available at the State and Federal level. He also mentioned that on the goggle earth website there are new maps for the entire area that can calculate the acres of farmland in each county. Discussion Occurred.

Suzy Campbell with Conservation Agency also mentioned the goals to help reduce nitrogen and phosphorus that Ms. Hartman shared with the group. Discussion Occurred. She encouraged the group to sign up for their Newsletter to keep updated. She also mentioned that it's the efforts of the local governments that make it possible to move forward with the new Chesapeake Bay Strategy. She explained the Environmental Protection Agency will be having a meeting in the Fall. Discussion Occurred. They are looking at local targets and will need to have the draft Comprehensive Plan completed this Fall. The completed Comprehensive Economic Development Plan will be due December 2018. Discussion Occurred.

Herb Peddicord with the Department of Forestry also discussed methods including planting trees along streams to help reduce nitrogen and phosphorus. Discussion Occurred.

#### Appointment of Hazard Mitigation Steering Committee

Approximately ten years ago FEMA came to the Regional Councils and asked that we begin doing the Hazard Mitigation Plans for the counties within our region. The Council has been doing that and is currently in the process of doing an update to the Multi-Hazard Mitigation Plan. Terry explained to help get this process started, he is asking the Chairman to select a Steering Committee between thirteen – fifteen people that would work along with him and JH Consulting.

#### RLF Board Members

The Council started the Revolving Loan Fund over 28 years ago. The fund has been through a number of board members with Harold Hiser and Paul Morton being the only two original board members remaining. Currently, the board has four vacancies to be filled. The board consists of ten members and has always been made up of two members from each county. This board will only meet a few times a year. Terry asked the Chairman to appoint new board members to the Revolving Loan Fund Board including Kevin Clark, Grady Bradfield, Gene McConnell and then for him to select someone from Hampshire County. Discussion Occurred.

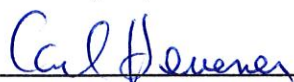
#### Director's Update

Water and Sewer Projects in Petersburg, Franklin, Keyser, Piedmont, and the Fountain Public Service District are all on schedule. Seneca Rocks is preparing to close loans and start construction. We are still working with the New Creek Water Association, Hampshire Public Service District, and the City of Romney on new Water and Sewer projects.

Occupancy at the Transitional Housing Facility is averaging 20 plus beds per week.

#### **ADJOURNMENT**

Joan Ashley made a motion to adjourn the meeting. Roger Leatherman seconded the motion. The meeting adjourned at approximately 2:10 p.m.



Carl Hevener, Secretary



Carla Dent, Executive Assistant

# REGION 8 HAZARD MITIGATION PLAN

Hazard Mitigation Plan 2017 Update – Steering Committee Meeting #1

August 15, 2017 ~ 1:00 pm

Sign In Sheet

	Name	Affiliation	Email
1.	Melissa Scott	Hardy Co Planner/Floodplain manager	MSCOTT,hardyplanner@gmail.com
2.	Gene McDonnell	Pendleton County Commission	genemc@spruceknob.net
3.	Paul R Lewis	Hardy Co. OEM/911	hardyeoc@hardynet.com
4.	Brian Malachuk	Hampshire Co HSEM	bmalachuk@hampshire.wv.gov
5.	Luke McKenzie	Mineral Co HSEM	mineralOEM@yahoo.com
6.	Roger Leatherman	Mineral Co. Commission	rdlavl@Frontier.net
7.	Alan Brubaker	Mineral Co. Commission	abrubaker@mineralcounty.wv.com
8.	Jessica Szabo	City of Romney	administratera@cityofromney.org
9.	JEFF HARVEY	JHC	jharvey@jhcpreparedness.com
10.	Amy Heimberger	JH Consulting	aheimberger@jhcpreparedness.com
11.	Frank Wehrle (via phone)	Town of Franklin	townfranklin@gmail.com
12.	Carla Dent	Region 8 POC Staff	cdenta@regioneight.org
13.	Terry Lively	" "	tlively@regioneight.org
14.			
15.			
16.			

# REGION 8 HAZARD MITIGATION PLAN

*Hazard Mitigation Plan 2017 Update – Steering Committee Meeting #1*

August 15, 2017 ~ 1:00 pm

Sign In Sheet

	Name	Affiliation	Email
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			



## REGION 8 HAZARD MITIGATION PLAN 2017 UPDATE

Region 8 PDC Offices  
August 15, 2017  
1:00 pm  
131 Providence Lane  
Petersburg, WV 26847

## WELCOME AND INTRODUCTIONS



## AGENDA

- Overview of Hazard Mitigation and the Planning Process
- Hazard Review
- Tasks
- Public Outreach & Engagement
- Meeting Schedule
- Q & A

## OVERVIEW OF HAZARD MITIGATION AND THE PLANNING PROCESS

What is hazard mitigation?

Federal Emergency Management Agency (FEMA):

- oversees the hazard mitigation process at the local, regional, state, and national levels, and
- defines mitigation as, "the effort to reduce loss of life and property by lessening the impact of disasters" (FEMA.gov, 2016).

## OVERVIEW OF HAZARD MITIGATION AND THE PLANNING PROCESS

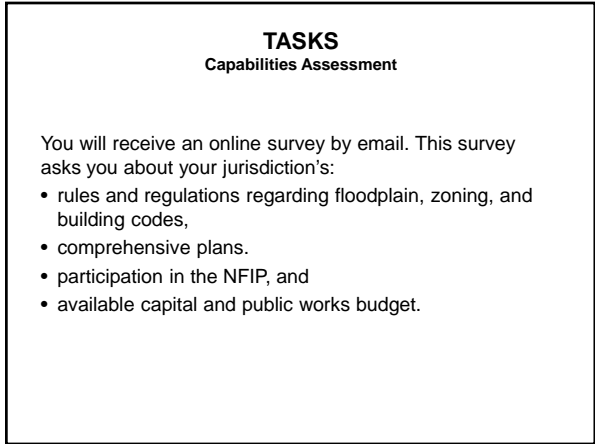
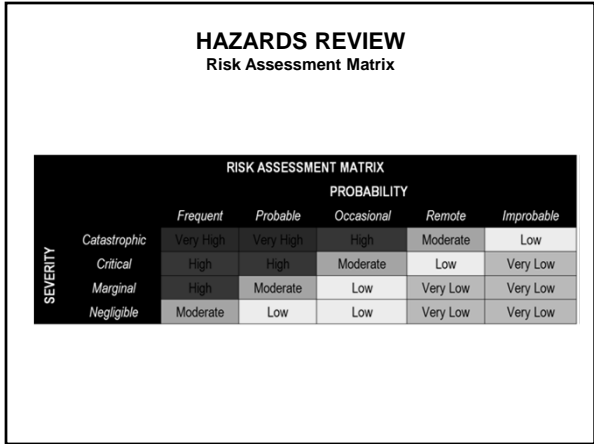
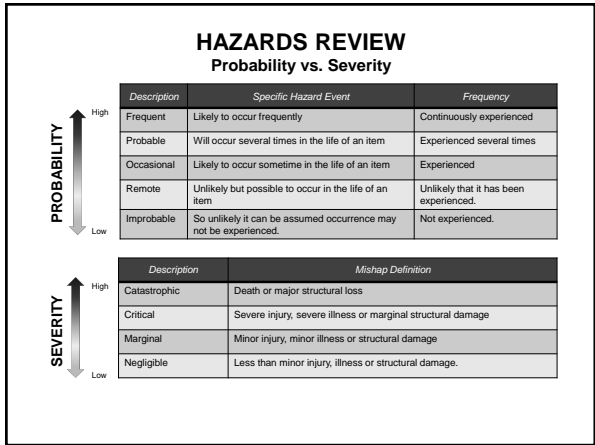
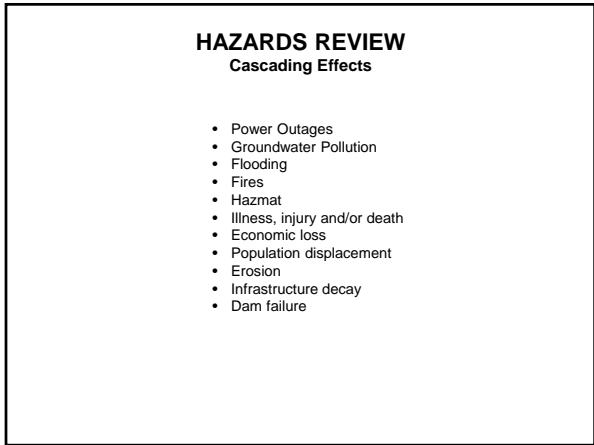
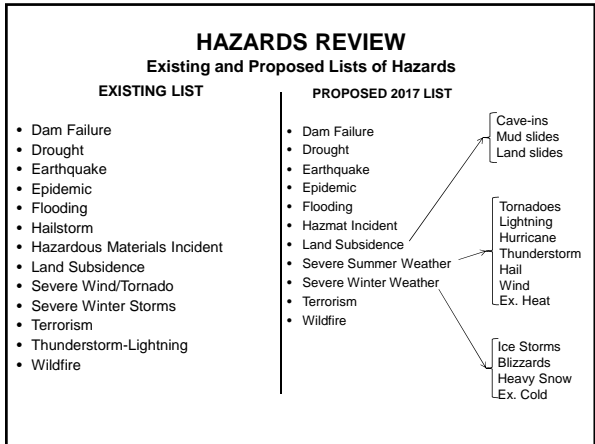
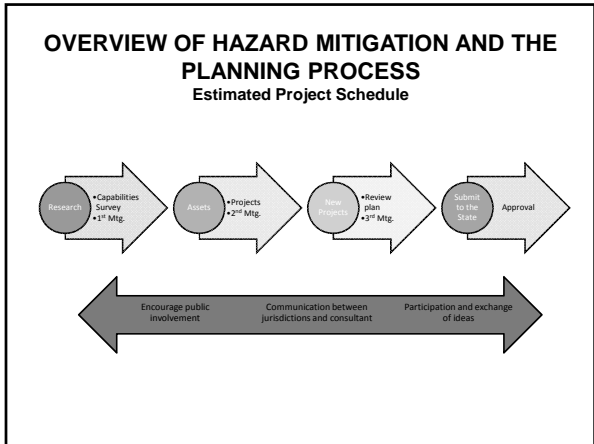
The Hazard Mitigation Plan

- Planning Process
- Description of the planning area
- Risk Assessment
  - Hazard profiles
  - Assets inventory
  - Development trends
- Action plan
  - Goals
  - Strategies (projects)
- Plan maintenance
- Appendices

## OVERVIEW OF HAZARD MITIGATION AND THE PLANNING PROCESS

Steering Committee Roles & Responsibilities

- Committee Review – Will need to meet regularly to work through the document in order to complete the timeline.
- Additional contact with committee members will be made by phone, through email, and teleconferences as needed.
- Committee members will be asked to complete tasks specific to their jurisdiction.
- JHC planning staff will be primarily responsible for research and document drafting.



**TASKS**  
**Asset Inventories**

- Need to update the Asset Inventory included in the plan.
  - Critical Facilities
  - Vulnerable Populations (e.g., schools, nursing homes, etc.)
  - Economic Assets (i.e., discuss thresholds)
  - Historical Considerations
  - Special Considerations
- Note the following for each:
  - Name of facility
  - Address (for mapping)
  - Type of facility

**PUBLIC OUTREACH & ENGAGEMENT**  
**Meetings and Online Survey**

Public input is required per FEMA, and can be obtained in multiple ways.

- Meetings for the public to comment on the process.
- Copies of the plan at government offices/libraries for review and comment.
- Online surveys.
  - Social media presence is very important for these surveys to be successful.

**Q & A**

**THANK YOU!**

## TELL ME A STORY

From the hazards listed below for the hazard mitigation plan update, tell me about a specific problem you've encountered in your jurisdiction relating to at least three of these hazards. Provide the date (year at minimum), location (street name, park name, etc.), and a brief description of what happened and why, and if there was anything that was done about it since it occurred. Use the reverse side of this page if you require more space.

Name: Paul Lewis

Jurisdiction: Hardey Co.

Hazard	Level of Concern	Date and Location	Brief Description
Example: Storm Surge	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: August 2014 Location: Coast of South Beach along Ocean Drive between 5th St. and 14th St.	Tropical Storm Enrique caused erosion on South Beach in Miami because of a 10' storm surge. The water reached Ocean Drive and flooded local businesses and swept away cars. After the water receded, recovery took several months and many businesses could not recover. Three people died and dozens were injured; five are still missing. Since then, low impact mitigation strategies have been implemented along the beach to avoid widespread destruction.
Dam Failure	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	No particular area. However some of the dams in the county are getting some age on them.
Drought	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	Every summer we have a drought period that affects farmer's crops, etc
Earthquake	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	I know we have a fault going thru our area but not concerned at this time.
Epidemic	<input checked="" type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	
Flooding	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input checked="" type="checkbox"/> Very Concerned	Date: 1985 major Location: Moserfield and other parts of county	We have an earth built fracture around Moserfield to handle flooding but not a lot. I know that there are water lines and it may not be high enough.
Hazmat Incidents	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input checked="" type="checkbox"/> Very Concerned	Date: Location:	Really concerned about hazmat incident from airplane crash with Amtrak bus company there. It may be a leak and we will have major problems.
Land Subsidence	<input checked="" type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	Have had a few small slide but nothing major.

- Severe Summer Weather
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date:  
Location:

Have had severe wind  
more than the valley  
with major damage and  
flooded situation in  
the County

- Severe Winter Weather
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date: 2015  
Location: Hacky Co

Have had major  
winter storms ever since  
to three years

- Terrorism
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date:  
Location:

Concerned because of  
poultry industry and  
water supply going to  
Potomac River

- Wildfire
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date:  
Location:

Always have one or two  
major wildfires every  
other year

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:  
Location:

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:  
Location:

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:  
Location:



## TELL ME A STORY

From the hazards listed below for the hazard mitigation plan update, tell me about a specific problem you've encountered in your jurisdiction relating to at least three of these hazards. Provide the date (year at minimum), location (street name, park name, etc.), and a brief description of what happened and why, and if there was anything that was done about it since it occurred. Use the reverse side of this page if you require more space.

Name: Jessica Szabo

Jurisdiction: City of Romney

Hazard	Level of Concern	Date and Location	Brief Description
Example: Storm Surge	<input type="checkbox"/> Not Concerned	Date: August 2014 Location: Coast of South Beach along Ocean Drive between 5th St. and 14th St.	Tropical Storm Enrique caused erosion on South Beach in Miami because of a 10' storm surge. The water reached Ocean Drive and flooded local businesses and swept away cars. After the water receded, recovery took several months and many businesses could not recover. Three people died and dozens were injured; five are still missing. Since then, low impact mitigation strategies have been implemented along the beach to avoid widespread destruction.
	<input type="checkbox"/> Somewhat Concerned		
	<input checked="" type="checkbox"/> Concerned		
	<input type="checkbox"/> Very Concerned		
Dam Failure	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input checked="" type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Drought	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input checked="" type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Earthquake	<input checked="" type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Epidemic	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input checked="" type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Flooding	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input checked="" type="checkbox"/> Very Concerned	_____	_____
Hazmat Incidents	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input checked="" type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Land Subsidence	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input checked="" type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____

- Severe Summer Weather
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date: 04/2017

Location:  
South Hills Basin  
Whisperwill Drive

Heavy Rain fall and poorly maintained storm drains led to flooding in several homes

Severe Winter Weather

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:

Location:

Terrorism

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:

Location:

Wildfire

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:

Location:

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:

Location:

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:

Location:

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:

Location:

## TELL ME A STORY

From the hazards listed below for the hazard mitigation plan update, tell me about a specific problem you've encountered in your jurisdiction relating to at least three of these hazards. Provide the date (year at minimum), location (street name, park name, etc.), and a brief description of what happened and why, and if there was anything that was done about it since it occurred. Use the reverse side of this page if you require more space.

Name: Melissa SCOTT

Jurisdiction: Floridy County PLANNING

Hazard	Level of Concern	Date and Location	Brief Description
Example: Storm Surge	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: August 2014 Location: Coast of South Beach along Ocean Drive between 5th St. and 14th St.	Tropical Storm Enrique caused erosion on South Beach in Miami because of a 10' storm surge. The water reached Ocean Drive and flooded local businesses and swept away cars. After the water receded, recovery took several months and many businesses could not recover. Three people died and dozens were injured; five are still missing. Since then, low impact mitigation strategies have been implemented along the beach to avoid widespread destruction.
Dam Failure	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: _____ Location: _____	_____ _____ _____
Drought	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: _____ Location: _____	_____ _____ _____
Earthquake	<input checked="" type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: _____ Location: _____	_____ _____ _____
Epidemic	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: _____ Location: _____	_____ _____ _____
Flooding	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input checked="" type="checkbox"/> Very Concerned	Date: _____ Location: _____	[FEMA LAMP Pilot Project Data Source] Levee in Moorefield has been determined to be too low, plus protects for 100yr when we have seen 400-500yr floods.
Hazmat Incidents	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input checked="" type="checkbox"/> Very Concerned	Date: _____ Location: _____	_____ _____ _____
Land Subsidence	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input checked="" type="checkbox"/> Very Concerned	Date: _____ Location: _____	_____ _____ _____

- Severe Summer Weather
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date:

Location:

---

---

---

---

---

- Severe Winter Weather
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date:

Location:

Several Structures had  
RWT collapse after heavy snow.  
with NO building code enforcement  
insurance companies are more reluctant  
to insure

- Terrorism
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date:

Location:

---

---

---

---

---

- Wildfire
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date:

Location:

---

---

---

---

---

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:

Location:

---

---

---

---

---

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:

Location:

---

---

---

---

---

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:

Location:

---

---

---

---

---

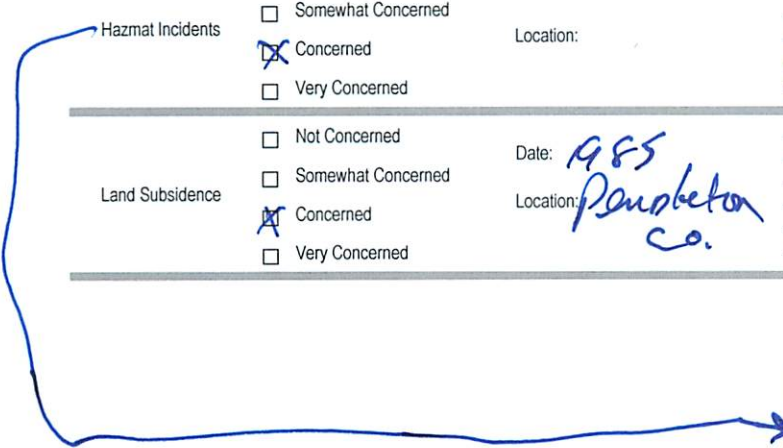
## TELL ME A STORY

From the hazards listed below for the hazard mitigation plan update, tell me about a specific problem you've encountered in your jurisdiction relating to at least three of these hazards. Provide the date (year at minimum), location (street name, park name, etc.), and a brief description of what happened and why, and if there was anything that was done about it since it occurred. Use the reverse side of this page if you require more space.

Name: G. McConnell

Jurisdiction: Panola County

Hazard	Level of Concern	Date and Location	Brief Description
Example: Storm Surge	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: August 2014 Location: Coast of South Beach along Ocean Drive between 5th St. and 14th St.	Tropical Storm Enrique caused erosion on South Beach in Miami because of a 10' storm surge. The water reached Ocean Drive and flooded local businesses and swept away cars. After the water receded, recovery took several months and many businesses could not recover. Three people died and dozens were injured; five are still missing. Since then, low impact mitigation strategies have been implemented along the beach to avoid widespread destruction.
Dam Failure	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	<u>Concerned due to several Flood Control Dams in the S. Fork Area of Panola</u>
Drought	<input checked="" type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	
Earthquake	<input checked="" type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	
Epidemic	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	<u>Always a possibility, however sparse population makes control easier.</u>
Flooding	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: <u>1985/1996</u> Location: <u>Panola Co.</u>	
Hazmat Incidents	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	<u>Columbia Gas Pumping Sta. at Seneca. Response to Gas Incident Different from HAZMAT</u>
Land Subsidence	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: <u>1985</u> Location: <u>Panola Co.</u>	<u>Numerous Landslides occurred during floods of 1985 blocking roads &amp; streams and contributing to greater flooding</u>



Also many trucks travel thru county with potentially hazardous material. Mtn roads are treacherous making a HAZMAT event more likely

Severe Summer Weather

Not Concerned      Date: \_\_\_\_\_

Somewhat Concerned      \_\_\_\_\_

Concerned      Location: \_\_\_\_\_

Very Concerned      \_\_\_\_\_

Severe Winter Weather

Not Concerned      Date: \_\_\_\_\_

Somewhat Concerned      \_\_\_\_\_

Concerned      Location: \_\_\_\_\_

Very Concerned      \_\_\_\_\_

Terrorism

Not Concerned      Date: \_\_\_\_\_

Somewhat Concerned      \_\_\_\_\_

Concerned      Location: \_\_\_\_\_

Very Concerned      \_\_\_\_\_

Wildfire

Not Concerned      Date: \_\_\_\_\_

Somewhat Concerned      \_\_\_\_\_

Concerned      Location: \_\_\_\_\_

Very Concerned      \_\_\_\_\_

Not Concerned      Date: \_\_\_\_\_

Somewhat Concerned      \_\_\_\_\_

Concerned      Location: \_\_\_\_\_

Very Concerned      \_\_\_\_\_

Not Concerned      Date: \_\_\_\_\_

Somewhat Concerned      \_\_\_\_\_

Concerned      Location: \_\_\_\_\_

Very Concerned      \_\_\_\_\_

Not Concerned      Date: \_\_\_\_\_

Somewhat Concerned      \_\_\_\_\_

Concerned      Location: \_\_\_\_\_

Very Concerned      \_\_\_\_\_

## TELL ME A STORY

From the hazards listed below for the hazard mitigation plan update, tell me about a specific problem you've encountered in your jurisdiction relating to at least three of these hazards. Provide the date (year at minimum), location (street name, park name, etc.), and a brief description of what happened and why, and if there was anything that was done about it since it occurred. Use the reverse side of this page if you require more space.

Name: Drew Bubaker

Jurisdiction: Mineral Co.

Hazard	Level of Concern	Date and Location	Brief Description
Example: Storm Surge	<input type="checkbox"/> Not Concerned	Date: August 2014 Location: Coast of South Beach along Ocean Drive between 5th St. and 14th St.	Tropical Storm Enrique caused erosion on South Beach in Miami because of a 10' storm surge. The water reached Ocean Drive and flooded local businesses and swept away cars. After the water receded, recovery took several months and many businesses could not recover. Three people died and dozens were injured; five are still missing. Since then, low impact mitigation strategies have been implemented along the beach to avoid widespread destruction.
	<input type="checkbox"/> Somewhat Concerned		
	<input checked="" type="checkbox"/> Concerned		
	<input type="checkbox"/> Very Concerned		
Dam Failure	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Drought	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Earthquake	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Epidemic	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Flooding	<input type="checkbox"/> Not Concerned	Date: <u>ongoing</u>	<u>There are a number of camp sites on Patterson Creek outside of Super, N.V. during heavy rain these sites are subjected to mild flooding. My desire is to ensure occupants vacate when flooding occurs</u>
	<input checked="" type="checkbox"/> Somewhat Concerned	Location: _____	
	<input type="checkbox"/> Concerned	_____	
	<input type="checkbox"/> Very Concerned	_____	
Hazmat Incidents	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Land Subsidence	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Severe Summer Weather

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

---

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Severe Winter Weather

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

---

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Terrorism

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

---

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Wildfire

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

---

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

---

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

---

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

---



## TELL ME A STORY

From the hazards listed below for the hazard mitigation plan update, tell me about a specific problem you've encountered in your jurisdiction relating to at least three of these hazards. Provide the date (year at minimum), location (street name, park name, etc.), and a brief description of what happened and why, and if there was anything that was done about it since it occurred. Use the reverse side of this page if you require more space.

Name: Luke Mulkenan

Jurisdiction: Mineral County

Hazard	Level of Concern	Date and Location	Brief Description
Example: Storm Surge	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: August 2014 Location: Coast of South Beach along Ocean Drive between 5th St. and 14th St.	Tropical Storm Enrique caused erosion on South Beach in Miami because of a 10' storm surge. The water reached Ocean Drive and flooded local businesses and swept away cars. After the water receded, recovery took several months and many businesses could not recover. Three people died and dozens were injured; five are still missing. Since then, low impact mitigation strategies have been implemented along the beach to avoid widespread destruction.
Dam Failure	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: _____ Location: _____	_____ _____ _____
Drought	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: 2014 May/June Location: entire county, mostly Kayser	A number of years ago we had a drought that nearly took residents of Alameda County without water. The fire department had to shuttle and pump water from other locations to fill holdrs & water
Earthquake	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: _____ Location: _____	_____ _____ _____
Epidemic	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: _____ Location: _____	_____ _____ _____
Flooding	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input checked="" type="checkbox"/> Very Concerned	Date: _____ Location: _____	Mineral County has a lot of development in our flood plain. Flooding is more common we do still have some instances where isolated flooding occurs
Hazmat Incidents	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: _____ Location: _____	We have a large amount of trains and trucks that come through our County as well as Orbital ATC. We have very few Hazmat resources.
Land Subsidence	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: _____ Location: _____	_____ _____ _____

Severe Summer Weather

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Severe Winter Weather

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Terrorism

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Wildfire

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

## TELL ME A STORY

From the hazards listed below for the hazard mitigation plan update, tell me about a specific problem you've encountered in your jurisdiction relating to at least three of these hazards. Provide the date (year at minimum), location (street name, park name, etc.), and a brief description of what happened and why, and if there was anything that was done about it since it occurred. Use the reverse side of this page if you require more space.

Name: Roger Leatherman

Jurisdiction: M.oral Co.

Hazard	Level of Concern	Date and Location	Brief Description
Example: Storm Surge	<input type="checkbox"/> Not Concerned	Date: August 2014 Location: Coast of South Beach along Ocean Drive between 5th St. and 14th St.	Tropical Storm Enrique caused erosion on South Beach in Miami because of a 10' storm surge. The water reached Ocean Drive and flooded local businesses and swept away cars. After the water receded, recovery took several months and many businesses could not recover. Three people died and dozens were injured; five are still missing. Since then, low impact mitigation strategies have been implemented along the beach to avoid widespread destruction.
	<input type="checkbox"/> Somewhat Concerned		
	<input checked="" type="checkbox"/> Concerned		
	<input type="checkbox"/> Very Concerned		
Dam Failure	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input checked="" type="checkbox"/> Concerned	Tennings Lake & Smaller Fl. Control Dams.	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Drought	<input checked="" type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Earthquake	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: Tennings Lake	_____
	<input checked="" type="checkbox"/> Concerned	_____	breaking of face wall of Tennings & several smaller Dams. Major Damage To Piedmont & Keyser
	<input type="checkbox"/> Very Concerned	_____	_____
Epidemic	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input checked="" type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____
Flooding	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: Tennings & Smaller Fl. Control Dams	_____
	<input checked="" type="checkbox"/> Concerned	_____	Failure of Dams. <del>the</del> large Dams Cause Major Damage Smaller Fl. Control can cause Damage To the Smaller Communities
	<input type="checkbox"/> Very Concerned	_____	_____
Hazmat Incidents	<input type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: Keyser, Piedmont	_____
	<input checked="" type="checkbox"/> Concerned	_____	Railroad mishaps causing major Damage To Piedmont & Keyser Areas.
	<input type="checkbox"/> Very Concerned	_____	_____
Land Subsidence	<input checked="" type="checkbox"/> Not Concerned	Date: _____	_____
	<input type="checkbox"/> Somewhat Concerned	Location: _____	_____
	<input type="checkbox"/> Concerned	_____	_____
	<input type="checkbox"/> Very Concerned	_____	_____

Severe Summer Weather

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Severe Winter Weather

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Terrorism

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Wildfire

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

Not Concerned  
 Somewhat Concerned  
 Concerned  
 Very Concerned

Date: \_\_\_\_\_  
Location: \_\_\_\_\_

### TELL ME A STORY

From the hazards listed below for the hazard mitigation plan update, tell me about a specific problem you've encountered in your jurisdiction relating to at least three of these hazards. Provide the date (year at minimum), location (street name, park name, etc.), and a brief description of what happened and why, and if there was anything that was done about it since it occurred. Use the reverse side of this page if you require more space.

Name: Brian Malcolm

Jurisdiction: Hampshire HSEM

Hazard	Level of Concern	Date and Location	Brief Description
Example: Storm Surge	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: August 2014 Location: Coast of South Beach along Ocean Drive between 5th St. and 14th St.	Tropical Storm Enrique caused erosion on South Beach in Miami because of a 10' storm surge. The water reached Ocean Drive and flooded local businesses and swept away cars. After the water receded, recovery took several months and many businesses could not recover. Three people died and dozens were injured; five are still missing. Since then, low impact mitigation strategies have been implemented along the beach to avoid widespread destruction.
Dam Failure	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	<u>We have only 1 recordable Dam in Hampshire County at Hampshire Gap that would affect 21 Residents</u>  <u>We are prone to Dam failures from other Counties though.</u>
Drought	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	
Earthquake	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	
Epidemic	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	
Flooding	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input checked="" type="checkbox"/> Very Concerned	Date: Location: <u>South Beach of The Potomac</u>	<u>Severe Flooding can cause road closures + loss of property + life.</u> <u>We have had the same problem to this as Hampshire has been flooded majorly 2 times in 32 years</u>
Hazmat Incidents	<input type="checkbox"/> Not Concerned <input type="checkbox"/> Somewhat Concerned <input checked="" type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	<u>No major incident yet but there is a CSX main line traveling through parts of Hampshire County</u>
Land Subsidence	<input type="checkbox"/> Not Concerned <input checked="" type="checkbox"/> Somewhat Concerned <input type="checkbox"/> Concerned <input type="checkbox"/> Very Concerned	Date: Location:	

- Severe Summer Weather
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date: 2012  
Location:

Decreased (more) widespread  
power outages during extreme heat

- Severe Winter Weather
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date: 2015  
Location:

Excessive cold + snow causing  
widespread power outages.

- Terrorism
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date:  
Location:

- Wildfire
- Not Concerned
  - Somewhat Concerned
  - Concerned
  - Very Concerned

Date:  
Location:

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:  
Location:

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:  
Location:

- Not Concerned
- Somewhat Concerned
- Concerned
- Very Concerned

Date:  
Location:

# REGION 8 HAZARD MITIGATION PLAN UPDATE

August 15, 2017 Steering Committee Meeting  
Risk Assessment Matrix Exercise

Name: Brian Malcolm

Agency/Municipality/Other: Hampshire Co HSEM

**Instructions:** Please fill out the Risk Assessment Matrix below using the appropriate definitions. Write in where you think each hazard discussed falls in the matrix. More than one hazard may be located in one box. Not every box needs to be filled in.

RISK ASSESSMENT MATRIX		HAZARD PROBABILITY				
		Frequent	Probable	Occasional	Remote	Improbable
HAZARD SEVERITY	Catastrophic		Flooding		Hazardous Incident Earthquake	
	Critical		Severe Winter Weather	Severe Summer Weather	Epidemic Dam Failure Terrorism	
	Marginal				Drought <del>...</del> Land Subsidence	Wildfire
	Negligible					

### Hazard Probability Classifications

Description	Specific Hazard Event
Frequent	Likely to occur frequently within a year time span.
Probable	Will likely occur several times over the course of several years
Occasional	Likely to occur once in a several year period.
Remote	Unlikely to occur once in a several year period, but possible.
Improbable	So unlikely it can be assumed occurrence will not occur

### Hazard Severity Classifications

Severity Levels	Severity Description
Catastrophic	Death or major structural loss
Critical	Severe injury, severe illness or marginal structural damage
Marginal	Minor injury, minor illness, or minor structural damage
Negligible	Injuries or structural damage are not expected



# REGION 8 HAZARD MITIGATION PLAN UPDATE

August 15, 2017 Steering Committee Meeting  
Risk Assessment Matrix Exercise

Name: Roger Leatherman

Agency/Municipality/Other: Muskegon Co. Communities

**Instructions:** Please fill out the Risk Assessment Matrix below using the appropriate definitions. Write in where you think each hazard discussed falls in the matrix. More than one hazard may be located in one box. Not every box needs to be filled in.

RISK ASSESSMENT MATRIX		HAZARD PROBABILITY				
		Frequent	Probable	Occasional	Remote	Improbable
HAZARD SEVERITY	Catastrophic			Dam Failure Flooding		
	Critical			Hazmat Incident		
	Marginal			Severe winter weather Severe summer weather	Earthquake Terrorism Drought	
	Negligible				Wild Fire	Land Subsidence

### Hazard Probability Classifications

Description	Specific Hazard Event
Frequent	Likely to occur frequently within a year time span.
Probable	Will likely occur several times over the course of several years
Occasional	Likely to occur once in a several year period.
Remote	Unlikely to occur once in a several year period, but possible.
Improbable	So unlikely it can be assumed occurrence will not occur

### Hazard Severity Classifications

Severity Levels	Severity Description
Catastrophic	Death or major structural loss
Critical	Severe injury, severe illness or marginal structural damage
Marginal	Minor injury, minor illness, or minor structural damage
Negligible	Injuries or structural damage are not expected

# REGION 8 HAZARD MITIGATION PLAN UPDATE

August 15, 2017 Steering Committee Meeting  
Risk Assessment Matrix Exercise

Name: Luke M'Ganize

Agency/Municipality/Other: Mineral County HSEM

**Instructions:** Please fill out the Risk Assessment Matrix below using the appropriate definitions. Write in where you think each hazard discussed falls in the matrix. More than one hazard may be located in one box. Not every box needs to be filled in.

RISK ASSESSMENT MATRIX		HAZARD PROBABILITY				
		Frequent	Probable	Occasional	Remote	Improbable
HAZARD SEVERITY	Catastrophic				Epidemic	- Dam failure - Terrorism
	Critical			Earthquake - Severe Summer storms -	Hazard incidents	
	Marginal		- Flooding - severe winter storms - wild fire	Earthquake		
	Negligible		Drought			Land subsidence

### Hazard Probability Classifications

Description	Specific Hazard Event
Frequent	Likely to occur frequently within a year time span.
Probable	Will likely occur several times over the course of several years
Occasional	Likely to occur once in a several year period.
Remote	Unlikely to occur once in a several year period, but possible.
Improbable	So unlikely it can be assumed occurrence will not occur

### Hazard Severity Classifications

Severity Levels	Severity Description
Catastrophic	Death or major structural loss
Critical	Severe injury, severe illness or marginal structural damage
Marginal	Minor injury, minor illness, or minor structural damage
Negligible	Injuries or structural damage are not expected

# REGION 8 HAZARD MITIGATION PLAN UPDATE

August 15, 2017 Steering Committee Meeting  
Risk Assessment Matrix Exercise

Name: Arew Brubaker

Agency/Municipality/Other: Mineral County Commission

**Instructions:** Please fill out the Risk Assessment Matrix below using the appropriate definitions. Write in where you think each hazard discussed falls in the matrix. More than one hazard may be located in one box. Not every box needs to be filled in.

RISK ASSESSMENT MATRIX		HAZARD PROBABILITY				
		Frequent	Probable	Occasional	Remote	Improbable
HAZARD SEVERITY	Catastrophic					Terrorism Atom failure
	Critical				Flooding (severe) Epidemic	Earthquake
	Marginal		Severe winter weather Severe summer weather		Wild fire Hazard incident	Land subsidence
	Negligible		Drought			

### Hazard Probability Classifications

Description	Specific Hazard Event
Frequent	Likely to occur frequently within a year time span.
Probable	Will likely occur several times over the course of several years
Occasional	Likely to occur once in a several year period.
Remote	Unlikely to occur once in a several year period, but possible.
Improbable	So unlikely it can be assumed occurrence will not occur

### Hazard Severity Classifications

Severity Levels	Severity Description
Catastrophic	Death or major structural loss
Critical	Severe injury, severe illness or marginal structural damage
Marginal	Minor injury, minor illness, or minor structural damage
Negligible	Injuries or structural damage are not expected

# REGION 8 HAZARD MITIGATION PLAN UPDATE

August 15, 2017 Steering Committee Meeting

Risk Assessment Matrix Exercise

Name: Gene MacLennan

Agency/Municipality/Other: Doakletm County

**Instructions:** Please fill out the Risk Assessment Matrix below using the appropriate definitions. Write in where you think each hazard discussed falls in the matrix. More than one hazard may be located in one box. Not every box needs to be filled in.

RISK ASSESSMENT MATRIX		HAZARD PROBABILITY				
		Frequent	Probable	Occasional	Remote	Improbable
HAZARD SEVERITY	Catastrophic		Flooding			Earthquake
	Critical		HAZ MAT	Epidemic Severe Summer Wth Severe Winter Wth Wildfire		Terrorism
	Marginal			Land Subsidence	Dam Failure	
	Negligible			Drought		

### Hazard Probability Classifications

Description	Specific Hazard Event
Frequent	Likely to occur frequently within a year time span.
Probable	Will likely occur several times over the course of several years
Occasional	Likely to occur once in a several year period.
Remote	Unlikely to occur once in a several year period, but possible.
Improbable	So unlikely it can be assumed occurrence will not occur

### Hazard Severity Classifications

Severity Levels	Severity Description
Catastrophic	Death or major structural loss
Critical	Severe injury, severe illness or marginal structural damage
Marginal	Minor injury, minor illness, or minor structural damage
Negligible	Injuries or structural damage are not expected



# REGION 8 HAZARD MITIGATION PLAN UPDATE

August 15, 2017 Steering Committee Meeting  
Risk Assessment Matrix Exercise

Name: Melissa Scott

Agency/Municipality/Other: Hardy County planning

**Instructions:** Please fill out the Risk Assessment Matrix below using the appropriate definitions. Write in where you think each hazard discussed falls in the matrix. More than one hazard may be located in one box. Not every box needs to be filled in.

RISK ASSESSMENT MATRIX		HAZARD PROBABILITY				
		Frequent	Probable	Occasional	Remote	Improbable
HAZARD SEVERITY	Catastrophic		Flooding		HAZMAT-GAS TERRORISM	
	Critical			Dam Failure Epidemic		
	Marginal		Winter Storm Land Subsidence Drought	Wildfire	Earthquake	
	Negligible		<del>Drought</del> Severe Summer weather			

### Hazard Probability Classifications

Description	Specific Hazard Event
Frequent	Likely to occur frequently within a year time span.
Probable	Will likely occur several times over the course of several years
Occasional	Likely to occur once in a several year period.
Remote	Unlikely to occur once in a several year period, but possible.
Improbable	So unlikely it can be assumed occurrence will not occur

### Hazard Severity Classifications

Severity Levels	Severity Description
Catastrophic	Death or major structural loss
Critical	Severe injury, severe illness or marginal structural damage
Marginal	Minor injury, minor illness, or minor structural damage
Negligible	Injuries or structural damage are not expected

# REGION 8 HAZARD MITIGATION PLAN UPDATE

August 15, 2017 Steering Committee Meeting  
Risk Assessment Matrix Exercise

Name: Jessica Szabo

Agency/Municipality/Other: City of Romney

**Instructions:** Please fill out the Risk Assessment Matrix below using the appropriate definitions. Write in where you think each hazard discussed falls in the matrix. More than one hazard may be located in one box. Not every box needs to be filled in.

RISK ASSESSMENT MATRIX		HAZARD PROBABILITY				
		Frequent	Probable	Occasional	Remote	Improbable
HAZARD SEVERITY	Catastrophic			Flooding		Haymat Terrorism Wildfire
	Critical	Severe Summer weather <del>Severe Summer weather</del> <del>Severe Summer weather</del>			Drought Epidemic Land Subsidence	Earthquake
	Marginal	Severe Winter weather			<del>Severe Winter weather</del>	Dam Failure
	Negligible					

### Hazard Probability Classifications

Description	Specific Hazard Event
Frequent	Likely to occur frequently within a year time span.
Probable	Will likely occur several times over the course of several years
Occasional	Likely to occur once in a several year period.
Remote	Unlikely to occur once in a several year period, but possible.
Improbable	So unlikely it can be assumed occurrence will not occur

### Hazard Severity Classifications

Severity Levels	Severity Description
Catastrophic	Death or major structural loss
Critical	Severe injury, severe illness or marginal structural damage
Marginal	Minor injury, minor illness, or minor structural damage
Negligible	Injuries or structural damage are not expected

# REGION 8 HAZARD MITIGATION PLAN UPDATE

August 15, 2017 Steering Committee Meeting  
Risk Assessment Matrix Exercise

Name: Paul R Lewis

Agency/Municipality/Other: Hardy Co. - DEM/211

**Instructions:** Please fill out the Risk Assessment Matrix below using the appropriate definitions. Write in where you think each hazard discussed falls in the matrix. More than one hazard may be located in one box. Not every box needs to be filled in.

RISK ASSESSMENT MATRIX		HAZARD PROBABILITY				
		Frequent	Probable	Occasional	Remote	Improbable
HAZARD SEVERITY	Catastrophic	Flooding		Hazmat Incident		
	Critical					
	Marginal	Severe Summer weather	Severe Summer weather wild fires		Dam Failure Epidemic	Earthquake
	Negligible				Terrorism	Land Subsidence

### Hazard Probability Classifications

Description	Specific Hazard Event
Frequent	Likely to occur frequently within a year time span.
Probable	Will likely occur several times over the course of several years
Occasional	Likely to occur once in a several year period.
Remote	Unlikely to occur once in a several year period, but possible.
Improbable	So unlikely it can be assumed occurrence will not occur

### Hazard Severity Classifications

Severity Levels	Severity Description
Catastrophic	Death or major structural loss
Critical	Severe injury, severe illness or marginal structural damage
Marginal	Minor injury, minor illness, or minor structural damage
Negligible	Injuries or structural damage are not expected

# REGION 8 HAZARD MITIGATION PLAN

Hazard Mitigation Plan 2017 Update – Steering Committee Meeting #2

September 11, 2017 ~ 1:00 pm

Sign In Sheet

	Name	Affiliation	Email
1.	Alex Brubaker	Mineral Co. Coordinator	abrubaker@mineralcounty.wv.com
2.	Cullen Sherman	Grant County Health Dept.	Cullen.b.Sherman@wv.gov
3.	Paul Lewis	Hardy Co OEM/E-911	hardypoc@hardynet.com
4.	Bruce Minor	Pendleton Co. OEM	tact.12000@yahoo.com
5.	Amy Heimburger	JH Consulting	aheimburger@jhcpreparedness.com
6.	Carla Dent	R8 POC	cdent@regioneight.org
7.	Melissa Scott	Hardy Co Planning	m.scott.hardyplanner@gmail.com
8.	Frank Wehrle	Town of Franklin	townfrankline@gmail.com
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			



## REGION 8 HAZARD MITIGATION PLAN 2017 UPDATE

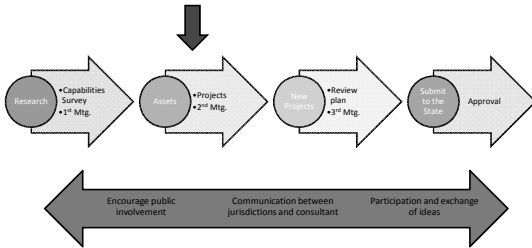
Region 8 PDC Offices  
September 11, 2017  
1:00 pm  
131 Providence Lane  
Petersburg, WV 26847

## WELCOME AND INTRODUCTIONS



## OVERVIEW OF HAZARD MITIGATION AND THE PLANNING PROCESS

Estimated Project Schedule



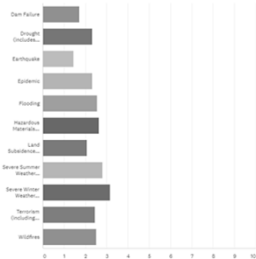
## HAZARDS VS. GOALS REVIEW

Hazard	Corresponding Goals	Others
• Dam Failure	..... (6)	Public Education..... (1)
• Drought	..... (5)	Miscellaneous..... (9)
• Earthquake	..... (5)	
• Epidemic	..... (3)	
• Flooding	..... (15)	
• Hazmat Incident	..... (5)	
• Land Subsidence	..... (5)	
• Severe Summer Weather	..... (5)	
• Severe Winter Weather	..... (7)	
• Terrorism	..... (5)	
• Wildfire	..... (5)	

## HAZARDS VS. GOALS REVIEW New Lists of Hazards

Please indicate how concerned you are about the following hazards, specifically where you live.

ANSWERED BY: 8/29/2017



## TASKS

Goals, Objectives, Projects/Strategies

### GOALS

The overall vision toward which the region will focus efforts  
"Reduce property loss caused by flooding in Region 8"

### OBJECTIVES

Provide a way to measure the movement toward the goal.

- "Acquire and demolish one quarter of the total properties damaged by flooding within the next 5 years"
- "Engage partners to educate them on their flood risks"

### STRATEGIES

Specific tasks each jurisdiction will take on that will work toward the overall goal.

- "Apply for grants to acquire two properties on S Town Run Rd" – Moorefield.
- "Work with the Michael Brothers Memorial Field to ensure they purchase NFIP insurance to prevent loss" - Petersburg



**TASKS**  
**Capabilities Assessment**

You received an online survey by email. This survey asks you about your jurisdiction's:

- rules and regulations regarding floodplain, zoning, and building codes,
- comprehensive plans.
- participation in the NFIP, and
- available capital and public works budget.

**TASKS**

- Update the Asset Inventory if you haven't already.
- Complete the online capabilities survey
- Complete the FEMA NFIP survey and return
- Update project lists (new and existing)
- Post public survey

**THANK YOU!**



## REGION 8 HAZARD MITIGATION PLAN 2017 UPDATE

Region 8 PDC  
September 26, 2017  
10:00 am  
Conference Call

## AGENDA

1. Review goals and objectives
2. Project status update
3. Tasks to be completed

## GOALS & OBJECTIVES

### GOAL 1: Minimize loss of life and property due to natural disasters

- Implement and educate the public on notification and warning measures for natural hazard events
- Protect critical infrastructure and assets
- Develop and sustain partnerships among responders and local officials revolving around education and training
- Maintain and enforce floodplain management activities

### GOAL 2: Minimize loss of life and property due to human-caused disasters

- Educate the public on measures they can/should take regarding human-caused incidents
- Protect critical infrastructure and assets focusing on hardening structures and enhancing security measures
- Develop and sustain partnerships among responders and local officials revolving around education and training

## PROJECTS

What is the status of your projects?

- **Completed:** the project is done and you can prove so with paperwork. Brief explanation of what was done.
- **Deleted:** you no longer want to include this project, you need to explain why.
- **Deferred:** you would like to keep this project because it is relevant, but don't believe you will be able to do anything on the project for at least the next five years.
- **Ongoing:** some projects may be continuous. If the project is ongoing, explain what has been done to date and what will be done in the future.

## TASKS

Complete the NFIP survey from FEMA

- All Jurisdictions

Complete the Capabilities survey online

- Keyser, Piedmont, Bayard, Carpendale, Moorefield, Petersburg, Ridgeley, Wardensville

Return assets for your jurisdiction

- Keyser, Piedmont, Romney, Hampshire County, Hardy County, Pendleton County, Bayard, Carpendale, Petersburg, Ridgeley

Complete new projects worksheet

- All Jurisdictions

# THANK YOU!

**Region 8 Planning and Development Council - September 21, 2017**

<b>v if correct</b>	<b>Last</b>	<b>First</b>	<b>Address</b>	<b>Telephone</b>	<b>Email</b>
	Alderman	Greg	PO Box 7, Wardensville, WV 26851	304-874-3950	
	Veteran Armentrout	Butch	P.O. Box 7 Ridgeley, WV 26753	304-738-1612 (w)	<a href="mailto:carp7@atlanticbb.net">carp7@atlanticbb.net</a>
✓	Ashley	Joan	457 Ashley Lane, Franklin, WV 26807	304-358-2572 (h)	<a href="mailto:joan.ashley@frontier.com">joan.ashley@frontier.com</a>
	Bean	William	P.O. Drawer 30 Moorefield, WV 26807	304-530-6198 (w)	<a href="mailto:gentlemenfirst@yahoo.com">gentlemenfirst@yahoo.com</a>
	Bland	Michael	150 Armstrong Street Keyser, WV 26726	304-788-5921 (w)	<a href="mailto:mbland@mineralcountywv.com">mbland@mineralcountywv.com</a>
	Braithwaite	Tom	P.O. Box 256, Elk Garden, WV 26717	304-446-5684 (h)	<a href="mailto:wbraithwaite@shentel.net">wbraithwaite@shentel.net</a>
	Brill	Alan	5864 Carpers Pike, Yellow Springs, WV 26865	304-856-3635 (h)	<a href="mailto:abrill@frontiernet.net">abrill@frontiernet.net</a>
	Carr	Lynn	PO Box 1290, Ridgeley, WV 26753	304-738-9400 (w)	<a href="mailto:ridgeleymayor@atlanticbbn.net">ridgeleymayor@atlanticbbn.net</a>
	Combs	Mallie	P.O. 209 Moorefield, WV 26836	304-530-3047 (w)	<a href="mailto:mjcombs@hardynet.com">mjcombs@hardynet.com</a>
	Durst	Steven	P.O. Box 274, Bayard, WV 26707		
	Funkhouser	Amy	92 Middle Cove Road, Mathias, WV 26812	304-874-3512	
	Hammond	John	P.O. Box 177, Yellow Springs, WV 26865	304-874-4115 (h)	<a href="mailto:john@asaclinehouse.com">john@asaclinehouse.com</a>
	Helmick	Rose	204 Washington Street, Moorefield, WV 26836	304-530-0284	<a href="mailto:hdyc MMI@court.state.wv.us">hdyc MMI@court.state.wv.us</a>
	Hevener	Carl	343 PG Riggelman Road, Franklin, WV 26807	304-668-9113 c	
	Hiser	Harold	5 Highland Avenue Petersburg, WV 26847	304-257-4550 (w)	
	Keadle	Beverly	340 East Main Street Romney, WV 26757	304-822-5118 (w)	<a href="mailto:mayorofromney@atlanticbbn.net">mayorofromney@atlanticbbn.net</a>

✓	Kitzmiller	Tammy	PO Box 114, Petersburg, WV 26847	304--257-2168 (w)	<a href="mailto:TKitzmiller@grantcounty-wv.com">TKitzmiller@grantcounty-wv.com</a>
✓	Leatherman	Roger	HC 75 Box 144, New Creek, WV 26743	304-289-3106 (h)	<a href="mailto:rdlivi@frontiernet.net">rdlivi@frontiernet.net</a>
	Liller	Terry	370 Hilltop Avenue, Keyser, WV 26726	304-790-2981 c	<a href="mailto:terryliller@gmail.com">terryliller@gmail.com</a>
	Loving	William	PO Box 238, Franklin, WV 26807	304-668-0218 c	<a href="mailto:bloving@yourbank.com">bloving@yourbank.com</a>
	Michael	Gary	PO Box 669, Petersburg, WV 26847	304-257-4941	<a href="mailto:gam99@frontiernet.net">gam99@frontiernet.net</a>
	Parker	David	P.O. Box 901, Romney, WV 26757	304-822-5896 (h)	<a href="mailto:drparker68@yahoo.com">drparker68@yahoo.com</a>
	Sasso	Valerie	PO Box 397, Franklin, WV 26807	304-358-3603	<a href="mailto:jrakula@frontier.com">jrakula@frontier.com</a>
	Sirbaugh	Stephen	HC 71 Box 75-DA, Capon Bridge, WV 26711	304-856-3625 (w) 304-355-2621 (w)	
	Smith	Benjamin	52 Second Street, Piedmont, WV 26750	304-813-2400	<a href="mailto:love_for_chevys@hotmail.com">love_for_chevys@hotmail.com</a>
	Smith	Richard	401 Maple Avenue, Moorefield, WV 26836	304-538-7711 (w)	<a href="mailto:rsmith@ewvcaa/prg">rsmith@ewvcaa/prg</a>
	Stalnaker	Gary	206 Winchester Ave, Moorefield, WV 26836	304-530-6142	<a href="mailto:townofmfld@hardynet.com">townofmfld@hardynet.com</a>
	Walker	Dale	HC 69 Box 228, Fort Seybert, WV 26802	304-249-5397	<a href="mailto:dmw@frontier.com">dmw@frontier.com</a>
	Watts	Sherry	316 Eastern Drive, Moorefield, WV 26836	304-434-8000 (w)	<a href="mailto:sherry.watts@easternwv.edu">sherry.watts@easternwv.edu</a>
	Wilkins	J. D.	P.O. Box 26, Riverton, WV 26814		<a href="mailto:jwilkins@grantcountybank.com">jwilkins@grantcountybank.com</a>
	Williams	Elwood	504 Clement Street, Moorefield, WV 26836	304-257-7236 c	<a href="mailto:cew1999@hardynet.com">cew1999@hardynet.com</a>

Guests Name	Address	Telephone	Email	Representing
-------------	---------	-----------	-------	--------------

Frank Wehrle	"	"	"	Franklin
--------------	---	---	---	----------

Karol Ashenfelter		304 788 2288	Karol/Shirleyash@hotmail.com	Keyser
-------------------	--	--------------	------------------------------	--------

Shirley VanMetre		Staff		
------------------	--	-------	--	--

Wagie Cull		Staff		
------------	--	-------	--	--

Scott Gossard		Staff		
---------------	--	-------	--	--

Melissa Lake		Region 8 Staff		
--------------	--	----------------	--	--

Carla Dent		Staff		
------------	--	-------	--	--

Terry Lovely		Staff		
--------------	--	-------	--	--

# AGENDA

## Region 8 Planning and Development Council Meeting

Thursday, September 21, 2017

12:30 p.m.



- I. CALL TO ORDER
- II. MINUTES OF PREVIOUS MEETING  
July 2017
- III. COMMUNICATIONS
  - A. National Flood Insurance Program (NFIP)
  - B. Value Added Producers Grant Application Workshop
- IV. REPORT
  - A. Treasurer's Report
- V. BUSINESS
  - A. Fiscal Policy and Procedure Updates
  - B. Transitional Housing Extension
  - C. Proposed Changes
  - D. Hazard Mitigation Update
  - E. Director's Report
- VI. ADJOURNMENT

**Region 8 Planning and Development Council**  
**Thursday, September 21, 2017**

**CALL TO ORDER**

Terry Lively called the meeting to order at approximately 12:35 p.m. There were only 2 voting members present, quorum requirements were not met. Therefore, they could not vote on the action items. They will have an Executive Committee meeting in the near future to discuss action items and other important information.

**COMMUNICATIONS**

- A letter dated August 2017 from Allan L. McVey, Insurance Commissioner, notifying all West Virginia state and local governmental entities and non-profit organizations that flood insurance may be available through the National Flood Insurance Program (NFIP).
- Received a flyer from the USDA for a Value Added Producers Grant Application Workshop that will be held on Tuesday, September 26, 2017 from 1:00 p.m. -3:00 p.m.
- Received an e-mail from Beth Ludewig with WV Small Business Development Center. She will be hosting a Small Business Fundamentals Workshop at the Region 8 PDC office on Wednesday, October 25, 2017 at 6:00 p.m.

**REPORTS**

Treasurer's Report

An agency wide balance sheet and agency-wide line item revenues and expenditures sheet was provided to members in their meeting packet.

**BUSINESS**

Fiscal Policy and Procedure Updates

The new Uniform Guidance (2 CFR 200) became effective in December 2014. This new guidance superseded the OMB circulars A-133 and A-87 which previously provided the guidance for state and local governments. All federal grants awarded after December 2014, regardless of the recipient, now follow one uniform guidance code. As a result of this new guidance, the Council has amended some of its fiscal policies to reflect the new regulations. Our auditors, PB Mares, recommended that the Council formally adopt the new Uniform Guidance Cost Principles. Additionally, they also recommended the adoption of a Conflict of interest policy and a cash management policy that reflect the new regulations. Furthermore, they recommended that we review our current procurement policy to ensure that all regulations for procurement are outlined in the policy correctly. The policies have been updated to reflect any necessary changes. A resolution to recognize the adoption of the policies is included in your packet.

Transitional Housing Extension

In December 2016, the Council prepared applications to the Veterans' Administration for the Grants Per Diem Program which funds the Transitional Housing Program. We were recently notified that our application was not funded, but they have given us an extension of 1 year for

24 beds to continue the program until September 30, 2018. During this time, there will be another notice of funding availability (NOFA) and we will submit another application. Staff is currently trying to determine what the Department of Veterans' Affairs requires in these applications to enable to be reviewed favorably.

#### Proposed Changes

Terry informed the group at a recent Community Advancement and Development (CAD) Conference held by the WV Development Office, Secretary of Commerce, H. Wood Thrasher, and Mary Jo Thompson, Director, Community Advancement and Development announced a proposal to amend the current alignment of 11 Regional Councils. The proposal would affect 8 of the Councils. Three Councils would be left unchanged. Currently this is in the planning stage, but it is set to be proposed to the Legislative during next year's session. The WV Development Office is strongly recommending this change. The proposed change would combine Regions 8 and 9. The combining of Region 8 and Region 9 could have adverse effects on both regions that he does not believe the state thoroughly understands. Two maps were included in the meeting packet. One is the current make up of the 11 Regional Councils and the other is a map showing the proposed seven CAD zones. Terry told the group that he would be glad to entertain any questions that they may have at this time. Discussion Occurred.

#### Hazard Mitigation Update

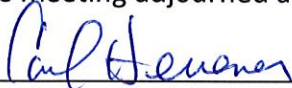
The Steering Committee met on August 15<sup>th</sup> and September 11<sup>th</sup> to discuss the Hazard Mitigation Plan Update. Jeffery Harvey and Amy Heimberger with JH Consulting presented a PowerPoint presentation. Amy gave all the members risk assessments and asset lists to complete. The Steering Committee will meet by conference call at 10:00 a.m. on September 26, 2017 to review the goals and objectives. All jurisdictions are encouraged to attend. The next in-person steering committee meeting will be on Wednesday, October 18, 2017 at 1:00 p.m.

#### Director's Report

The National Council on Aging held a site visit on September 13 – 15, 2017, for the Senior Community Service Employment Program. The performance evaluation stated that the program helped the maximum number of eligible older Americans better their lives. Overall the Council received an excellent review of the program. This project has been performing at a very high level across all aspects of program management.

#### ADJOURNMENT

The meeting adjourned at 1:30 p.m.



Carl Hevener, Secretary



Carla Dent, Executive Assistant



# REGION 8 HAZARD MITIGATION PLAN

Hazard Mitigation Plan 2017 Update – Steering Committee Meeting #4

October 25, 2017 ~ 1:00 pm

Sign In Sheet

	Name	Affiliation	Email
1.	Frank Wehrle	Town of Franklin	townfranklin@gmail.com
2.	Drew Brubaker	Mineral Co. Commissioner	dbrubaker@mineralcounty.wv.gov
3.	Carla Dent	Region 8	cdent@regioneight.org
4.	Amy Heimberger	JH Consulting	aheimberger@jhppreparedness.com
5.	Paul R Lewis	Hardy Co O&M/9/11	hardypoc@hardynet.com
6.	Cullen Sherman	Grant Co Health Dept	Cullen.Sherman@WV.gov
7.	Brian Malcolm	Wayside County HSEH	bmalcolm@wayside.wv.gov
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			



## REGION 8 HAZARD MITIGATION PLAN 2017 UPDATE

Region 8 PDC Offices  
October 25, 2017  
1:00 pm  
131 Providence Lane  
Petersburg, WV 26847

## AGENDA

1. Review goals and objectives
2. Project status update
3. Tasks to be completed
4. Public survey results
5. New projects
6. Future development

## GOALS & OBJECTIVES

### GOAL 1: Minimize loss of life and property due to natural disasters

- Implement and educate the public on notification and warning measures for natural hazard events
- Protect critical infrastructure and assets
- Develop and sustain partnerships among responders and local officials revolving around education and training
- Maintain and enforce floodplain management activities

### GOAL 2: Minimize loss of life and property due to human-caused disasters

- Educate the public on measures they can/should take regarding human-caused incidents
- Protect critical infrastructure and assets focusing on hardening structures and enhancing security measures
- Develop and sustain partnerships among responders and local officials revolving around education and training

## PROJECTS

What is the status of your projects?

- **Completed:** the project is done and you can prove so with paperwork. Brief explanation of what was done.
- **Deleted:** you no longer want to include this project, you need to explain why.
- **Deferred:** you would like to keep this project because it is relevant, but don't believe you will be able to do anything on the project for at least the next five years.
- **Ongoing:** some projects may be continuous. If the project is ongoing, explain what has been done to date and what will be done in the future.

## TASKS

### Complete the NFIP survey from FEMA

- All Jurisdictions

### Complete the Capabilities survey online

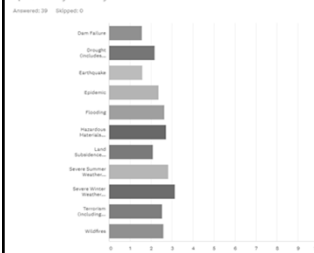
- Keyser, Piedmont, Bayard, Carpendale, Moorefield, Petersburg, Ridgeley, Wardensville

### Return assets for your jurisdiction

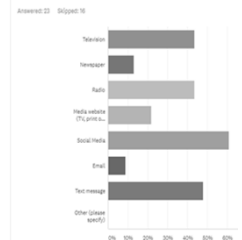
- Keyser, Piedmont, Romney, Hardy County, Pendleton County, Bayard, Caprendale, Petersburg, Ridgeley

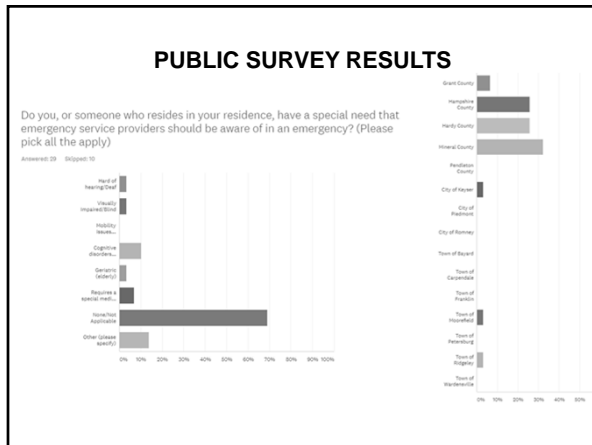
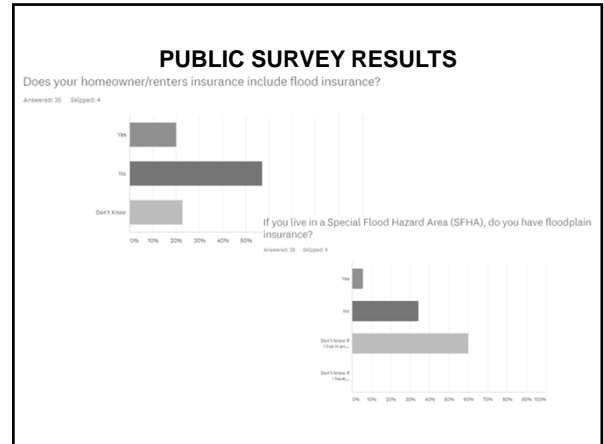
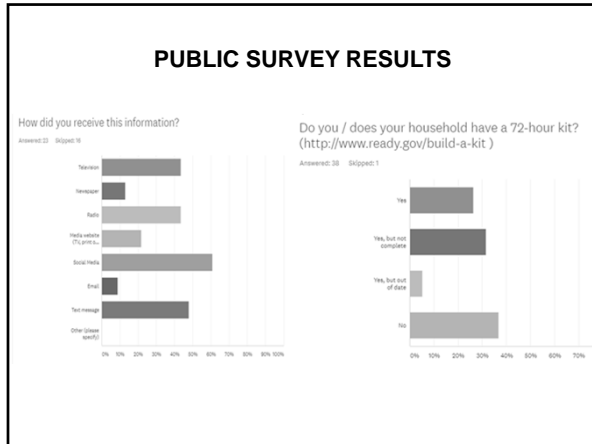
## PUBLIC SURVEY RESULTS

Please indicate how concerned you are about the following hazards, specifically where you live.



How did you receive this information?





### TASKS

**Complete new projects worksheet**

- All Jurisdictions

### FUTURE DEVELOPMENT DISCUSSION

- How has the region (each county) developed in the last five years?
- Has your jurisdiction implemented any new or updated codes/ordinances/regulations regarding building in certain areas (restricting or encouraging)?
- Over the past five or ten years have you seen any demographic changes, economic development, etc., that may impact the next five years?
- What are the development plans for your jurisdiction?

### PLAN MAINTENANCE DISCUSSION

- How will you ensure that mitigation strategies are implemented according to the plan?
- How will you monitor progress?
- When will you monitor progress?
- How will every jurisdiction report progress?
- How will you identify changes/updates in the plan?
- How will you document changes in priorities?

### **PLAN INTEGRATION DISCUSSION**

- What other plans does your jurisdiction currently have?
- Are there any plans that your jurisdiction is updating?
- How do these plans address mitigation issues? Do they include mitigation projects?
- How can you use this mitigation plan to inform others in your jurisdiction?

**THANK YOU!**

## NEW MITIGATION PROJECTS FOR THE HAZARD MITIGATION PLAN UPDATE

This worksheet is designed to assist you in identifying mitigation projects that you are currently working on in your jurisdiction or soon will be. Please fill out the sheet completely and as specifically and accurately as possible.

**MITIGATION** is “the effort to reduce loss of life and property by lessening the impact of disasters” (FEMA.gov, 2016).

EXAMPLES OF **MITIGATION** ACTIONS ARE PLANNING AND ZONING, FLOODPLAIN PROTECTION, PROPERTY ACQUISITION AND RELOCATION, OR PUBLIC OUTREACH PROJECTS.

EXAMPLES OF **PREPAREDNESS** ACTIONS ARE INSTALLING DISASTER WARNING SYSTEMS, PURCHASING RADIO COMMUNICATIONS EQUIPMENT, OR CONDUCTING EMERGENCY RESPONSE TRAINING.

- FEMA, 2013

The following hazards have been identified by the steering committee for your planning area. Please use these as a guide to filling out the worksheet.

- Dam Failure
- Epidemic
- Land Subsidence
- Terrorism
- Drought
- Flood
- Summer Weather
- Wildfire
- Earthquake
- Hazmat
- Winter Weather

For project ideas, refer to FEMA’s *Mitigation Ideas: A resource for reducing risk to natural hazards* document available online.

1. What are your hazards of concern? Why do they concern you? What type of impacts or destruction has your county/city/town experienced because of it? Please complete the table below. Use as many spaces as you need.

Hazard of Concern	Reasons for Concern	Impacts or Destruction from Hazard
a. Ex. Flood	Ex. The storm sewers back up causing flooding throughout the town.	Ex. Main St. floods every time it rains for over two hours and causes the street to be closed to traffic. Businesses are impacted by the loss in revenue from the lack of access.
b. Ex. Heavy Snow	Ex. The buildings in our town are very old and may not handle the increased amount of snow we've seen in the recent years.	Ex. Two residences' roofs have collapsed due to the heavy snow load.
1. Flood/Sudden Down pours	Storm system currently not designed to handle storm loads	Erosion of streets & property damage
2. Storms/Loss of Power	Loss of power causes water pump stations to stop functioning.	Loss of supplied water to certain sections of town
3.		
4.		
5.		

2. Based on the problems identified in question 1, what has been or will be done to fix them? Each number corresponds to the hazard identified on the previous page.

Hazard of Concern	What Has Been Done	What Will Be Done
a. Ex. Flood	Ex. We have identified the problem areas within the storm water system that need maintenance/rebuilding.	Ex. We will build retention basins in several locations to help with the amount of water reaching the drains.
b. Ex. Heavy Snow	Ex. New construction is now required to address the higher snow loads.	Ex. Any reconstruction of old residences will be required to follow current building code standards to reduce the impacts. We will encourage residents to reinforce their homes.
1. Flood/Sudden Down pours	Case by case reacting to hazards created	Research possible improvements/upgrades to storm system
2. Storms/Loss of Power	Temporary water stations	Generator to be installed @ pump station once funds are found
3.		
4.		
5.		

3. Based on the *completed* projects from the previous plan, are there any that could be expanded upon?

Hazard of Concern	Previous Project ID & Description	Further development of project
a. Ex. Flood	Ex. 1.1.1 Maintain compliance with the NFIP at the jurisdictional level by attending training, monitoring development, and ensuring the local floodplain regulations are as current and applicable as possible.	Ex. Thoroughly research Community Rating System requirements and begin gathering necessary paperwork to become a CRS Community. Identify and implement new projects that can count toward CRS.
1.  N/A		
2.		
3.		
4.		
5.		



## NEW MITIGATION PROJECTS FOR THE HAZARD MITIGATION PLAN UPDATE

This worksheet is designed to assist you in identifying mitigation projects that you are currently working on in your jurisdiction or soon will be. Please fill out the sheet completely and as specifically and accurately as possible.

**MITIGATION** is “the effort to reduce loss of life and property by lessening the impact of disasters” (FEMA.gov, 2016).

EXAMPLES OF **MITIGATION** ACTIONS ARE PLANNING AND ZONING, FLOODPLAIN PROTECTION, PROPERTY ACQUISITION AND RELOCATION, OR PUBLIC OUTREACH PROJECTS.

EXAMPLES OF **PREPAREDNESS** ACTIONS ARE INSTALLING DISASTER WARNING SYSTEMS, PURCHASING RADIO COMMUNICATIONS EQUIPMENT, OR CONDUCTING EMERGENCY RESPONSE TRAINING.

- FEMA, 2013

The following hazards have been identified by the steering committee for your planning area. Please use these as a guide to filling out the worksheet.

- Dam Failure
- Epidemic
- Land Subsidence
- Terrorism
- Drought
- Flood
- Summer Weather
- Wildfire
- Earthquake
- Hazmat
- Winter Weather

For project ideas, refer to FEMA’s *Mitigation Ideas: A resource for reducing risk to natural hazards* document available online.

1. What are your hazards of concern? Why do they concern you? What type of impacts or destruction has your county/city/town experienced because of it? Please complete the table below. Use as many spaces as you need.

Hazard of Concern	Reasons for Concern	Impacts or Destruction from Hazard
a. Ex. Flood	Ex. The storm sewers back up causing flooding throughout the town.	Ex. Main St. floods every time it rains for over two hours and causes the street to be closed to traffic. Businesses are impacted by the loss in revenue from the lack of access.
b. Ex. Heavy Snow	Ex. The buildings in our town are very old and may not handle the increased amount of snow we've seen in the recent years.	Ex. Two residences' roofs have collapsed due to the heavy snow load.
1. Repetitive Flood Loss Flooding	Continued loss by Same Homeowners	Several homes have experienced past Flooding
2. Flood	Several Residents become stranded when Flooding Occurs	need to work on backup evacuation routes or the ability to shelter before Flooding
3.		
4.		
5.		

Jurisdiction: \_\_\_\_\_

2. Based on the problems identified in question 1, what has been or will be done to fix them? Each number corresponds to the hazard identified on the previous page.

Hazard of Concern	What Has Been Done	What Will Be Done
a. Ex. Flood	Ex. We have identified the problem areas within the storm water system that need maintenance/rebuilding.	Ex. We will build retention basins in several locations to help with the amount of water reaching the drains.
b. Ex. Heavy Snow	Ex. New construction is now required to address the higher snow loads.	Ex. Any reconstruction of old residences will be required to follow current building code standards to reduce the impacts. We will encourage residents to reinforce their homes.
1. Flood	Stricter Floodplain & Flood way regulations have been placed for new Const.	Attempt to mitigate these residents through a buyout program
2. Flood	Identifying the problem	A meeting with these residents & DOT officials to work on a solution.
3.		
4.		
5.		

3. Based on the *completed* projects from the previous plan, are there any that could be expanded upon?

Hazard of Concern	Previous Project ID & Description	Further development of project
a. Ex. Flood	Ex. 1.1.1 Maintain compliance with the NFIP at the jurisdictional level by attending training, monitoring development, and ensuring the local floodplain regulations are as current and applicable as possible.	Ex. Thoroughly research Community Rating System requirements and begin gathering necessary paperwork to become a CRS Community. Identify and implement new projects that can count toward CRS.
1.  Flooding		work to mitigate these sites through buyout.
2.		
3.		
4.		
5.		

NATIONAL FLOOD INSURANCE PROGRAM (NFIP) SURVEY

JURISDICTION: Grant County

1. FLOODPLAIN IDENTIFICATION AND MAPPING			
Requirement	Recommended Action	Yes/No	Comments
a. Does the municipality maintain accessible copies of an effective Flood Insurance Rate Map (FIRM)/Digital Flood Insurance Rate Map (DFIRM)? Does the municipality maintain accessible copies of the most recent Flood Insurance Study (FIS)?	Place these documents in the local libraries or make available publicly.	Yes	
b. Has the municipality adopted the most current DFIRM/FIRM and FIS?	State the date of adoption, if approved.	Yes	September 27, 2009
c. Does the municipality support request for map updates?	If yes, state how.	Yes	Public meetings
d. Does the municipality share with Federal Emergency Management Agency (FEMA) any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data?	If yes, specify how.	Yes	If any new data is found it is shared with FEMA
e. Does the municipality provide assistance with local floodplain determinations?	If yes, specify how.	Yes	When property owners go to obtain a building permit a floodplain determination is done first
f. Does the municipality maintain a record of approved Letters of Map Change?	If yes, specify the responsible office.	Yes	Grant County Commission / Grant County Health Department

2. FLOODPLAIN MANAGEMENT			
Requirement	Recommended Action	Yes/No	Comments
a. Has the municipality adopted a compliant floodplain management ordinance that, at a minimum, regulates the following:	If yes, answer questions (1) through (4) below.		
(1) Does the municipality issue permits for all proposed development in the Special Flood Hazard Areas (SFHAs)?	If yes, specify the office responsible.	Yes	Grant County Health Department
(2) Does the municipality obtain, review, and utilize any Base Flood Elevation (BFE) and floodway data, and/or require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres?	If yes, specify the office responsible.	Yes	GCHD
(3) Does the municipality identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the BFE, including anchoring, using flood-resistant materials, and designing or locating utilities and service facilities to prevent water damage?	If yes, specify the office responsible.	Yes	GCHD
(4) Does the municipality document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures?	If yes, specify the office responsible.	Yes	Grant County Health Department
b. If a compliant floodplain ordinance was adopted, does the municipality enforce the ordinance by monitoring compliance and taking remedial action to correct violations?	If yes, specify how.	Yes	Any violations of the ordinance is reported to FEMA if the property owner is noncompliant. If this does not work Can take the issue to magistrates Court.

2. FLOODPLAIN MANAGEMENT			
Requirement	Recommended Action	Yes/No	Comments
<p>c. Has the municipality considered adopting activities that extend beyond the minimum requirements? Examples include:</p> <ul style="list-style-type: none"> <li>• Participation in the Community Rating System</li> <li>• Prohibition of production or storage of chemicals in SFHA</li> <li>• Prohibition of certain types of structures, such as hospitals, nursing homes, and jails in SFHA</li> <li>• Prohibition of certain types of residential housing (manufactured homes) in SFHA</li> <li>• Floodplain ordinances that prohibit any new residential or nonresidential structures in SFHA</li> </ul>	If yes, specify activities.	Yes	Looked at joining the CRS Program however; with my other duties as a Sanitarian I do not have the time to be that involved in floodplain management

3. FLOOD INSURANCE			
Requirement	Recommended Action	Yes/No	Comments
a. Does the municipality educate community members about the availability and value of flood insurance?	If yes, specify how.	Yes	when they are building in the flood zone individuals are informed about flood insurance
b. Does the municipality inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates?	If yes, specify how.	Yes	when changes are made to the maps a community meeting is held to inform about the changes to the map
c. Does the municipality provide general assistance to community members regarding insurance issues?	If yes, specify how.	Yes	Flood plain determinations

## NEW MITIGATION PROJECTS FOR THE HAZARD MITIGATION PLAN UPDATE

This worksheet is designed to assist you in identifying mitigation projects that you are currently working on in your jurisdiction or soon will be. Please fill out the sheet completely and as specifically and accurately as possible.

**MITIGATION** is “the effort to reduce loss of life and property by lessening the impact of disasters” (FEMA.gov, 2016).

EXAMPLES OF **MITIGATION** ACTIONS ARE PLANNING AND ZONING, FLOODPLAIN PROTECTION, PROPERTY ACQUISITION AND RELOCATION, OR PUBLIC OUTREACH PROJECTS.

EXAMPLES OF **PREPAREDNESS** ACTIONS ARE INSTALLING DISASTER WARNING SYSTEMS, PURCHASING RADIO COMMUNICATIONS EQUIPMENT, OR CONDUCTING EMERGENCY RESPONSE TRAINING.

- FEMA, 2013

The following hazards have been identified by the steering committee for your planning area. Please use these as a guide to filling out the worksheet.

- Dam Failure
- Epidemic
- Land Subsidence
- Terrorism
- Drought
- Flood
- Summer Weather
- Wildfire
- Earthquake
- Hazmat
- Winter Weather

For project ideas, refer to FEMA's *Mitigation Ideas: A resource for reducing risk to natural hazards* document available online.



1. What are your hazards of concern? Why do they concern you? What type of impacts or destruction has your county/city/town experienced because of it? Please complete the table below. Use as many spaces as you need.

Hazard of Concern	Reasons for Concern	Impacts or Destruction from Hazard
a. Ex. Flood	Ex. The storm sewers back up causing flooding throughout the town.	Ex. Main St. floods every time it rains for over two hours and causes the street to be closed to traffic. Businesses are impacted by the loss in revenue from the lack of access.
b. Ex. Heavy Snow	Ex. The buildings in our town are very old and may not handle the increased amount of snow we've seen in the recent years.	Ex. Two residences' roofs have collapsed due to the heavy snow load.
1. Extreme Winter Storms with Heavy Snow	Power Lines down Road Closure	Accidents with Injuries Delay getting to people Length of Power Outages
2. Flooding	Have had major Flood in County before and will happen again.	Earthquake walls were made and have not really been tested for protection
3. Hazmat	One Industry that sits in Moonfield has a large quantity of a chemical that is deadly if released	Most likely several people would die or become ill before they could be evacuated
4.		
5.		

2. Based on the problems identified in question 1, what has been or will be done to fix them? Each number corresponds to the hazard identified on the previous page.

Hazard of Concern	What Has Been Done	What Will Be Done
a. Ex. Flood	Ex. We have identified the problem areas within the storm water system that need maintenance/rebuilding.	Ex. We will build retention basins in several locations to help with the amount of water reaching the drains.
b. Ex. Heavy Snow	Ex. New construction is now required to address the higher snow loads.	Ex. Any reconstruction of old residences will be required to follow current building code standards to reduce the impacts. We will encourage residents to reinforce their homes.
1. Winter storms	Problems are known by everyone. we try to keep roads cleared and people prepared.	More education on being prepared.
2. Flooding	Man made protection well as required all new structures has to meet FEMA regulations.	Continue to educate public and have them protect their property and any way they can by retro fitting.
3. Haymat	Company has placed cut off valves every 500 feet to be able to cut off the flow in a leak.	Continue to monitor and work with Safety Center the industry.
4.		
5.		

3. Based on the *completed* projects from the previous plan, are there any that could be expanded upon?

Hazard of Concern	Previous Project ID & Description	Further development of project
a. Ex. Flood	Ex. 1.1.1 Maintain compliance with the NFIP at the jurisdictional level by attending training, monitoring development, and ensuring the local floodplain regulations are as current and applicable as possible.	Ex. Thoroughly research Community Rating System requirements and begin gathering necessary paperwork to become a CRS Community. Identify and implement new projects that can count toward CRS.
1. Communication system	2.2.1 - Regional Plan - continue to build additional towns and continue build out	Keep press state government the need for funding for upkeep of the system
2. water resources	H 3.1.3 - Plan was done a few years back	Plan needs review and updated.
3.		
4.		
5.		

NATIONAL FLOOD INSURANCE PROGRAM (NFIP) SURVEY

JURISDICTION:       HAMPSHIRE COUNTY      

<b>1. FLOODPLAIN IDENTIFICATION AND MAPPING</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Does the municipality maintain accessible copies of an effective Flood Insurance Rate Map (FIRM)/Digital Flood Insurance Rate Map (DFIRM)? Does the municipality maintain accessible copies of the most recent Flood Insurance Study (FIS)?	Place these documents in the local libraries or make available publicly.	Yes	Available at the Hampshire County Planning Office & the Hampshire County Library
b. Has the municipality adopted the most current DFIRM/FIRM and FIS?	State the date of adoption, if approved.	Yes	November 7, 2002
c. Does the municipality support request for map updates?	If yes, state how.	Yes	GIS Layers and any new studies are presented.
d. Does the municipality share with Federal Emergency Management Agency (FEMA) any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data?	If yes, specify how.	Yes	The Planning Office would share any scientific data via the Regional Office of FEMA and the WV State Office of Emergency Management FEMA Representatives.
e. Does the municipality provide assistance with local floodplain determinations?	If yes, specify how.	Yes	The Planning Office will review all forms and give guidance where needed. The Planning Office also uses Hampshire County GIS and the WV Flood Tool.
f. Does the municipality maintain a record of approved Letters of Map Change?	If yes, specify the responsible office.	Yes	The Planning Office

<b>2. FLOODPLAIN MANAGEMENT</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Has the municipality adopted a compliant floodplain management ordinance that, at a minimum, regulates the following:	If yes, answer questions (1) through (4) below.	Yes	
(1) Does the municipality issue permits for all proposed development in the Special Flood Hazard Areas (SFHAs)?	If yes, specify the office responsible.	Yes	The Hampshire County Planning Office
(2) Does the municipality obtain, review, and utilize any Base Flood Elevation (BFE) and floodway data, and/or require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres?	If yes, specify the office responsible.	Yes	The Hampshire County Planning Office
(3) Does the municipality identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the BFE, including anchoring, using flood-resistant materials, and designing or locating utilities and service facilities to prevent water damage?	If yes, specify the office responsible.	Yes	The Hampshire County Planning Office
(4) Does the municipality document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures?	If yes, specify the office responsible.	Yes	The Hampshire County Planning Office
b. If a compliant floodplain ordinance was adopted, does the municipality enforce the ordinance by monitoring compliance and taking remedial action to correct violations?	If yes, specify how.	Yes	Building permits are required. Stop Work orders are issued for those who do not obtain a building permit. Floodplain inspections are completed for any work done in a floodplain. Fees and penalties are assessed when someone fails to comply.

<b>2. FLOODPLAIN MANAGEMENT</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
c. Has the municipality considered adopting activities that extend beyond the minimum requirements? Examples include: <ul style="list-style-type: none"> <li>• Participation in the Community Rating System</li> <li>• Prohibition of production or storage of chemicals in SFHA</li> <li>• Prohibition of certain types of structures, such as hospitals, nursing homes, and jails in SFHA</li> <li>• Prohibition of certain types of residential housing (manufactured homes) in SFHA</li> <li>• Floodplain ordinances that prohibit any new residential or nonresidential structures in SFHA</li> </ul>	If yes, specify activities.		

<b>3. FLOOD INSURANCE</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Does the municipality educate community members about the availability and value of flood insurance?	If yes, specify how.		
b. Does the municipality inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates?	If yes, specify how.		
c. Does the municipality provide general assistance to community members regarding insurance issues?	If yes, specify how.		

NATIONAL FLOOD INSURANCE PROGRAM (NFIP) SURVEY

JURISDICTION: \_\_\_HARDY COUNTY

1. FLOODPLAIN IDENTIFICATION AND MAPPING			
Requirement	Recommended Action	Yes/No	Comments
a. Does the COUNTY maintain accessible copies of an effective Flood Insurance Rate Map (FIRM)/Digital Flood Insurance Rate Map (DFIRM)? Does the COUNTY maintain accessible copies of the most recent Flood Insurance Study (FIS)?	Place these documents in the local libraries or make available publicly.	y	YES - they are all on Desktop computer, Online on WV website, FEMA website, and there are hard copies in office
b. Has the COUNTY adopted the most current DFIRM/FIRM and FIS?	State the date of adoption, if approved.	y	Yes 2009
c. Does the COUNTY support request for map updates?	If yes, state how.	y	YES – We are a required part of the update process so updates would not happen without this office/County Commission being included.
d. Does the COUNTY share with Federal Emergency Management Agency (FEMA) any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data?	If yes, specify how.	y	YES – a permit for any project at that level would require CLOMR and that process would provide FEMA with the technical data.
e. Does the COUNTY provide assistance with local floodplain determinations?	If yes, specify how.	y	YES – every building permit gets a floodplain determination – have desktop GIS with DFIRMS, with this, applicants confirm location of each construction.
f. Does the COUNTY maintain a record of approved Letters of Map Change?	If yes, specify the responsible office.	y	YES – we get all LOMA and LOMRs mailed to us and all are available through the FEMA map service – All NFIP information and processes are handled by the Hardy County Planning Office Data received at both planning office (planner is the county floodplain manager) and county commission.

<b>2. FLOODPLAIN MANAGEMENT</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Has the COUNTY adopted a compliant floodplain management ordinance that, at a minimum, regulates the following:	If yes, answer questions (1) through (4) below.	Yes	
(1) Does the COUNTY issue permits for all proposed development in the Special Flood Hazard Areas (SFHAs)?	If yes, specify the office responsible.	Yes	Planning office issues building permits for ALL development (in our out of SFHA) and all permit applications are required to be compliance with floodplain, zoning and subdivision ordinances Planning Office has all data on file
(2) Does the COUNTY obtain, review, and utilize any Base Flood Elevation (BFE) and floodway data, and/or require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres?	If yes, specify the office responsible.	Yes	Planning office building permits has all data on file
(3) Does the COUNTY identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the BFE, including anchoring, using flood-resistant materials, and designing or locating utilities and service facilities to prevent water damage?	If yes, specify the office responsible.	Yes	Planning office building permits has all data on file
(4) Does the COUNTY document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures?	If yes, specify the office responsible.	Yes	Planning office building permits has all data on file.
b. If a compliant floodplain ordinance was adopted, does the COUNTY enforce the ordinance by monitoring compliance and taking remedial action to correct violations?	If yes, specify how.		Yes, any violations letter are sent and mediation measures suggested violators can be fined. With no building code in place construction detail is not inspected.



2. FLOODPLAIN MANAGEMENT			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
<p>c. Has the COUNTY considered adopting activities that extend beyond the minimum requirements? Examples include:</p> <ul style="list-style-type: none"> <li>• Participation in the Community Rating System</li> <li>• Prohibition of production or storage of chemicals in SFHA</li> <li>• Prohibition of certain types of structures, such as hospitals, nursing homes, and jails in SFHA</li> <li>• Prohibition of certain types of residential housing (manufactured homes) in SFHA</li> <li>• Floodplain ordinances that prohibit any new residential or nonresidential structures in SFHA</li> </ul>	<p>If yes, specify activities.</p>		<p>Consider CRS but without political support for building code points would be low. Will adopt new state floodplain ordinance (template) within next year. Zoning and current floodplain ordinances restrict storage in SFHA and certain types of residential. We try to deter public structure in the SFHA but have received pushback and lack of inclusion in site planning of such structures. Often public entities refuse to get building permits which include floodplain determination and ordinance compliance.</p>

3. FLOOD INSURANCE			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
<p>a. Does the COUNTY educate community members about the availability and value of flood insurance?</p>	<p>If yes, specify how.</p>	<p>No</p>	
<p>b. Does the COUNTY inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates?</p>	<p>If yes, specify how.</p>	<p>Yes</p>	<p>Community meetings that are required with any map changes.</p>
<p>c. Does the COUNTY provide general assistance to community members regarding insurance issues?</p>	<p>If yes, specify how.</p>	<p>Yes</p>	<p>Help with determinations, data, and elevation certificates and letters.</p>

NATIONAL FLOOD INSURANCE PROGRAM (NFIP) SURVEY

JURISDICTION: Merced County

1. FLOODPLAIN IDENTIFICATION AND MAPPING			
Requirement	Recommended Action	Yes/No	Comments
a. Does the municipality maintain accessible copies of an effective Flood Insurance Rate Map (FIRM)/Digital Flood Insurance Rate Map (DFIRM)? Does the municipality maintain accessible copies of the most recent Flood Insurance Study (FIS)?	Place these documents in the local libraries or make available publicly.	yes	Copies of the maps are on file in the Planning Office in addition to the sub-based w/ Flood Ins.
b. Has the municipality adopted the most current DFIRM/FIRM and FIS?	State the date of adoption, if approved.	yes	
c. Does the municipality support request for map updates?	If yes, state how.		
d. Does the municipality share with Federal Emergency Management Agency (FEMA) any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data?	If yes, specify how.	yes	All LOMHS must be approved by FEMA
e. Does the municipality provide assistance with local floodplain determinations?	If yes, specify how.		
f. Does the municipality maintain a record of approved Letters of Map Change?	If yes, specify the responsible office.	yes	Merced County Planning Office

2. FLOODPLAIN MANAGEMENT			
Requirement	Recommended Action	Yes/No	Comments
a. Has the municipality adopted a compliant floodplain management ordinance that, at a minimum, regulates the following:	If yes, answer questions (1) through (4) below.		
(1) Does the municipality issue permits for all proposed development in the Special Flood Hazard Areas (SFHAs)?	If yes, specify the office responsible.	yes	Planning Office
(2) Does the municipality obtain, review, and utilize any Base Flood Elevation (BFE) and floodway data, and/or require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres?	If yes, specify the office responsible.	yes	Planning Office
(3) Does the municipality identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the BFE, including anchoring, using flood-resistant materials, and designing or locating utilities and service facilities to prevent water damage?	If yes, specify the office responsible.	yes	Planning
(4) Does the municipality document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures?	If yes, specify the office responsible.	yes	Planning
b. If a compliant floodplain ordinance was adopted, does the municipality enforce the ordinance by monitoring compliance and taking remedial action to correct violations?	If yes, specify how.	yes	Elevation studies are all required before and after construction

2. FLOODPLAIN MANAGEMENT			
Requirement	Recommended Action	Yes/No	Comments
<p>c. Has the municipality considered adopting activities that extend beyond the minimum requirements? Examples include:</p> <ul style="list-style-type: none"> <li>• Participation in the Community Rating System</li> <li>• Prohibition of production or storage of chemicals in SFHA</li> <li>• Prohibition of certain types of structures, such as hospitals, nursing homes, and jails in SFHA</li> <li>• Prohibition of certain types of residential housing (manufactured homes) in SFHA</li> <li>• Floodplain ordinances that prohibit any new residential or nonresidential structures in SFHA</li> </ul>	If yes, specify activities.	no	

3. FLOOD INSURANCE			
Requirement	Recommended Action	Yes/No	Comments
a. Does the municipality educate community members about the availability and value of flood insurance?	If yes, specify how.	no	
b. Does the municipality inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates?	If yes, specify how.	no	
c. Does the municipality provide general assistance to community members regarding insurance issues?	If yes, specify how.	no	

NATIONAL FLOOD INSURANCE PROGRAM (NFIP) SURVEY

JURISDICTION:       PENDLETON COUNTY      

<b>1. FLOODPLAIN IDENTIFICATION AND MAPPING</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Does the municipality maintain accessible copies of an effective Flood Insurance Rate Map (FIRM)/Digital Flood Insurance Rate Map (DFIRM)? Does the municipality maintain accessible copies of the most recent Flood Insurance Study (FIS)?	Place these documents in the local libraries or make available publicly.	NO	Information is available online
b. Has the municipality adopted the most current DFIRM/FIRM and FIS?	State the date of adoption, if approved.	YES	No formal adoption process , however latest information is used for flood determination. Latest is 03/07/2017
c. Does the municipality support request for map updates?	If yes, state how.	YES	Advise requester on how to obtain a LOMA
d. Does the municipality share with Federal Emergency Management Agency (FEMA) any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data?	If yes, specify how.	N/A	
e. Does the municipality provide assistance with local floodplain determinations?	If yes, specify how.	NO	
f. Does the municipality maintain a record of approved Letters of Map Change?	If yes, specify the responsible office.	NO	These records are available from FEMA

<b>2. FLOODPLAIN MANAGEMENT</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Has the municipality adopted a compliant floodplain management ordinance that, at a minimum, regulates the following:	If yes, answer questions (1) through (4) below.	yes	
(1) Does the municipality issue permits for all proposed development in the Special Flood Hazard Areas (SFHAs)?	If yes, specify the office responsible.	YES	Assessor's Office
(2) Does the municipality obtain, review, and utilize any Base Flood Elevation (BFE) and floodway data, and/or require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres?	If yes, specify the office responsible.	NO	No relevant activity
(3) Does the municipality identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the BFE, including anchoring, using flood-resistant materials, and designing or locating utilities and service facilities to prevent water damage?	If yes, specify the office responsible.	YES	County Commission
(4) Does the municipality document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures?	If yes, specify the office responsible.	YES	County Commission
b. If a compliant floodplain ordinance was adopted, does the municipality enforce the ordinance by monitoring compliance and taking remedial action to correct violations?	If yes, specify how.	NO	

<b>2. FLOODPLAIN MANAGEMENT</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
<p>c. Has the municipality considered adopting activities that extend beyond the minimum requirements? Examples include:</p> <ul style="list-style-type: none"> <li>• Participation in the Community Rating System</li> <li>• Prohibition of production or storage of chemicals in SFHA</li> <li>• Prohibition of certain types of structures, such as hospitals, nursing homes, and jails in SFHA</li> <li>• Prohibition of certain types of residential housing (manufactured homes) in SFHA</li> <li>• Floodplain ordinances that prohibit any new residential or nonresidential structures in SFHA</li> </ul>	If yes, specify activities.	NO	

<b>3. FLOOD INSURANCE</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Does the municipality educate community members about the availability and value of flood insurance?	If yes, specify how.	YES	Provide advice on obtaining Flood Insurance
b. Does the municipality inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates?	If yes, specify how.	NO	
c. Does the municipality provide general assistance to community members regarding insurance issues?	If yes, specify how.	YES	Advise on value and reasons for flood insurance

NATIONAL FLOOD INSURANCE PROGRAM (NFIP) SURVEY

JURISDICTION: TOWN OF FRANKLIN

<b>1. FLOODPLAIN IDENTIFICATION AND MAPPING</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Does the municipality maintain accessible copies of an effective Flood Insurance Rate Map (FIRM)/Digital Flood Insurance Rate Map (DFIRM)? Does the municipality maintain accessible copies of the most recent Flood Insurance Study (FIS)?	Place these documents in the local libraries or make available publicly.	Yes	They are available at the Town Office.
b. Has the municipality adopted the most current DFIRM/FIRM and FIS?	State the date of adoption, if approved.	Yes	February 18. 2010
c. Does the municipality support request for map updates?	If yes, state how.	Yes	We submit requests for updates whenever an issue arises requiring them.
d. Does the municipality share with Federal Emergency Management Agency (FEMA) any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data?	If yes, specify how.	Yes	We would share any and all data that comes to us with FEMA.
e. Does the municipality provide assistance with local floodplain determinations?	If yes, specify how.	Yes	The Town Floodplain manager assists in determinations.
f. Does the municipality maintain a record of approved Letters of Map Change?	If yes, specify the responsible office.	Yes	The Town Office is the repository.



NATIONAL FLOOD INSURANCE PROGRAM (NFIP) SURVEY

MUNICIPALITY: Town of Rumney

1. FLOODPLAIN IDENTIFICATION AND MAPPING			
Requirement	Recommended Action	Yes/No	Comments
a. Does the municipality maintain accessible copies of an effective Flood Insurance Rate Map (FIRM)/Digital Flood Insurance Rate Map (DFIRM)? Does the municipality maintain accessible copies of the most recent Flood Insurance Study (FIS)?	Place these documents in the local libraries or make available publicly.	No	
b. Has the municipality adopted the most current DFIRM/FIRM and FIS?	State the date of adoption, if approved.	No	
c. Does the municipality support request for map updates?	If yes, state how.	No	
d. Does the municipality share with Federal Emergency Management Agency (FEMA) any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data?	If yes, specify how.	No	
e. Does the municipality provide assistance with local floodplain determinations?	If yes, specify how.	No	
f. Does the municipality maintain a record of approved Letters of Map Change?	If yes, specify the responsible office.	No	

2. FLOODPLAIN MANAGEMENT

Requirement	Recommended Action	Yes/No	Comments
a. Has the municipality adopted a compliant floodplain management ordinance that, at a minimum, regulates the following:	If yes, answer questions (1) through (4) below.	NO	
(1) Does the municipality issue permits for all proposed development in the Special Flood Hazard Areas (SFHAs)?	If yes, specify the office responsible.	Yes	Town of Remney Zoning Officer
(2) Does the municipality obtain, review, and utilize any Base Flood Elevation (BFE) and floodway data, and/or require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres?	If yes, specify the office responsible.	No	
(3) Does the municipality identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the BFE, including anchoring, using flood-resistant materials, and designing or locating utilities and service facilities to prevent water damage?	If yes, specify the office responsible.	Yes	Town of Remney Zoning Officer
(4) Does the municipality document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures?	If yes, specify the office responsible.	Yes	Town of Remney Zoning Officer
b. If a compliant floodplain ordinance was adopted, does the municipality enforce the ordinance by monitoring compliance and taking remedial action to correct violations?	If yes, specify how.	Yes	Require Permits for New Construction

2. FLOODPLAIN MANAGEMENT			
Requirement	Recommended Action	Yes/No	Comments
c. Has the municipality considered adopting activities that extend beyond the minimum requirements? Examples include: <ul style="list-style-type: none"> <li>• Participation in the Community Rating System</li> <li>• Prohibition of production or storage of chemicals in SFHA</li> <li>• Prohibition of certain types of structures, such as hospitals, nursing homes, and jails in SFHA</li> <li>• Prohibition of certain types of residential housing (manufactured homes) in SFHA</li> <li>• Floodplain ordinances that prohibit any new residential or nonresidential structures in SFHA</li> </ul>	If yes, specify activities.	No	

3. FLOOD INSURANCE			
Requirement	Recommended Action	Yes/No	Comments
a. Does the municipality educate community members about the availability and value of flood insurance?	If yes, specify how.	No	
b. Does the municipality inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates?	If yes, specify how.	No	
c. Does the municipality provide general assistance to community members regarding insurance issues?	If yes, specify how.	No	

Our municipality is in need of education Regarding NFIP. We would appreciate someone visiting our Town Office to instruct us as to the best way to develop a Flood Insurance Program.

## **National Flood Insurance Program (NFIP) Survey**

**Jurisdiction: Town of Capon Bridge**

**1a.** Does the municipality maintain accessible copies of an effective Flood Insurance Rate Map (FIRM)/Digital Flood Insurance Rate Map (DFIRM)? Does the municipality maintain accessible copies of the most recent Flood Insurance Study (FIS)?

Yes-Available at the Hampshire County Planning Office & the Hampshire County Library

**1b.** Has the municipality adopted the most current DFIRM/FIRM and FIS?

Yes--November 7, 2002

**1c.** Does the municipality support request for map updates?

Yes-GIS Layers and any new studies are presented.

**1d.** Does the municipality share with Federal Emergency Management Agency (FEMA) any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data?

Yes-The Planning Office would share any scientific data via the Regional Office of FEMA and the WV State Office of Emergency Management FEMA Representatives.

**1e.** Does the municipality provide assistance with local floodplain determinations?

Yes--The Planning Office will review all forms and give guidance where needed. The Planning Office also uses Hampshire County GIS and the WV Flood Tool.

**1f.** Does the municipality maintain a record of approved Letters of Map Change?

Yes--The Planning Office

**2a.** Has the municipality adopted a compliant floodplain management ordinance that , at a minimum, regulates the following: Yes-See Below

**1.** Does the municipality issue permits for all proposed development in the Special Flood Hazard Areas (SFHAs)?

Yes--The Hampshire County Planning Office

**2.** Does the municipality obtain, review, and utilize any Base Flood Elevation (BFE) and floodway data, and/or require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres?

Yes--The Hampshire County Planning Office

**3.** Does the municipality identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the BFE, including anchoring, using flood-resistant materials, and designing or locating utilities and service facilities to prevent water damage?

Yes--The Hampshire County Planning Office

**4.** Does the municipality document and maintain records of elevation data that document lowest floor elevation for a new or substantially improved structures?

Yes--The Hampshire County Planning Office

**2b.** If a compliant floodplain ordinance was adopted, does the municipality enforce the ordinance by monitoring compliance and taking remedial action to correct violations?

Yes--Building permits are required. Stop Work orders are issued for those who do not obtain a building permit. Floodplain inspections are completed for any work done in a floodplain. Fees and penalties are assessed when someone fails to comply.

<b>2. FLOODPLAIN MANAGEMENT</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Has the municipality adopted a compliant floodplain management ordinance that, at a minimum, regulates the following:	If yes, answer questions (1) through (4) below.	Yes	
(1) Does the municipality issue permits for all proposed development in the Special Flood Hazard Areas (SFHAs)?	If yes, specify the office responsible.	Yes	The Town Office issues permits.
(2) Does the municipality obtain, review, and utilize any Base Flood Elevation (BFE) and floodway data, and/or require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres?	If yes, specify the office responsible.	Yes	The Town Floodplain manager is responsible for this.
(3) Does the municipality identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the BFE, including anchoring, using flood-resistant materials, and designing or locating utilities and service facilities to prevent water damage?	If yes, specify the office responsible.	Yes	The Floodplain manager oversees all construction.
(4) Does the municipality document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures?	If yes, specify the office responsible.	Yes	The Town Office maintains these records.
b. If a compliant floodplain ordinance was adopted, does the municipality enforce the ordinance by monitoring compliance and taking remedial action to correct violations?	If yes, specify how.	Yes	Any and all violations would be addressed by the Town Council.

<b>2. FLOODPLAIN MANAGEMENT</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
<p>c. Has the municipality considered adopting activities that extend beyond the minimum requirements? Examples include:</p> <ul style="list-style-type: none"> <li>• Participation in the Community Rating System</li> <li>• Prohibition of production or storage of chemicals in SFHA</li> <li>• Prohibition of certain types of structures, such as hospitals, nursing homes, and jails in SFHA</li> <li>• Prohibition of certain types of residential housing (manufactured homes) in SFHA</li> <li>• Floodplain ordinances that prohibit any new residential or nonresidential structures in SFHA</li> </ul>	If yes, specify activities.	Yes	The Town Council has discussed these plans, and the floodplain manager has worked with them on these endeavors. The Town however is very small and has had no significant construction in many years.

<b>3. FLOOD INSURANCE</b>			
<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Does the municipality educate community members about the availability and value of flood insurance?	If yes, specify how.	Yes	This topic is discussed in public Council meetings.
b. Does the municipality inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates?	If yes, specify how.	Yes	Any changes are made public.
c. Does the municipality provide general assistance to community members regarding insurance issues?	If yes, specify how.	Yes	Any insurance issues that arise are discussed with the property owners that may be affected.

NATIONAL FLOOD INSURANCE PROGRAM (NFIP) SURVEY

MUNICIPALITY: Town of Wardsville

1. FLOODPLAIN IDENTIFICATION AND MAPPING			
Requirement	Recommended Action	Yes/No	Comments
a. Does the municipality maintain accessible copies of an effective Flood Insurance Rate Map (FIRM)/Digital Flood Insurance Rate Map (DFIRM)? Does the municipality maintain accessible copies of the most recent Flood Insurance Study (FIS)?	Place these documents in the local libraries or make available publicly.	No	
b. Has the municipality adopted the most current DFIRM/FIRM and FIS?	State the date of adoption, if approved.	No	
c. Does the municipality support request for map updates?	If yes, state how.	No	
d. Does the municipality share with Federal Emergency Management Agency (FEMA) any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data?	If yes, specify how.	No	
e. Does the municipality provide assistance with local floodplain determinations?	If yes, specify how.	No	
f. Does the municipality maintain a record of approved Letters of Map Change?	If yes, specify the responsible office.	No	



2. FLOODPLAIN MANAGEMENT			
Requirement	Recommended Action	Yes/No	Comments
a. Has the municipality adopted a compliant floodplain management ordinance that, at a minimum, regulates the following:	If yes, answer questions (1) through (4) below.	No	
(1) Does the municipality issue permits for all proposed development in the Special Flood Hazard Areas (SFHAs)?	If yes, specify the office responsible.		
(2) Does the municipality obtain, review, and utilize any Base Flood Elevation (BFE) and floodway data, and/or require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres?	If yes, specify the office responsible.		
(3) Does the municipality identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the BFE, including anchoring, using flood-resistant materials, and designing or locating utilities and service facilities to prevent water damage?	If yes, specify the office responsible.		
(4) Does the municipality document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures?	If yes, specify the office responsible.		
b. If a compliant floodplain ordinance was adopted, does the municipality enforce the ordinance by monitoring compliance and taking remedial action to correct violations?	If yes, specify how.	No	

**2. FLOODPLAIN MANAGEMENT**

<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
c. Has the municipality considered adopting activities that extend beyond the minimum requirements? Examples include: <ul style="list-style-type: none"> <li>• Participation in the Community Rating System</li> <li>• Prohibition of production or storage of chemicals in SFHA</li> <li>• Prohibition of certain types of structures, such as hospitals, nursing homes, and jails in SFHA</li> <li>• Prohibition of certain types of residential housing (manufactured homes) in SFHA</li> <li>• Floodplain ordinances that prohibit any new residential or nonresidential structures in SFHA</li> </ul>	If yes, specify activities.	No	

**3. FLOOD INSURANCE**

<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Does the municipality educate community members about the availability and value of flood insurance?	If yes, specify how.	No	
b. Does the municipality inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates?	If yes, specify how.	No	
c. Does the municipality provide general assistance to community members regarding insurance issues?	If yes, specify how.	No	



**Mineral County 911**  
@mineralcounty911

Home

About

Photos

Reviews

Videos

Posts

Community

Events

Jobs

Promote

Manage Promotions

Like Following Share ...

See All

### Posts



**Mineral County 911**

Published by Luke McKenzie [?] · August 30 at 2:01pm · 🌐

The Mineral County Office of Emergency Management and 911 is working with Region 8 Planning and Development Council to update its Hazard Mitigation Plan and looking ahead to increase resilience in the face of disasters. Help us by taking this short survey: <https://www.surveymonkey.com/r/Region8HMP>.

### Region 8 Planning & Development Council Hazard Mitigation Survey

Web survey powered by SurveyMonkey.com. Create your own online survey now with SurveyMonkey's expert certified FREE templates.

SURVEYMONKEY.COM

461 people reached

Boost Post

Like Comment Share



Billy Murphy and Jessica Paugh Pancake



Write a comment...



Press Enter to post.



Hampshire County  
Homeland Security  
& Emergency Mgmt  
- WV

Home

About

Photos

Reviews

Events

Videos

Posts

Community

Like Follow Share ...

14 Shares



Write a comment...



Hampshire County Homeland Security & Emergency  
Mgmt - WV



September 13 · 🌟

09/13/2017:

Anonymous Public Input requested:

The Region 8 Planning and Development Council, and Hampshire County are in the process of updating its Hazard Mitigation Plan and looking ahead to increase resilience in the face of disasters. Help us by taking this short survey:

<https://www.surveymonkey.com/r/Region8HMP>.

### Region 8 Planning & Development Council Hazard Mitigation Survey

Web survey powered by SurveyMonkey.com. Create your own online survey now with SurveyMonkey's expert certified FREE templates.

SURVEYMONKEY.COM

Like Comment Share

1 Share



Town of  
Franklin/Franklin  
Pool & Park  
@townfranklinwv

Home

About

Photos

Reviews

Videos

Posts

Community

Promote

Liked Following Share ...

Reach People Close By



You could reach up to 85,000 people on Facebook who are within 30 miles of your business location.

Promote Local Business

Ho



Town of Franklin/Franklin Pool & Park

Published by Frank Wehrle [?] · Just now ·

The Town of Franklin is currently participating in the Hazard Mitigation Plan update. This plan helps the Town and its citizens know what to do if and when catastrophic events occur. The Town is asking the public to participate by taking a few minutes and doing a survey. This will help the Town to know what the public needs are. Please click on the link below to participate in the survey. Thanks!

<https://www.surveymonkey.com/r/Region8HMP>

### Region 8 Planning & Development Council Hazard Mitigation Survey

Web survey powered by SurveyMonkey.com. Create your own online survey now with SurveyMonkey's expert certified FREE templates.

SURVEYMONKEY.COM

# Region 8 Planning and Development Council



[Home](#)

[About Us](#)

[Calendar](#)

[Programs](#)

[Staff Directory](#)

[Documents](#)

[Public Review Documents](#)

[Other Resources](#)

[Employment Opportunities](#)

[Project Opportunities](#)

[Hazard Mitigation Survey](#)

[Loan Pool Brochures](#)

[Energy Efficiency & Community Block Grant Program](#)

## MISSION STATEMENT

It is the mission of the Region 8 Planning and Development Council to obtain the maximum level of economic and community development in the Potomac Highlands of West Virginia through development, planning and by assisting local governments and businesses implement projects and programs.

## ECONOMIC DEVELOPMENT

The Region 8 Planning and Development Council offers a number of economic development tools to local businesses and member governments. The Council has two loan programs that assist businesses with expansion, retention or businesses that are just starting up. The Council's loan programs, the Revolving Loan program and the Small Business Development Loan program can be combined with state and conventional lending sources to create attractive financial packages. The Council also works with local governments and development authorities to expand and improve water/sewer systems, industrial parks and other infrastructure needed to keep businesses competitive.

## COMMUNITY DEVELOPMENT

The Region 8 Planning and Development Council provides support to local governments in the area of community development. The Council provides financial packaging and administration for infrastructure projects such as water/sewer, community planning, parks and street repair. If you would like more information on community development contact Region 8 at 304-257-2448.

Click [HERE](#) to find us on Facebook

# THE PENDLETON TIMES

Serving the Community since 1913

75¢  
Volume 104, Number 44

Franklin, Pendleton County, West Virginia 26807

Thursday  
November 2, 2017

## COMMUNITY calendar

### Veterans dinner set for Saturday

A veterans recognition dinner, sponsored by the Spruce Mountain Ruritan Club, will be held at 1 p.m. Saturday at the Clinton Hedrick Community Building, Riverton. The dinner is free to all Pendleton County veterans.

### EWVCA to offer holiday assistance

Eastern West Virginia Community Action will be taking applications for Christmas assistance during the month of November.

Due to limited resources, first priority will be given to families with children who are younger than school age.

To apply, please contact Edna Mullenax at 304-358-7589 or visit the office on Painters Point in Franklin.

### Library friends to meet Tuesday

Friends of the Library will meet at 4 p.m. Tuesday in the community room at Pendleton County Library, Franklin.

### Meeting scheduled to discuss ways to prevent ACEs

Childhood experiences, both positive and negative, have a tremendous impact on future violence victimization and perpetration and lifelong health and opportunity. As such, early experiences are an important public health issue. Much of the foundational research in this area has been referred to as Adverse Childhood Experiences. ACEs can be prevented.

Jennifer Taylor-Ide will present information about preventing ACEs at a Pendleton County Family Resource Council public meeting. The meeting will be held at noon Friday at the Community Action Office on Painters Point in Franklin. Lunch will be provided.

For more information, please contact Edna Mullenax at 304-358-7589.

### Free activities available to local senior citizens

Pendleton Senior and Family Services offers free monthly services to the county's senior citizens. Seniors are advised to clip and save the following list of programs.

- Tai Chi class, 11 a.m. Monday, Wednesday and Friday, Franklin;
- VA rep Carol Hefner, 10 a.m. - noon second Wednesday of each month, Franklin;
- Blood pressure check, 11 a.m. every second Thursday, Franklin, and every fourth Thursday, North Fork;
- Bingo, 10:30 a.m. every Friday, Franklin and North Fork;
- Computer classes (by appointment only) 9 - 11 a.m. Tuesday, North Fork, and Thursday, Franklin;
- Hearing tests (by appointment only) first and third Fridays, Franklin; and
- Monthly craft classes, contact the centers for dates.

For questions or more information, please call the senior center at 304-358-2421.



# NA group continues to meet



President Donald Trump declared the opioid epidemic a national public health emergency during a speech Oct. 26.

By Shawn Stinson

FRANKLIN – President Donald Trump declared the opioid epidemic a public health emergency Oct. 26 during an event in the East Room of the White House.

“This epidemic is a national health emergency,” Trump said. “Nobody has seen anything like what is going on now. As Americans, we cannot allow this to continue. It is time to liberate our communities from this scourge of drug addiction.”

The president said 64,000 Americans died from overdoses last year – 175 a day, seven every hour.

“We can be the generation that ends the opioid epidemic,” he said. “We can do it.”

West Virginia Sen. Joe Manchin was one of the legislators in attendance during the president’s announcement.

“I applaud President Trump for finally taking these steps that will help in our fight against the opioid epidemic,” Manchin said in a release. “This public health crisis declaration will give states like West Virginia the flexibility to enlist help from federal agencies and resources to combat this epidemic. At the declaration announcement,

I was pleased to hear that Zohydro, a drug that I have been trying to get off the shelves since 2013, is being pulled from the market. Because of this painkiller’s high potential for misuse and abuse, Zohydro poses a severely dangerous threat to our communities in West Virginia and across our country and I’m glad this horrible decision by the FDA will finally be made right. I have long pushed for many of the actions that the President is taking, including expanding access to treatment options and educating our children on the risks associated with drugs, especially opioids, in order to make long-term improvements.”

Manchin also applauded the president for taking additional steps to combat the opioid problem.

“West Virginia faces unique challenges in the crisis, especially the rural areas in our state,” Manchin said. “The expansion of telemedicine to these areas is a game changer and will allow people struggling with substance use disorder the ability to receive opioid treatment prescriptions without seeing a doctor, which is a huge

(Continued on Page 7, Column 3)

# Students hear about watershed, pollution

By Shawn Stinson

FRANKLIN – Pam Waybright’s gifted student classes at Brandywine, Franklin and North Fork elementary schools had a visitor last week.

Connor Roessler, from the Cacapon Institute, addressed the students Oct. 26 about the Chesapeake Bay watershed and how the Potomac River plays a role in it. The following day the students took a field trip to the Experience Learning’s Spruce Knob Mountain Center.

The Cacapon Institute’s mission statement is “From the Cacapon to the Potomac to the Chesapeake Bay, we protect rivers and watersheds using science and education.”

Roessler worked with the students to discuss some of the pollutants that may get into a watershed. He also informed the students that there is nearly 64,000 square miles of the Chesapeake Bay watershed. There are six states – Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia as well as Washington, D.C. – that are part of the Chesapeake Bay watershed.

Roessler added that “all the water that leads into it and anything it carries with

it” will affect the watershed.

The students and Roessler discussed storm water runoff and items it might include with it. Among the items students said would be in the runoff were limbs, soil and trash.

Roessler told the students about two categories of water pollution – point source and nonpoint source.

He defined point source pollution as something that people know where it comes from and how much there is. Roessler used a factory as an example of a point source because officials know the pollutants that are discharged through a pipe or smokestack.

“It’s like having a light switch and we can turn it on and off,” he said. “We know much is coming out of there.”

Nonpoint source pollution, on the other hand, comes from several sources and officials aren’t able to track a pollutant to just one. Roessler told the students that exhaust from cars is a “type of air pollution just like a factory,” but is a nonpoint source because no one can determine the source of the pollution.

Reach Editor Shawn Stinson at 304-358-2304, editor@pendleontimes.com or follow him on Twitter @pendleontimes.



Connor Roessler displays a map of the Chesapeake Bay Watershed to students at Franklin Elementary School.

# Volunteers take veterans hunting Officials asking for public input

By Shawn Stinson

BRANDYWINE – At first glance it looks like a group of guys getting together for a hunt, but a closer look reveals so much more.

The group features veterans as well as volunteers from the Potomac Highlands Wounded Warrior Outreach. They gathered at the South Fork Ruritan Club building Oct. 19 for a meet and greet before heading out for a crossbow deer hunt over the weekend.

Larry Flinn, the group’s president, said this hunt, the capstone event for the year, is limited to as many as six wounded warriors because of the amount of supervision needed.

“There’s stands built for them, we escort them out to the stands and actually sit with them in the stands,” Flinn said. “We have guides with them to look after their needs, concerns and desires.”

Flinn added there is usually one volunteer assigned to a participant, but increases depending on the ability of the wounded warrior.

During the weekend, the wounded warriors were also invited by Kevin Bartley with Sugar Grove Trophy Trout Farm to fish at the facility. Bartley also invites the group to fish during other activities throughout the year including last month’s bear hunt.

“They will fish in the pond or

the stream or we have a little spring creek and they will fish in that,” Bartley said. “They can fish in the river if they like. We just let them fish wherever they like.”

“I think they caught 80 or 90 trout out of the pond during the bear hunt that I know of. I think six or seven fished and one guy caught 20 or so by himself.”

The deer hunt or fly fishing at different spots in the state aren’t the only activities planned by PHWWO throughout the year. Flinn said this is one of the easiest events to plan because of the limited number of wounded warriors.

“This one is the easy one because we limit the number of people,” Flinn said. “We start out with the turkey hunt in the spring and we go to four fly fishing events in other parts of the state and we come back here for the bear hunt. And we finish up with this.”

Both Bartley and Flinn credit Bill Armstrong for getting them involved in the PHWWO and continuing his legacy. Flinn said his involvement started in 2010 when the group was created by Armstrong, Carole Hartman, who serves as the secretary and treasurer, and others. Bartley came on board a year later and started taking wounded warriors deer, gobbler hunting and fishing on Roberta Pond.

Flinn estimates that nearly 500 wounded warriors have benefit-

ted from the activities organized by the PHWWO.

Flinn was brought to tears when he talked about the program and how it can mean so much more to the wounded warriors than just going hunting or fishing. He recalled several years when one veteran nearly didn’t participate, but he did and it changed his life.

“I have seen guys ready to put the pistol in their mouth and by the end of the weekend, they’re enjoying it,” Flinn said. “I had a guy out in Elk Springs three years ago. He almost didn’t come ... he was just cussing the hell out of the world. If you know that picture about the 1st Calvary Division in Vietnam “We Were Soldiers.” He was one of the guys in the battalion that lost 50 percent. Some of the guys we bring back three or four times because we see what it’s doing and they’ll finally say thank you.”

Flinn also wanted to thank his volunteers and the residents of Pendleton County for their assistance in making the wounded warriors feel welcomed. Flinn said the guides and their dogs did all they could during the recent bear hunt to make sure it is successful.

“They are bound and determined that everybody will leave with a bear,” Flinn said. “We had 11 hunters and 10 bears. Out of all the counties in the state this place really opens up its heart and wallet to wounded warriors.”

# Officials asking for public input

By Shawn Stinson

FRANKLIN – Region 8 officials are seeking input from residents in the form of an online survey.

The survey, produced by JH Consulting, based in Buckhannon, is asking for public involvement in the Region 8 Hazard Mitigation Plan. The plan can be found at <https://www.surveymonkey.com/r/Region8HMP>.

Region 8 includes Grant, Hampshire, Hardy, Mineral and Pendleton counties.

Survey participants are asked questions concerning natural and man-made hazards such as flooding, severe weather and terrorist (foreign and domestic). The survey also includes questions about how well a community responds to a hazard.

Other questions center on information regarding the participant’s residence. It asks if the participant carries flood, sewer backup, flood plain, homeowner’s or renter’s insurance on their dwelling. In addition, the survey asks if there have been repairs or upgrades to a residence to reduce mitigation.

Amy Heimberger, an emergency preparedness planner with JH Consulting, said a new hazard mitigation plan must be developed every five years and submitted to Federal Emergency Management Agency for approval.

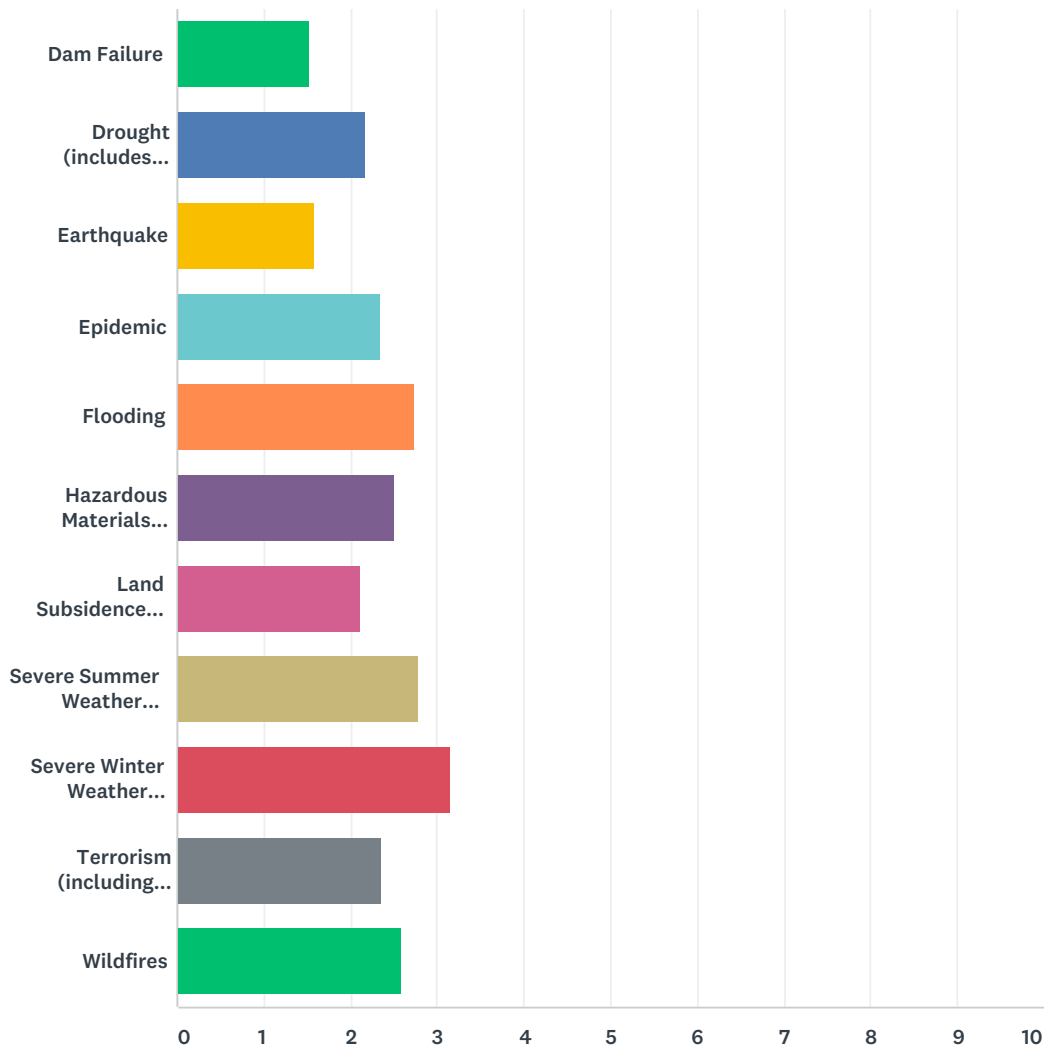
“The survey has been open for a couple of months,” Heimberger said. “It will probably still be open for a couple more months.”

The information garnered from the survey assists in identifying risks and vulnerabilities associated with natural and man-made disasters. In addition, officials will be able to use the information to develop long-term strategies for protecting people and property from future events.

Reach Editor Shawn Stinson at 304-358-2304, editor@pendleontimes.com or follow him on Twitter @pendleontimes.

## Q1 Please indicate how concerned you are about the following hazards, specifically where you live.

Answered: 58 Skipped: 0



	NOT AT ALL CONCERNED	SOMEWHAT CONCERNED	CONCERNED	VERY CONCERNED	TOTAL	WEIGHTED AVERAGE
Dam Failure	62.50% 35	23.21% 13	14.29% 8	0.00% 0	56	1.52
Drought (includes convention drought and water interruptions due to chemical spills, etc.)	19.30% 11	47.37% 27	29.82% 17	3.51% 2	57	2.18
Earthquake	46.55% 27	48.28% 28	5.17% 3	0.00% 0	58	1.59
Epidemic	15.52% 9	44.83% 26	29.31% 17	10.34% 6	58	2.34
Flooding	5.17% 3	36.21% 21	37.93% 22	20.69% 12	58	2.74

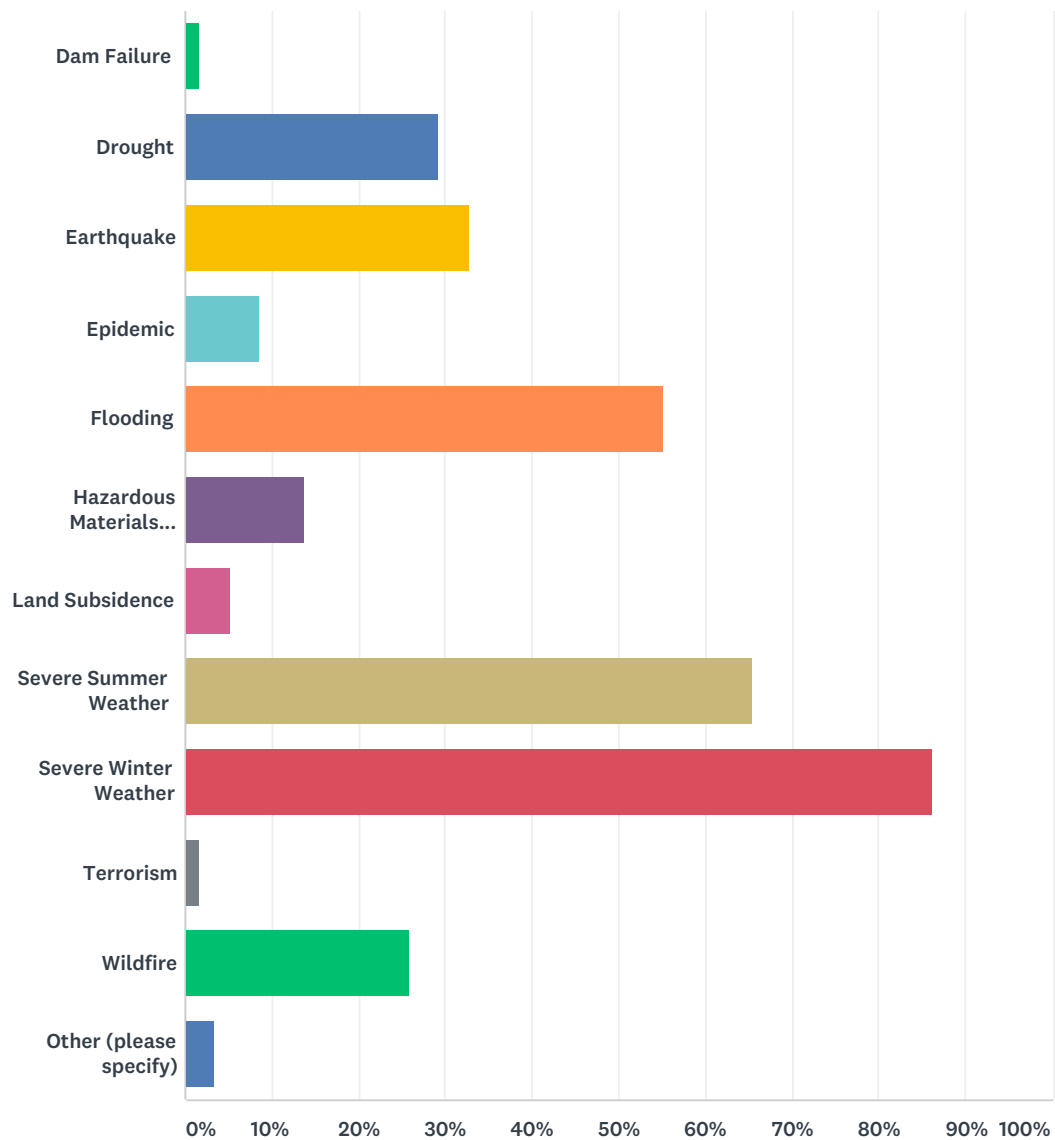


## Region 8 Planning & Development Council Hazard Mitigation Survey

Hazardous Materials Incidents	14.04% 8	31.58% 18	43.86% 25	10.53% 6	57	2.51
Land Subsidence (includes landslides, rock slides, mud flows, sink holes, etc.)	20.69% 12	50.00% 29	25.86% 15	3.45% 2	58	2.12
Severe Summer Weather (includes tornadoes, lightning, hurricanes, thunderstorms, hail, etc.)	5.17% 3	31.03% 18	44.83% 26	18.97% 11	58	2.78
Severe Winter Weather (includes ice storms, blizzards, heavy snow, etc.)	1.72% 1	13.79% 8	51.72% 30	32.76% 19	58	3.16
Terrorism (including foreign and domestic)	17.24% 10	39.66% 23	32.76% 19	10.34% 6	58	2.36
Wildfires	8.62% 5	37.93% 22	37.93% 22	15.52% 9	58	2.60

## Q2 In the past 10 years, which hazards do you recall having occurred in your community? (Check all that apply)

Answered: 58 Skipped: 0



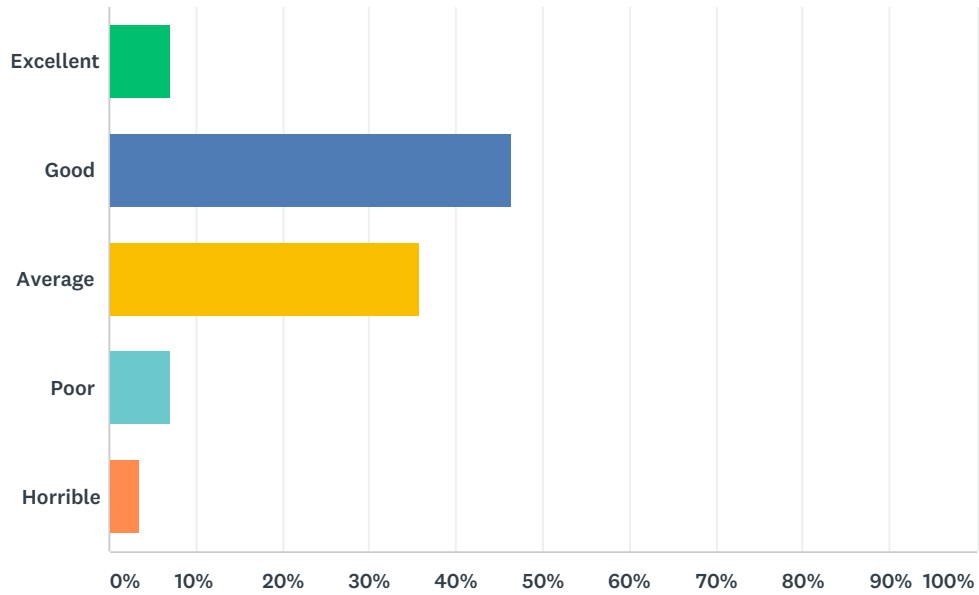
ANSWER CHOICES	RESPONSES	
Dam Failure	1.72%	1
Drought	29.31%	17
Earthquake	32.76%	19
Epidemic	8.62%	5
Flooding	55.17%	32
Hazardous Materials Incident (transportation or facility)	13.79%	8
Land Subsidence	5.17%	3

## Region 8 Planning & Development Council Hazard Mitigation Survey

Severe Summer Weather	65.52%	38
Severe Winter Weather	86.21%	50
Terrorism	1.72%	1
Wildfire	25.86%	15
Other (please specify)	3.45%	2
Total Respondents: 58		

Q3 Think back to a recent hazard occurrence (any from questions 1 or 2.)  
How would you rate your community's ability to handle the hazard event?

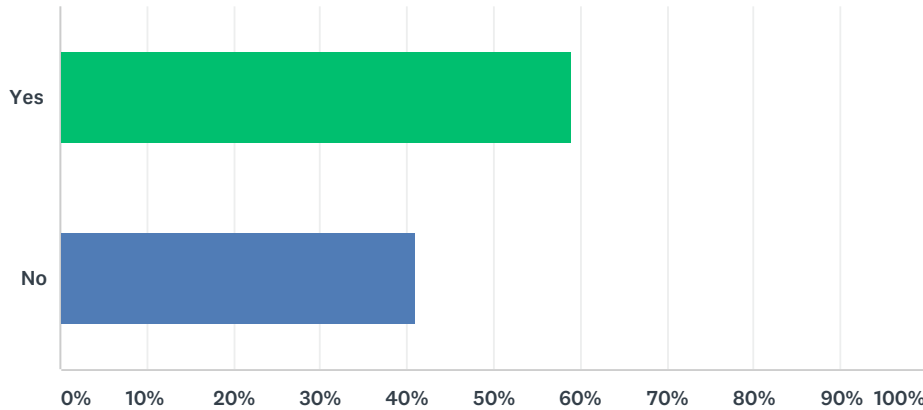
Answered: 56 Skipped: 2



ANSWER CHOICES	RESPONSES	
Excellent	7.14%	4
Good	46.43%	26
Average	35.71%	20
Poor	7.14%	4
Horrible	3.57%	2
TOTAL		56

**Q4 During this event did you receive information or warnings from local media (TV, Radio, Text) or social media (Facebook/Twitter) that was either from or forwarded from your local public officials / emergency management officials?**

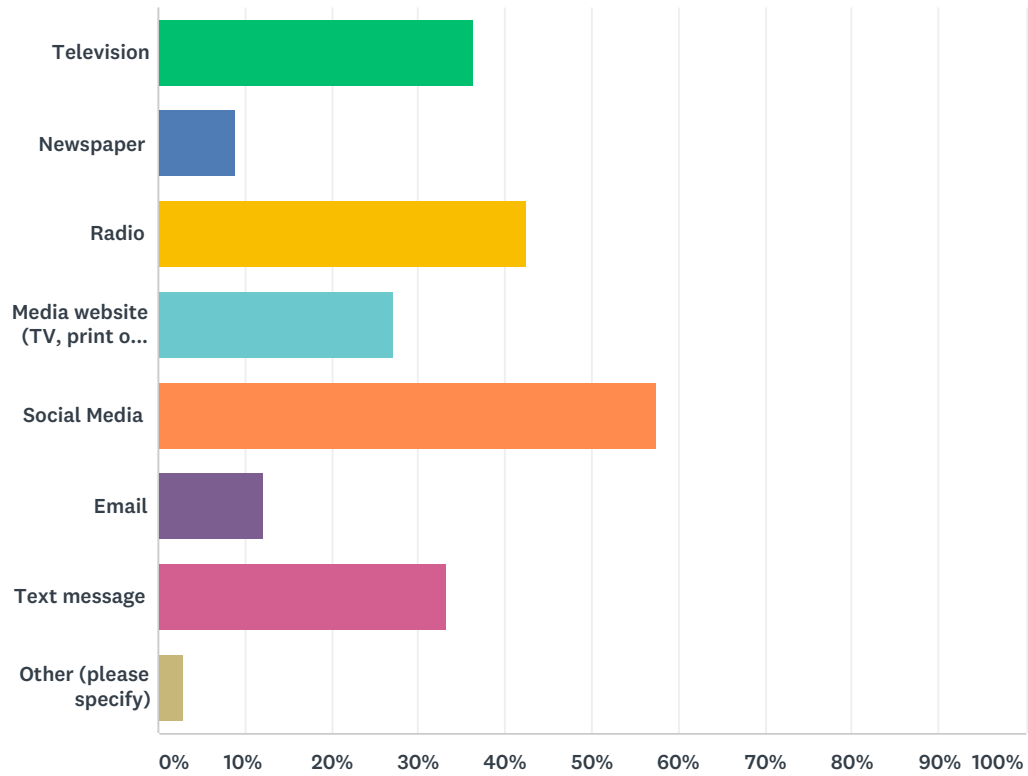
Answered: 56 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	58.93%	33
No	41.07%	23
TOTAL		56

## Q5 How did you receive this information?

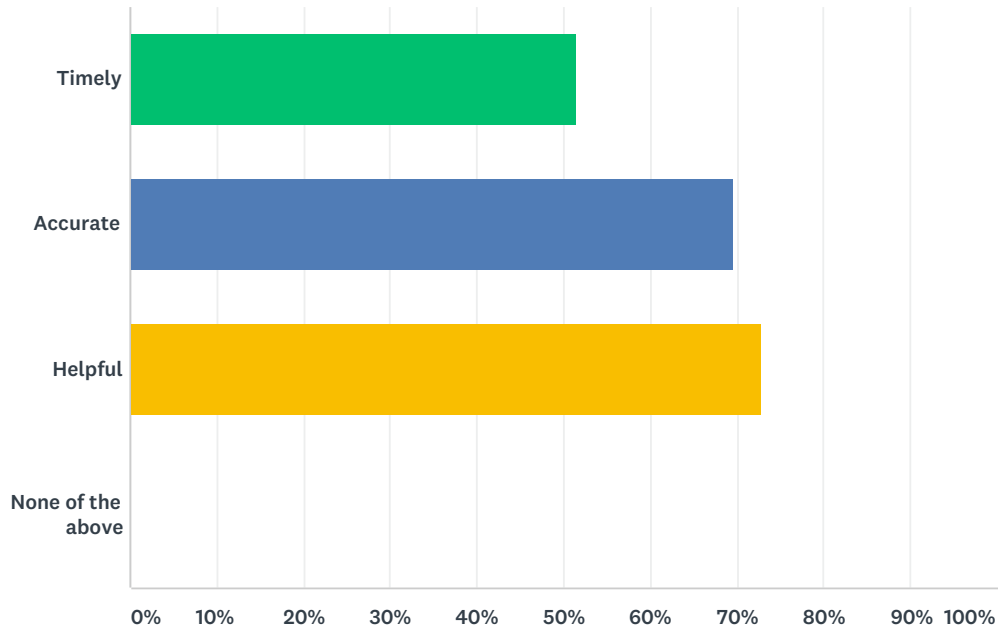
Answered: 33 Skipped: 25



ANSWER CHOICES	RESPONSES	
Television	36.36%	12
Newspaper	9.09%	3
Radio	42.42%	14
Media website (TV, print or radio)	27.27%	9
Social Media	57.58%	19
Email	12.12%	4
Text message	33.33%	11
Other (please specify)	3.03%	1
Total Respondents: 33		

### Q6 Was this information timely, accurate and helpful? (choose as many as apply)

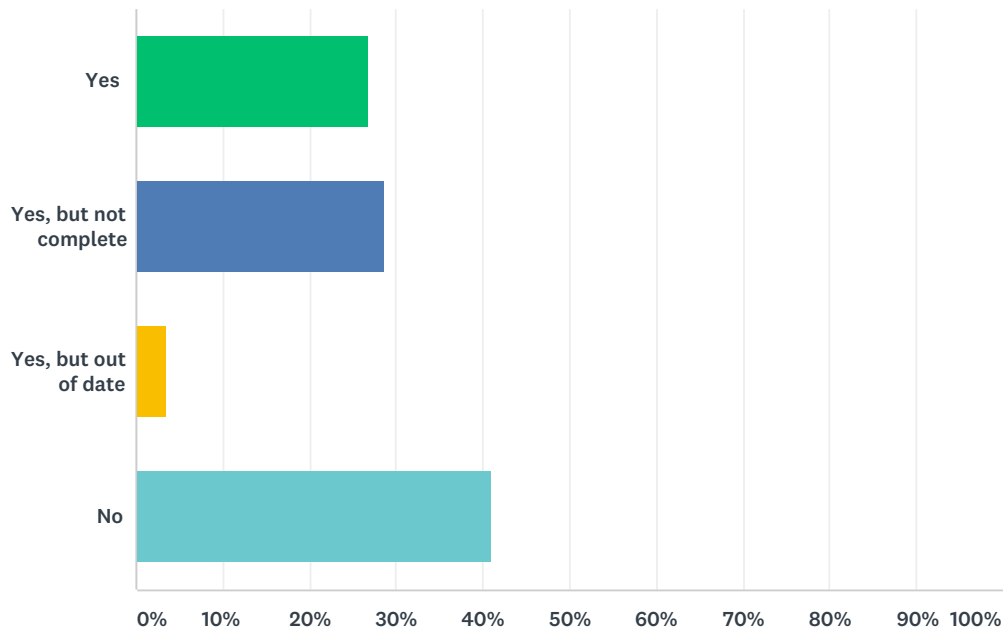
Answered: 33 Skipped: 25



ANSWER CHOICES	RESPONSES	
Timely	51.52%	17
Accurate	69.70%	23
Helpful	72.73%	24
None of the above	0.00%	0
Total Respondents: 33		

### Q7 Do you / does your household have a 72-hour kit? (<http://www.ready.gov/build-a-kit> )

Answered: 56 Skipped: 2

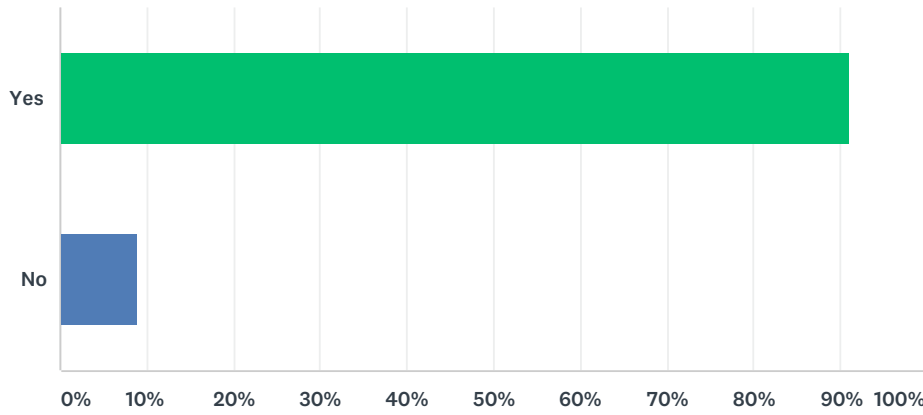


ANSWER CHOICES	RESPONSES	
Yes	26.79%	15
Yes, but not complete	28.57%	16
Yes, but out of date	3.57%	2
No	41.07%	23
<b>TOTAL</b>		<b>56</b>



## Q8 Do you have homeowners/renters insurance?

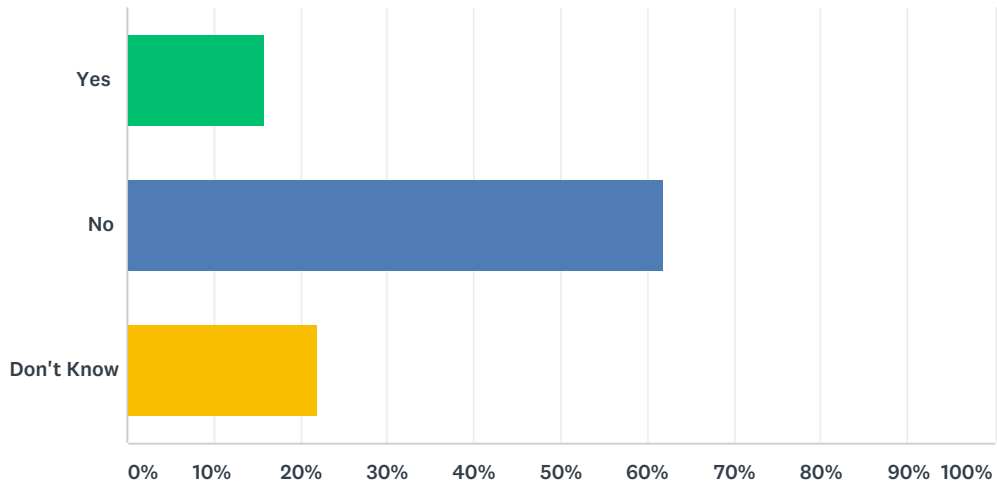
Answered: 56 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	91.07%	51
No	8.93%	5
TOTAL		56

### Q9 Does your homeowner/renters insurance include flood insurance?

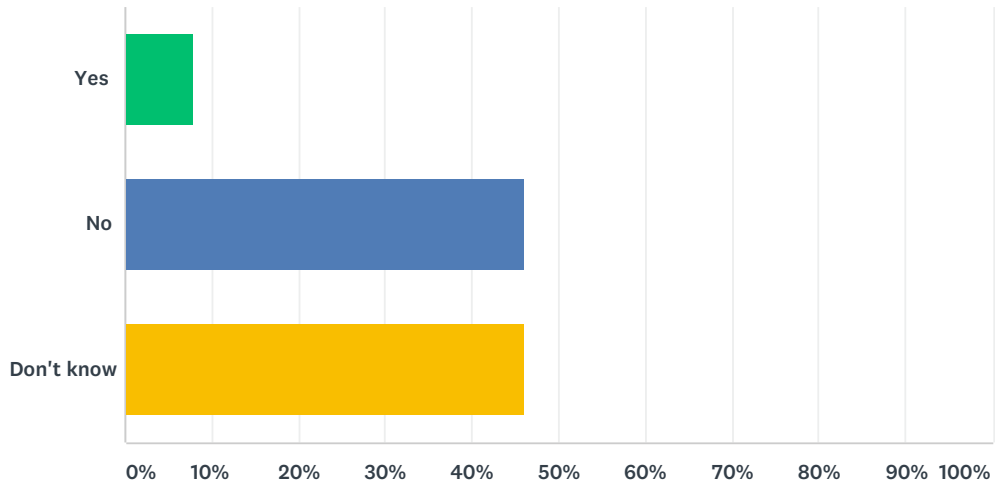
Answered: 50 Skipped: 8



ANSWER CHOICES	RESPONSES	
Yes	16.00%	8
No	62.00%	31
Don't Know	22.00%	11
<b>TOTAL</b>		<b>50</b>

### Q10 Does your policy include sewer back up insurance (or have a sewer back up policy rider)?

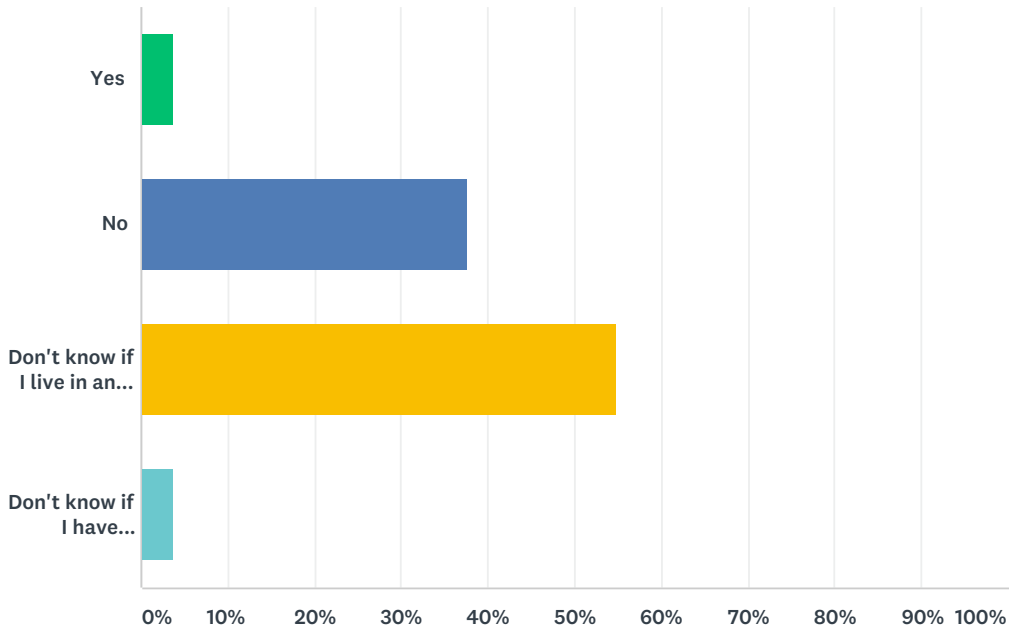
Answered: 50 Skipped: 8



ANSWER CHOICES	RESPONSES	
Yes	8.00%	4
No	46.00%	23
Don't know	46.00%	23
<b>TOTAL</b>		<b>50</b>

### Q11 If you live in a Special Flood Hazard Area (SFHA), do you have floodplain insurance?

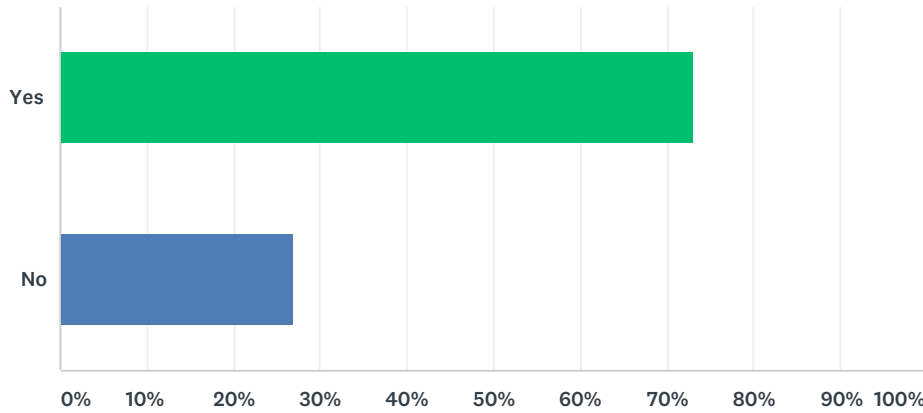
Answered: 53 Skipped: 5



ANSWER CHOICES	RESPONSES	
Yes	3.77%	2
No	37.74%	20
Don't know if I live in an SFHA	54.72%	29
Don't know if I have floodplain insurance	3.77%	2
<b>TOTAL</b>		<b>53</b>

## Q12 Are you willing to spend your money on mitigation activities for your home?

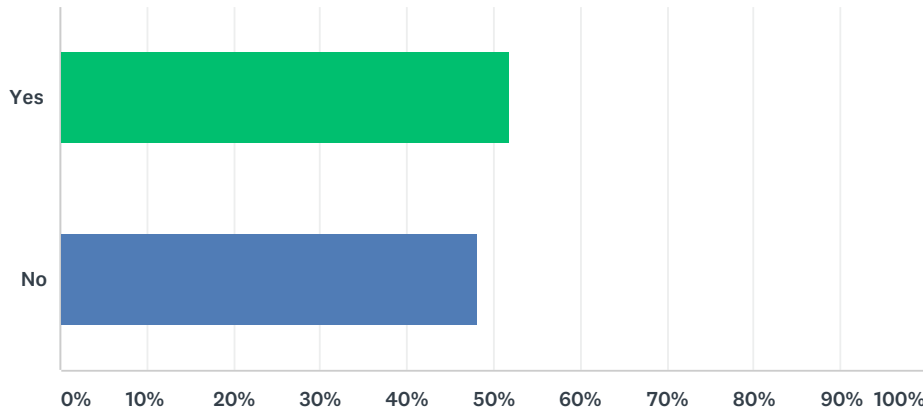
Answered: 52 Skipped: 6



ANSWER CHOICES	RESPONSES	
Yes	73.08%	38
No	26.92%	14
TOTAL		52

### Q13 Have you performed any improvements to your home to reduce your risk from a hazard?

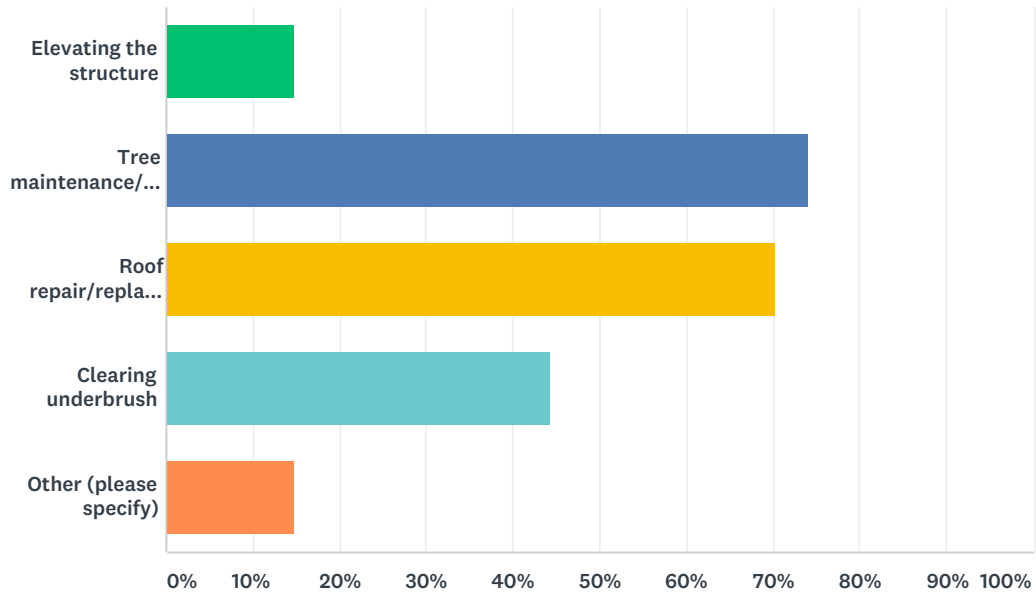
Answered: 52 Skipped: 6



ANSWER CHOICES	RESPONSES	
Yes	51.92%	27
No	48.08%	25
TOTAL		52

### Q14 Please indicate what improvements you have made:

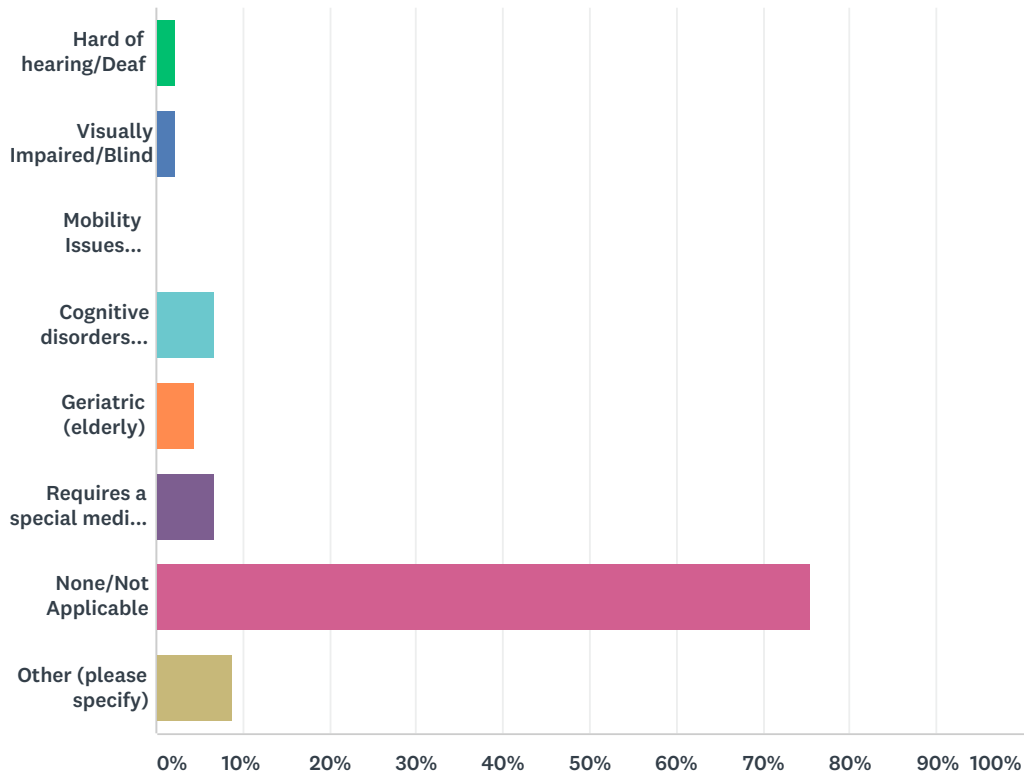
Answered: 27 Skipped: 31



ANSWER CHOICES	RESPONSES
Elevating the structure	14.81% 4
Tree maintenance/removal	74.07% 20
Roof repair/replacement	70.37% 19
Clearing underbrush	44.44% 12
Other (please specify)	14.81% 4
Total Respondents: 27	

### Q15 Do you, or someone who resides in your residence, have a special need that emergency service providers should be aware of in an emergency? (Please pick all the apply)

Answered: 45 Skipped: 13

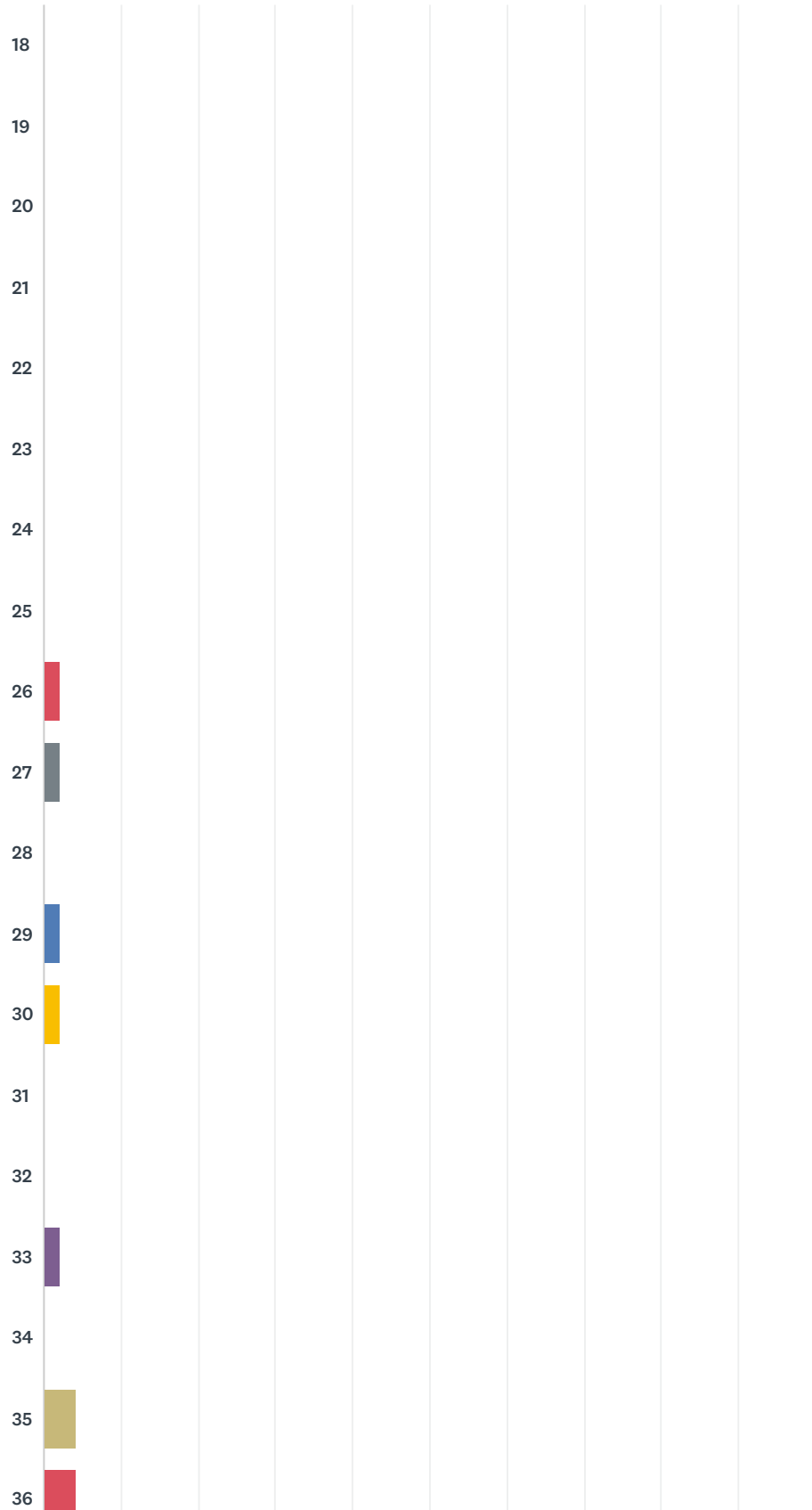


ANSWER CHOICES	RESPONSES	
Hard of hearing/Deaf	2.22%	1
Visually Impaired/Blind	2.22%	1
Mobility Issues (non-ambulatory, confined to a wheelchair, requires the use of a cane or walker)	0.00%	0
Cognitive disorders (includes autism, depression, etc.)	6.67%	3
Geriatric (elderly)	4.44%	2
Requires a special medical device (such as a Ventilator, CPAP machine, or drugs that require refrigeration [I.E. insulin])	6.67%	3
None/Not Applicable	75.56%	34
Other (please specify)	8.89%	4
Total Respondents: 45		

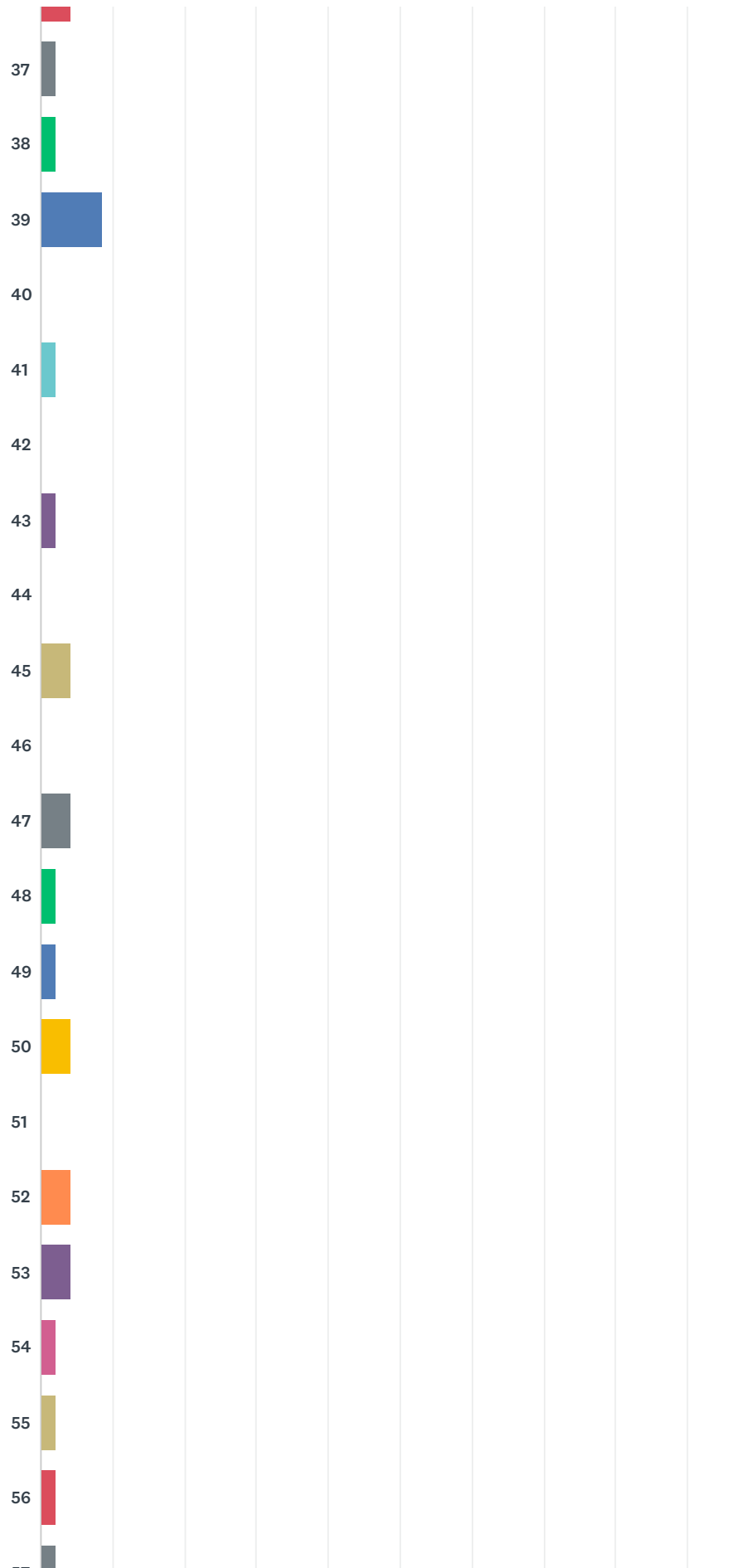


### Q16 Please provide your age

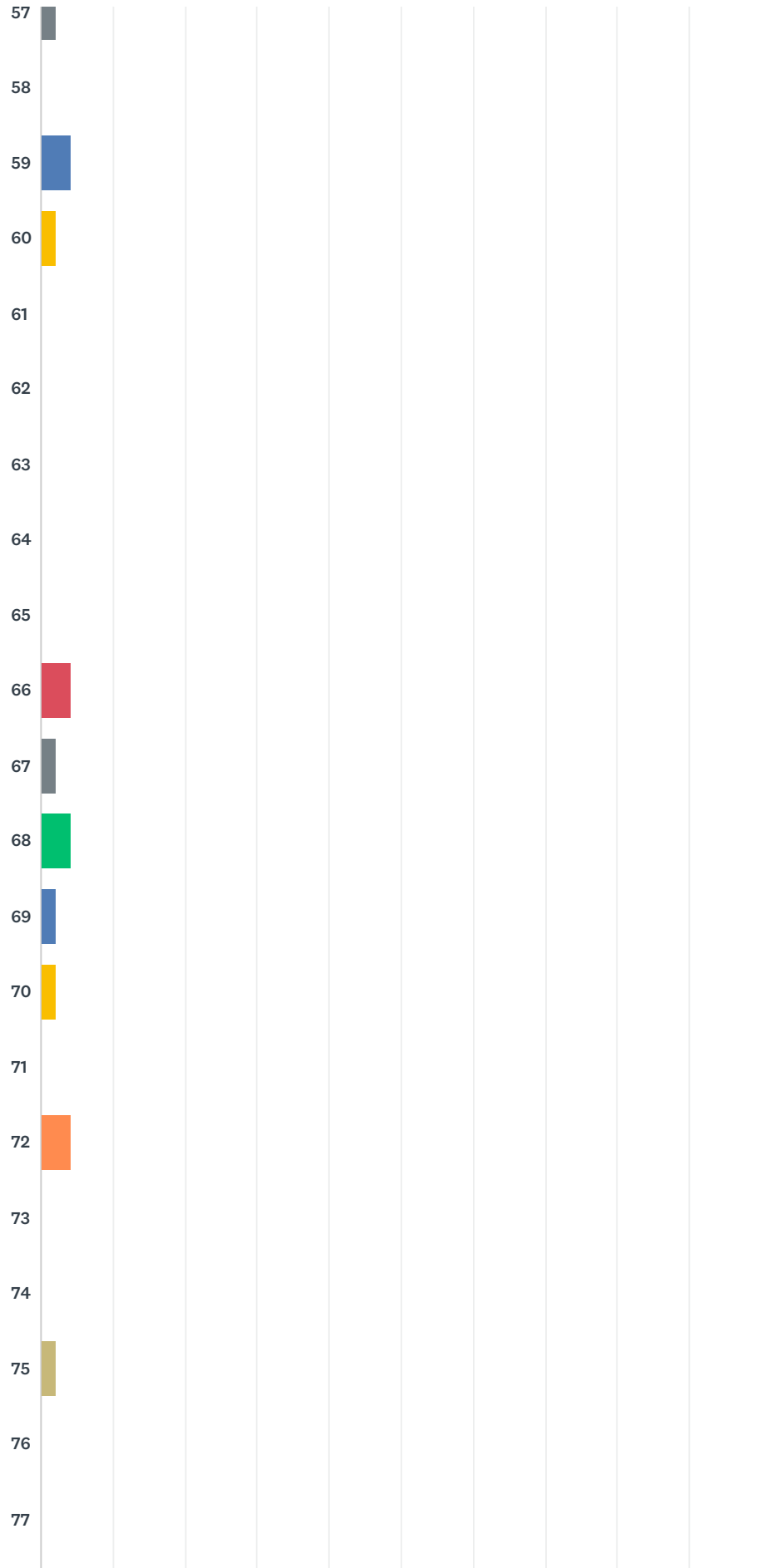
Answered: 47 Skipped: 11



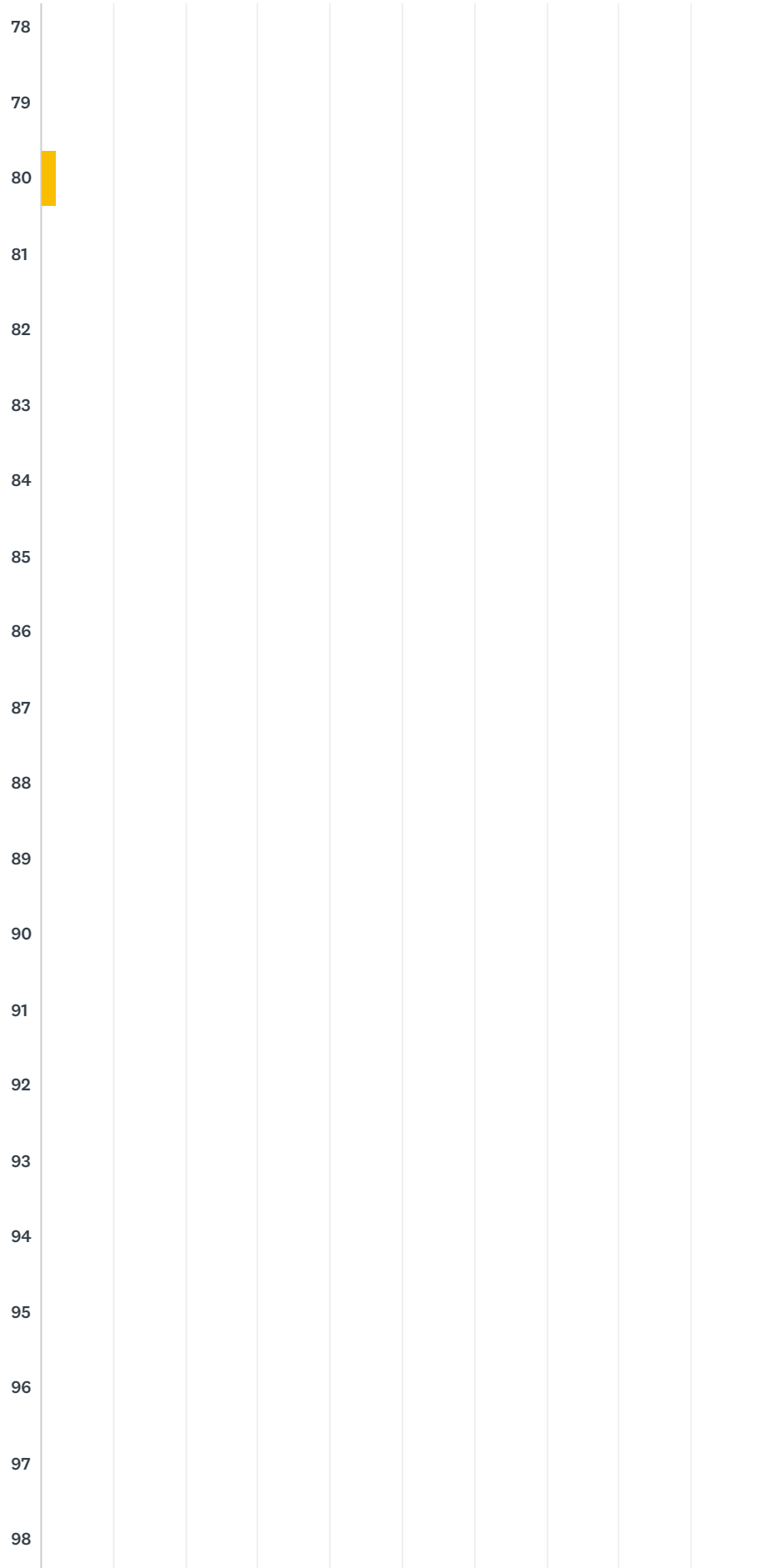
Region 8 Planning & Development Council Hazard Mitigation Survey



Region 8 Planning & Development Council Hazard Mitigation Survey



Region 8 Planning & Development Council Hazard Mitigation Survey



Region 8 Planning & Development Council Hazard Mitigation Survey



ANSWER CHOICES	RESPONSES	
18	0.00%	0
19	0.00%	0
20	0.00%	0
21	0.00%	0
22	0.00%	0
23	0.00%	0
24	0.00%	0
25	0.00%	0
26	2.13%	1
27	2.13%	1
28	0.00%	0

Region 8 Planning & Development Council Hazard Mitigation Survey

29	2.13%	1
30	2.13%	1
31	0.00%	0
32	0.00%	0
33	2.13%	1
34	0.00%	0
35	4.26%	2
36	4.26%	2
37	2.13%	1
38	2.13%	1
39	8.51%	4
40	0.00%	0
41	2.13%	1
42	0.00%	0
43	2.13%	1
44	0.00%	0
45	4.26%	2
46	0.00%	0
47	4.26%	2
48	2.13%	1
49	2.13%	1
50	4.26%	2
51	0.00%	0
52	4.26%	2
53	4.26%	2
54	2.13%	1
55	2.13%	1
56	2.13%	1
57	2.13%	1
58	0.00%	0
59	4.26%	2
60	2.13%	1
61	0.00%	0
62	0.00%	0
63	0.00%	0

Region 8 Planning & Development Council Hazard Mitigation Survey

64	0.00%	0
65	0.00%	0
66	4.26%	2
67	2.13%	1
68	4.26%	2
69	2.13%	1
70	2.13%	1
71	0.00%	0
72	4.26%	2
73	0.00%	0
74	0.00%	0
75	2.13%	1
76	0.00%	0
77	0.00%	0
78	0.00%	0
79	0.00%	0
80	2.13%	1
81	0.00%	0
82	0.00%	0
83	0.00%	0
84	0.00%	0
85	0.00%	0
86	0.00%	0
87	0.00%	0
88	0.00%	0
89	0.00%	0
90	0.00%	0
91	0.00%	0
92	0.00%	0
93	0.00%	0
94	0.00%	0
95	0.00%	0
96	0.00%	0
97	0.00%	0
98	0.00%	0

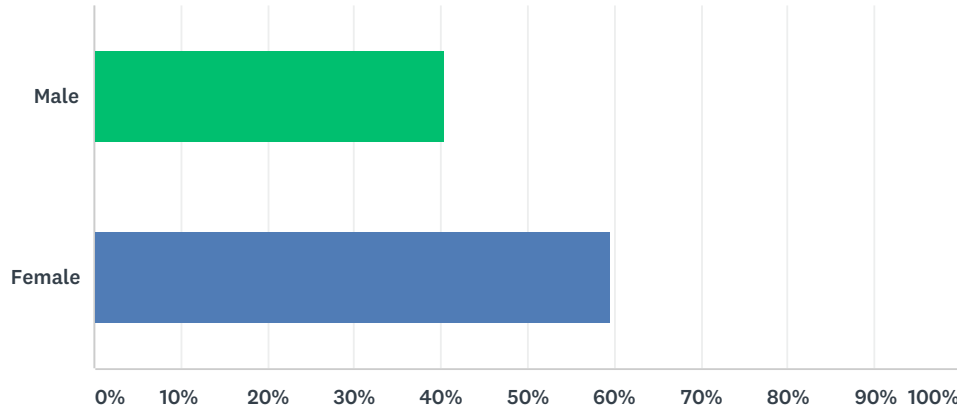
## Region 8 Planning & Development Council Hazard Mitigation Survey

99	0.00%	0
100	0.00%	0
101	0.00%	0
102	0.00%	0
103	0.00%	0
104	0.00%	0
105	0.00%	0
106	0.00%	0
107	0.00%	0
108	0.00%	0
109	0.00%	0
110	0.00%	0
TOTAL		47



## Q17 Gender

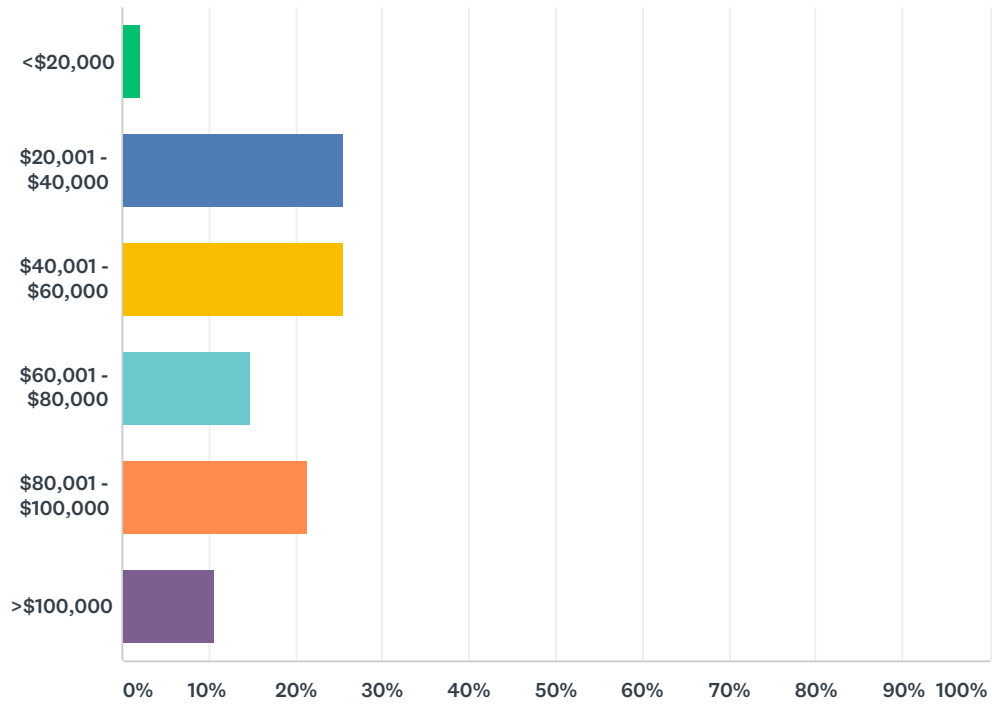
Answered: 47 Skipped: 11



ANSWER CHOICES	RESPONSES	
Male	40.43%	19
Female	59.57%	28
TOTAL		47

## Q18 Please indicate your household income:

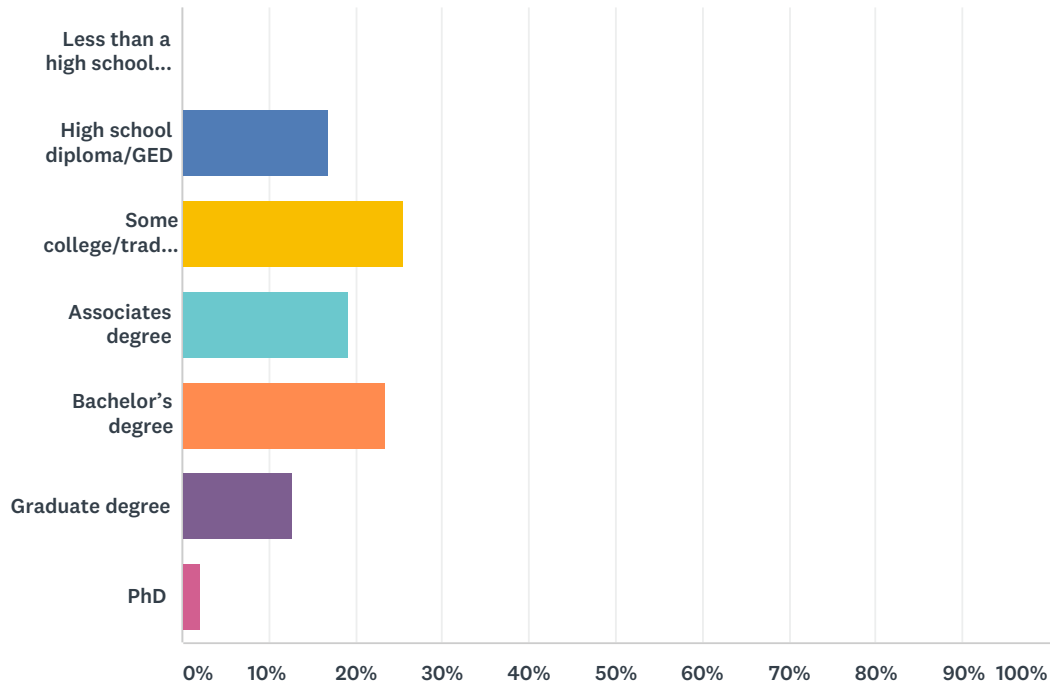
Answered: 47 Skipped: 11



ANSWER CHOICES	RESPONSES	
<\$20,000	2.13%	1
\$20,001 - \$40,000	25.53%	12
\$40,001 - \$60,000	25.53%	12
\$60,001 - \$80,000	14.89%	7
\$80,001 - \$100,000	21.28%	10
>\$100,000	10.64%	5
<b>TOTAL</b>		<b>47</b>

## Q19 Please indicate your level of education

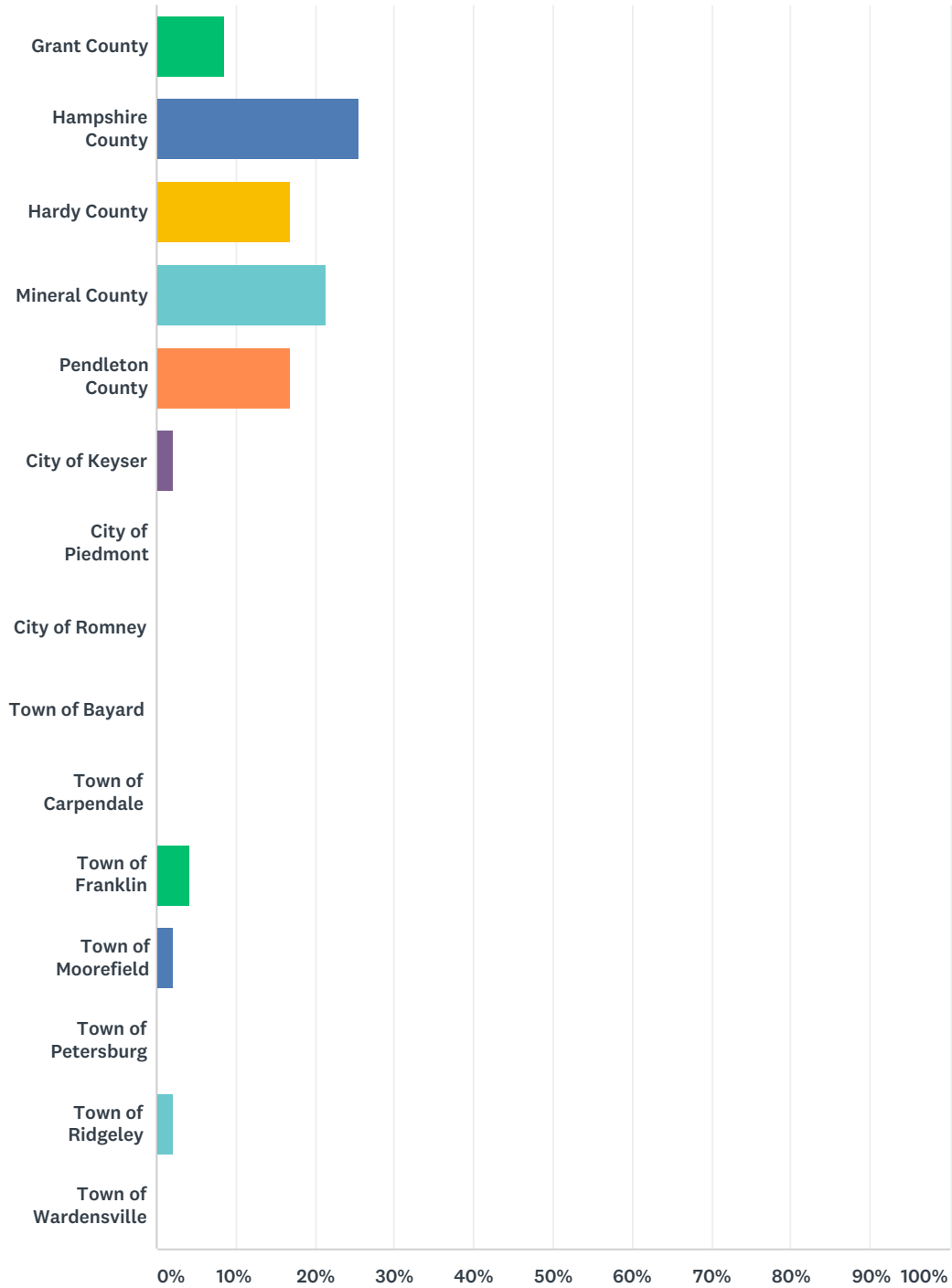
Answered: 47 Skipped: 11



ANSWER CHOICES	RESPONSES	
Less than a high school diploma	0.00%	0
High school diploma/GED	17.02%	8
Some college/trade school	25.53%	12
Associates degree	19.15%	9
Bachelor's degree	23.40%	11
Graduate degree	12.77%	6
PhD	2.13%	1
<b>TOTAL</b>		<b>47</b>

## Q20 Where do you live?

Answered: 47 Skipped: 11



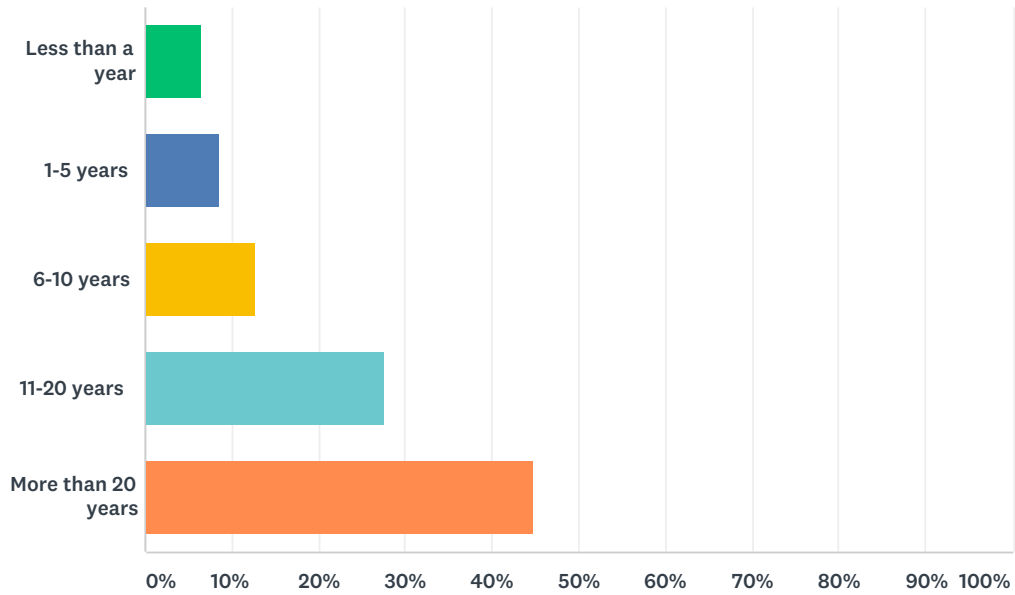
ANSWER CHOICES	RESPONSES	
Grant County	8.51%	4
Hampshire County	25.53%	12
Hardy County	17.02%	8

## Region 8 Planning & Development Council Hazard Mitigation Survey

Mineral County	21.28%	10
Pendleton County	17.02%	8
City of Keyser	2.13%	1
City of Piedmont	0.00%	0
City of Romney	0.00%	0
Town of Bayard	0.00%	0
Town of Carpendale	0.00%	0
Town of Franklin	4.26%	2
Town of Moorefield	2.13%	1
Town of Petersburg	0.00%	0
Town of Ridgeley	2.13%	1
Town of Wardensville	0.00%	0
<b>TOTAL</b>		<b>47</b>

## Q21 How long have you resided in your community?

Answered: 47 Skipped: 11



ANSWER CHOICES	RESPONSES	
Less than a year	6.38%	3
1-5 years	8.51%	4
6-10 years	12.77%	6
11-20 years	27.66%	13
More than 20 years	44.68%	21
<b>TOTAL</b>		<b>47</b>

**Q22 If you would like to take part in additional surveys regarding potential hazard mitigation projects please provide a valid email address.**

Answered: 12 Skipped: 46

## Q23 Please share any other comments you have

Answered: 6 Skipped: 52



## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Pilgrims Pride  
Peyton Umstot, Manager  
129 Potomac Avenue  
Moorefield, WV 26836

Dear Mr. Umstot:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Allegheny Dimensions  
Paul Gilbert, Manager  
390 Moorefield Industrial Park Road  
Moorefield, WV 26836

Dear Mr. Gilbert:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Grant Memorial Hospital  
Ronnie Arbaugh, Human Resource Manager  
P.O. Box 1019  
Petersburg, WV 26847

Dear Mr. Arbaugh:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

American Woodmark  
Faron Shanholtz, Human Resource Manager  
587 Robert C. Byrd Industrial Park Road  
Moorefield, WV 26836

Dear Mr. Shanholtz:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Eastern Community and Technical College  
Charles Terrell, President  
316 Eastern Drive  
Moorefield, WV 26836

Dear President Terrell:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Grant County Board of Education  
Doug Lambert, Superintendent  
204 Jefferson Avenue  
Petersburg, WV 26847

Dear Mr. Lambert:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your operation. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Region 9 Planning and Development Council  
Bill Clark, Executive Director  
400 W. Stephen Street, Suite 301  
Martinsburg, WV 25401

Dear Mr. Clark:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Region 7 Planning and Development Council  
Shane Whitehair, Executive Director  
99 Edmiston Way, Suite 225  
Buckhannon, West Virginia 26201

Dear Mr. Whitehair:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant



## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Region 4 Planning and Development Council  
John Tuggle, Executive Director  
885 Broad Street, Suite 100  
Summersville, West Virginia 26651

Dear Mr. Tuggle:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Potomac Valley Hospital  
Attn: Manager  
100 Pin Oak Lane  
Keyser, WV 26726

Dear Manager:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Potomac Valley Hospital  
Attn: Manager  
100 Pin Oak Lane  
Keyser, WV 26726

Dear Manager:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Mineral County Board of Education  
Shawn Dilly, Superintendent  
36 Baker Place  
Keyser, WV 26726

Dear Mr. Dilly:

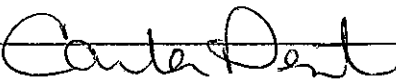
The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your operation. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Hardy County Board of Education  
Sheena VanMeter, Superintendent  
510 Ashby Street  
Moorefield, WV 26836

Dear Mrs. VanMeter:

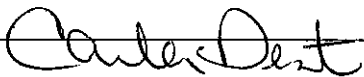
The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your operation. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Darin Judy  
Judy's Drug Store  
24 North Main Street  
Petersburg, WV 26847

Dear Mr. Judy:

The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Kari Evans, Administrator  
Grant County Rehabilitation Center  
27 Early Avenue  
Petersburg, WV 26847

Dear Mrs. Evans:

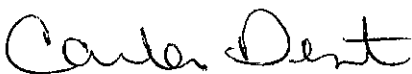
The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your business. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant

## Region 8 Planning and Development Council

Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Telephone (304) 257-2448  
Fax (304) 257-4958  
E-Mail: [www.regioneight.org](http://www.regioneight.org)

January 5, 2018

Pendleton County Board of Education  
Charles Hedrick, Superintendent  
108 Walnut Street  
Franklin, WV 26807

Dear Mr. Hedrick:

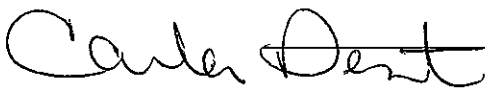
The Region 8 Planning and Development Council (Grant, Hampshire, Hardy, Mineral, and Pendleton Counties) is currently in the process of updating its hazard mitigation plan. As our project nears completion, we would like to encourage you to provide any comments you feel are appropriate.

In particular, we are interested in your thoughts as to any hazards that may be associated with your operation and impact our county. Conversely, we would like to know of any hazards that originate in Grant, Hampshire, Hardy, Mineral, or Pendleton Counties that you feel could impact your operation. Also, please let us know what type of hazard you are most concerned about (dam failure, drought, earthquake, epidemic, flood, hazardous materials incident, land subsidence, severe summer or winter weather, terrorism, or wildfire).

If you have any questions or would like to comment on the plan, please submit all notes to me at [cdent@regioneight.org](mailto:cdent@regioneight.org) or to our consultant, JH Consulting, at [aheimberger@phcpreparedness.com](mailto:aheimberger@phcpreparedness.com). Please use the subject "Region 8 Hazard Mitigation Plan Comments."

Thank you for your participation in this important project. We look forward to your comments and, as always, feel free to contact me with any questions.

Sincerely,



Carla Dent, Executive Assistant



## Amy Heimberger

---

**From:** Carla Dent <cdent@regioneight.org>  
**Sent:** Wednesday, January 17, 2018 4:45 PM  
**To:** 'Amy Heimberger'  
**Cc:** 'Terry Lively'  
**Subject:** FW: Region 8 Hazard Mitigation Plan comments

**Flag Status:** Flagged

Hi Amy,  
I just received this e-mail with HMP comments.  
Have a good evening,  
Carla

---

**From:** Earnest, Brenna [<mailto:brenna.earnest@wvumedicine.org>]  
**Sent:** Wednesday, January 17, 2018 12:32 PM  
**To:** [cdent@regioneight.org](mailto:cdent@regioneight.org)  
**Subject:** Region 8 Hazard Mitigation Plan comments

Carla,  
I am the safety officer here at PVH so I was given your letter.  
I am not aware of any hazards that would be associated with our operations.  
Hazards that concern the hospital of course would be flood because of our location and severe winter weather. Terrorism such as active shooter is a concern also.  
Thank you

Brenna E. Earnest MSN, RN, CDE  
Diabetes Education/Diabetes Prevention  
Safety Officer  
Potomac Valley Hospital  
(304) 597-3774 phone  
(304) 597-3683 fax

[brenna.earnest@wvumedicine.org](mailto:brenna.earnest@wvumedicine.org)



**POTOMAC VALLEY HOSPITAL**

**Confidentiality Notice: This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.**



Virus-free. [www.avast.com](http://www.avast.com)

## Amy Heimberger

---

**From:** Carla Dent <cdent@regioneight.org>  
**Sent:** Monday, January 29, 2018 10:21 AM  
**To:** 'Amy Heimberger'  
**Subject:** FW: HVA

**Flag Status:** Flagged

Hi Amy,

I just received this e-mail. She will be sending me this information and I will forward it to you. I realize you have concluded the participation process, but I thought we may want to keep this information.

Thanks.

Carla

---

**From:** Kari Evans [<mailto:kevans@gcnh.us>]  
**Sent:** Monday, January 29, 2018 9:55 AM  
**To:** [cdent@regioneight.org](mailto:cdent@regioneight.org)  
**Subject:** HVA

Hi Carla,

I received your letter regarding our assessment of potential hazards for our organization. My staff completed a Hazard Vulnerability Assessment that I am happy to share with you. Let me know if you would be interested in that information and I will send it to you via email.

Thanks,

Kari

*Kari Evans RN, MSN, LNHA*  
*Grant Rehabilitation and Care Center*  
*127 Early Avenue*  
*Petersburg, WV 26847*  
*304-257-4233*  
[kevans@gcnh.us](mailto:kevans@gcnh.us)



Virus-free. [www.avast.com](http://www.avast.com)



## Region 4 Planning and Development Council

885 Broad Street, Suite 100  
Summersville, WV 26651

Phone: 304-872-4970  
Fax: 304-872-1012  
[www.reg4wv.org](http://www.reg4wv.org)

Region 8 Planning and Development Council  
Carla Dent, Executive Assistant  
Grant County Industrial Park  
131 Providence Lane  
Petersburg, WV 26847

Re: Region 8 Hazard Mitigation Plan Comments

Dear Ms. Dent,

We recently received a letter from Region 8 Planning and Development Council requesting our thoughts regarding any hazards that may be associated with our operation and impact your county. Pocahontas County located within the Region 4 Planning and Development Council boundary sits abut to Pendleton County located within Region 8 Planning and Development Council. A large factor we take into consideration within Pocahontas County is the Monongahela National Forest, this National Forest also extends into parts of Pendleton County.

In the Region 4 Planning and Development Council Hazard Mitigation Plan we looked at a variety of potential hazards that could affect our Region, such as Dam Failure, Drought, Earthquake, Extreme Temperatures, Flooding, Hailstorm, Hazmat Incident, Mass Movement, Terrorism, Thunderstorm, Tornadoes, Wildfire, Wind and Winter Storm. Of the previously stated hazardous situations we feel it to be relevant between Pocahontas and Pendleton counties to consider additional planning in the event of Flooding, Mass Movement, Tornado and Wildfire. We are most concerned with flooding within the Monongahela National Forest, the June 2016 flood had a significant impact in the portion of the forest located in Webster County. Slightly prior to the June 2016 flood evidence of a tornado touching down within the forest has also been reported. While many of the hazardous situations explained are not on a reoccurring basis we fell it relevant to continue to plan for such events.

Thank you for reaching out to Region 4 Planning and Development Council regarding Hazard Mitigation, we feel this is a very important matter. Should there be any additional questions, comments or concerns please feel free to contact me at 304-872-4970.

Sincerely,

John Tuggle, P.E., P.S.  
Executive Director

JWT/as

**REGION 8 EMAIL/FAX/PHONE CALL LOG**

<i>Stakaholder</i>	<i>Title</i>	<i>Name</i>	<i>Contact Method</i>	<i>To/From</i>	<i>Date</i>	<i>Subject</i>
Mineral County		Ben Smith	Email	To	8/16/2017	Capabilities survey link (undeliverable)
Hampshire County	HSEM Director	Brian Malcolm	Email	To	8/16/2017	Capabilities survey link
Pendleton County	OEM Director	Bruce Minor	Email	To	8/16/2017	Capabilities survey link
Region 8 PDC	Office Assistant	Carla Dent	Email	To	8/16/2017	Capabilities survey link
Region 8 PDC	Office Assistant	Carla Dent	Email	To	8/16/2017	Request new contact info for Ben Smith and all other Jurisdictions
Grant County	Floodplain Manager	Cullen Sherman	Email	To	8/16/2017	Capabilities survey link
Mineral County	Floodplain Manager	Drew Brubaker	Email	To	8/16/2017	Capabilities survey link
Town of Franklin	Floodplain Manager	Frank Wehrle	Email	To	8/16/2017	Capabilities survey link
Pendleton County		Gene McConnell	Email	To	8/16/2017	Capabilities survey link
City of Romney	Floodplain Manager	Jessica Szabo	Email	To	8/16/2017	Capabilities survey link
Mineral County	HSEM Director	Luke McKenzie	Email	To	8/16/2017	Capabilities survey link
Hardy County	Floodplain Manager	Melissa Scott	Email	To	8/16/2017	Capabilities survey link
Hardy County	OEM Director	Paul Lewis	Email	To	8/16/2017	Capabilities survey link
Grant County	OEM Director	Peggy Bobo-Alt	Email	To	8/16/2017	Capabilities survey link
Mineral County	Commissioner	Roger Leatherman	Email	To	8/16/2017	Capabilities survey link
Region 8 PDC	Executive Director	Terry Lively	Email	To	8/16/2017	Capabilities survey link
Region 8 PDC	Office Assistant	Carla Dent	Email	From	8/17/2017	Sent other jurisdiction's contact info. Will check with Terry for next date for meeting
Town of Franklin	Floodplain Manager	Frank Wehrle	Email	From	8/28/2017	Sent back assets list
Mineral County	HSEM Director	Luke McKenzie	Phone	From	8/28/2017	Asked about assets in Excel format
All			Email	To	8/28/2017	Sent out capabilities survey reminder and asset list
All			Email	To	9/14/2017	Important dates of upcoming meetings
All			Email	To	9/18/2017	List of tasks and reminder of conference call and meetings
Hardy County	OEM Director	Paul Lewis	Fax	From	9/22/2017	Sent Moorefield asset list
City of Piedmont	Clerk	Debbie Weasenforth	Email	To	9/25/2017	Asked for the mayor's (Ben Smith) correct email address
Hardy County	OEM Director	Paul Lewis	Email	To	9/25/2017	Asked for updated county assets, sent list
Region 8 PDC	Office Assistant	Carla Dent	Email	To	10/13/2017	Need to reschedule next meeting
All		All	Email	To	11/21/2017	Please post public survey again, public meetings?
Hardy County	OEM Director	Paul Lewis	Email	To	11/21/2017	Requested contact info for Wardensville
Region 8 PDC	Office Assistant	Carla Dent	Email	To	1/4/2018	Sent info on requesting input from neighboring jurisdictions.
City of Romney	Mayor	Beverly Keadle	Email	To	1/5/2018	Requested assets, project status update and concerns with hazards.
Hampshire County	HSEM Director	Brian Malcolm	Email	To	1/5/2018	Requested project status update and NFIP survey completed
Hampshire County	HSEM Director	Brian Malcolm	Email	From	1/5/2018	Sent NFIP questionnaire answered
Hampshire County	HSEM Director	Brian Malcolm	Email	From	1/5/2018	Sent information about contacts for Capon Bridge and Romney
Region 8 PDC	Office Assistant	Carla Dent	Email	From	1/5/2018	Will send out emails to partners to request input to plan
Region 8 PDC	Office Assistant	Carla Dent	Email	To	1/5/2018	Requested contact for jurisdictions and for public survey to be posted on their website.
Region 8 PDC	Office Assistant	Carla Dent	Email	From	1/5/2018	Sent contact list of organizations contacted for HMP review
Hampshire County	Administrative Assistant	Christie Weddle	Email	From	1/5/2018	Sent contact information for Keyser, Ridgeley, Carpendale, Piedmont, and Elk Garden
City of Romney	Floodplain Manager	Jessica Szabo	Email	To	1/5/2018	Requested project status update and NFIP survey completed

**REGION 8 EMAIL/FAX/PHONE CALL LOG**

<i>Stakaholder</i>	<i>Title</i>	<i>Name</i>	<i>Contact Method</i>	<i>To/From</i>	<i>Date</i>	<i>Subject</i>
Mineral County	HSEM Director	Luke McKenzie	Email	To	1/5/2018	Requested the capabilities and NFIP survey be sent to Mineral jurisdictions.
WV DOH District 8	Highway Engineer	Jeremiah Knavenshue	Email	From	1/8/2018	Sent information regarding landslides in Pendleton County
Region 8 PDC	Office Assistant	Carla Dent	Email	To	1/9/2018	Requested list of PDC members' affiliation
Region 8 PDC	Office Assistant	Carla Dent	Email	From	1/9/2018	Sent list of membership and meeting minutes
City of Romney	Mayor	Beverly Keadle	Phone	To	1/10/2018	Provided new email address
City of Romney	Mayor	Beverly Keadle	Email	To	1/10/2018	Requested assets, project status update and concerns with hazards.
Hampshire County	HSEM Director	Brian Malcolm	Phone	To	1/10/2018	Left message about project status and NFIP survey
Hampshire County	HSEM Director	Brian Malcolm	Email	To	1/10/2018	Don't need NFIP survey, just project status update
Pendleton County	OEM Director	Bruce Minor	Phone	To	1/10/2018	No answer
Grant County	Floodplain Manager	Cullen Sherman	Phone	To	1/10/2018	Left message about project status updates
City of Petersburg		Gary Michael	Email	To	1/10/2018	Requested capabilities survey and asked questions about hazards and projects
Pendleton County	Regional Epidemiologist	Kimerly Klein	Email	From	1/10/2018	Sent information regarding reportable diseases in Region 8
Hardy County	OEM Director	Paul Lewis	Phone	To	1/10/2018	Left message requesting assets
Town of Bayard	Mayor	Steven Durst	Email	To	1/10/2018	Requested capabilities survey and asked questions about hazards and projects
Hampshire County	HSEM Director	Brian Malcolm	Email	From	1/11/2018	Sent status of 2012 projects
Hampshire County	HSEM Director	Brian Malcolm	Phone	From	1/11/2018	Called in regards to my message yesterday.
Mineral County	HSEM Director	Luke McKenzie	Email	From	1/11/2018	Sent update of development areas
Hardy County	Floodplain Manager	Melissa Scott	Email	From	1/11/2018	Sent dam shapefiles for GIS mapping
Hampshire County	HSEM Director	Brian Malcolm	Phone	To	1/17/2018	Not in office
Region 8 PDC	Office Assistant	Carla Dent	Email	From	1/17/2018	Forwarded email response from WVU Medicine at the Potomac Valley Hospital
Grant County	Floodplain Manager	Cullen Sherman	Phone	To	1/17/2018	Called to remind of NFIP surveys and project status updates.
Grant County	Floodplain Manager	Cullen Sherman	Email	From	1/17/2018	Sent updated project list for county and jurisdictions
Mineral County	HSEM Director	Luke McKenzie	Email	From	1/17/2018	Sent information on Tier II facilities in the county
Hardy County	OEM Director	Paul Lewis	Phone	To	1/17/2018	Left message requesting assets
Town of Capon Bridge		Penny Feather	Phone	To	1/17/2018	Talked about jurisdictional participation and hazards.
Town of Capon Bridge		Penny Feather	Email	To	1/17/2018	Sent capabilities survey and questions about hazards.
City of Petersburg	City Manager	Sheila Vanmeter	Phone	To	1/17/2018	Left message to call me about participation
City of Petersburg	City Manager	Sheila Vanmeter	Phone	To	1/17/2018	Talked about the capabilities survey and asked hazards questions.
City of Petersburg	City Manager	Sheila Vanmeter	Email	To	1/17/2018	Emailed capabilities and hazards questions
Town of Bayard	Mayor	Steven Durst	Phone	To	1/17/2018	Talked about flooding in the town and history of the town
Town of Bayard	Mayor	Steven Durst	Email	To	1/17/2018	Sent capabilities survey
All		All	Email	To	1/18/2018	Sent updated project list to everyone for review and approval.
City of Piedmont	Mayor	Ben Smith	Phone	To	1/18/2018	Left message to call me about participation and got correct email.
City of Piedmont	Mayor	Ben Smith	Email	To	1/18/2018	Asked for email to send capabilities survey, question about hazards and review of projects
City of Keyser	Recorder	Brandi Paugh	Phone	To	1/18/2018	Asked for email to send capabilities survey, question about hazards and review of projects

**REGION 8 EMAIL/FAX/PHONE CALL LOG**

<i>Stakaholder</i>	<i>Title</i>	<i>Name</i>	<i>Contact Method</i>	<i>To/From</i>	<i>Date</i>	<i>Subject</i>
City of Keyser	Recorder	Brandi Paugh	Email	To	1/18/2018	Send capabilities, hazards questions and projects for review.
City of Keyser	Recorder	Brandi Paugh	Email	From	1/18/2018	No changes to the projects, completed the capabilities survey
Hampshire County	HSEM Director	Brian Malcolm	Phone	To	1/18/2018	Requested project status update and the Tier II facilities
Town of Carpendale		Butch Armentrout	Phone	To	1/18/2018	No answer, could not leave message.
Town of Ridgeley	Mayor	Clarence	Phone	To	1/18/2018	Left message to call me about participation
Mineral County	Floodplain Manager	Drew Brubaker	Email	From	1/18/2018	Mayor of Ridgeley Lynn Carr passed away several weeks ago.
Grant County	OEM Director	Peggy Bobo-Alt	Phone	To	1/18/2018	Left message requesting Tier II facility information
Town of Elk Garden			Phone	To	1/18/2018	No answer, could not leave message.
Hampshire County	HSEM Director	Brian Malcolm	Email	From	1/19/2018	Sent list of Tier II facilities
Pendleton County	OEM Director	Bruce Minor	Phone	To	1/19/2018	Called to ask for project status update and Tier II facilities.
Pendleton County	OEM Director	Bruce Minor	Email	To	1/19/2018	Emailed to remind him of phone call conversation.
Region 8 PDC	Office Assistant	Carla Dent	Email	To	1/19/2018	Asked for new contact info for Elk Garden, Capon Bridge, and Ridgeley
Region 8 PDC	Office Assistant	Carla Dent	Email	From	1/22/2018	Sent new contact info for Elk Garden Capon Bridge and Ridgeley.
Pendleton County	Regional Epidemiologist	Kimerly Klein	Email	From	1/22/2018	Sent new information on the flu data statewide
Pendleton County	OEM Director	Bruce Minor	Phone	To	1/23/2018	No answer
Hardy County	OEM Director	Paul Lewis	Phone	To	1/23/2018	Reminded of request for Tier II facilities - said the LEPC would have to contact me to give me info.
Grant County	OEM Director	Peggy Bobo-Alt	Phone	To	1/23/2018	Left message reminding of Tier II facilities
The Pendleton Times	Reporter	Shawn Stinson	Email	From	1/25/2018	Sent the article they ran in the newspaper about the HMP
Region 8 PDC	Office Assistant	Carla Dent	Email	From	1/29/2018	Forwarded email response from Grant Rehab and Care Center
Region 8 PDC	Office Assistant	Carla Dent	Email	From	1/31/2018	The HMP draft is on the Region 8 PDC website for review
Region 8 PDC	Office Assistant	Carla Dent	Email	From	2/1/2018	Forwarded comments from Region 4 PDC about HMP
Region 8 PDC	Office Assistant	Carla Dent	Email	From	4/12/2018	Forwarded NFIP survey from Romney and Capon Bridge
Region 8 PDC	Office Assistant	Carla Dent	Email	From	5/18/2018	Forwarded NFIP survey from Wardensville
Region 8 PDC	Office Assistant	Carla Dent	Email	From	5/23/2018	Forwarded NFIP survey from Mooresfield
Town of Ridgeley	Mayor	Mark Jones	Phone	To	6/4/2018	No answer, left message
Town of Carpendale	Clerk	Rhonda Vanmeter	Phone	To	6/4/2018	Asked for email to send capabilities survey. Asked to complete today.
Town of Carpendale	Clerk	Rhonda Vanmeter	Email	To	6/4/2018	Sent capabilities survey link with link to draft plan on R8PDC website.
City of Petersburg	City Manager	Sheila Vanmeter	Phone	To	6/4/2018	Asked to complete capabilities survey and NFIP survey today.
City of Petersburg	City Manager	Sheila Vanmeter	Email	To	6/4/2018	Sent capabilities survey link and NFIP survey with link to draft plan on R8PDC website
Town of Elk Garden	Councilman	Tom Braithwaite	Phone	To	6/4/12018	Called town hall, no answer, could not leave message
Town of Elk Garden	Councilman	Tom Braithwaite	Phone	To	6/5/2018	Spoke to Tom about hazards, said his most prevalent hazard is ice and winter storms, not flooding because they are on top of a mountain. Asked to fill out the capabilities survey.
Town of Elk Garden	Councilman	Tom Braithwaite	Email	to	6/5/2018	Sent survey link with the link of where to find the plan.

## APPENDIX 3 INACTIVE PROJECTS

The following table lists the projects from 2012 that have been completed, deleted, or deferred in this update.

<b>TABLE 5.3.A INACTIVE PROJECTS</b>			
<i>Jurisdiction</i>	<i>2012 Project Number</i>	<i>Strategy</i>	<i>Narrative</i>
Franklin, Town of	E1.1.1	Flood wall needed for Town of Franklin.	Delete. No action taken.
Hardy County	H2.1.1	Review Hardy County Health Department plan.	Complete
Hardy County	H2.1.3	Compile an 'animals in disaster' plan for Hardy County.	Complete
Hardy County	H3.1.3	Identify water resources.	Complete
Hardy County	H5.1.4	The county needs to purchase equipment (hovercraft) to ensure that residents in the Old Fields area are accessible should a flood close US 220 out of Moorefield.	No longer necessary. Delete.
Hardy County	H6.1.3	Review the <i>Hardy County EOP</i> plans and fire department plans for compatibility.	Complete. This is done annually
Hardy County	H6.3.2	Identify location of natural gas lines.	Complete. This is done by the gas industry.
Hardy County	H8.1.3	Provide training for emergency personnel to identify human diseases.	Delete. Health Department daily activities.
Hardy County	H11.2.2	Implement snow route procedures after 2" of accumulated snowfall to protect infrastructure such as roads, alleys, and highways that are needed for emergency response capability.	Complete. DOH responsibility.
Keyser, City of	I1.1.1	Maintain or replace retaining walls in Keyser along Water Street.	Complete
Mineral County	J1.1.4	Review plan for Jennings Randolph dam in the Elk Garden area.	Complete
Mineral County	J1.1.6	Coordinate with the State of Maryland concerning the Savage River Dam. Review plan.	Complete
Mineral County	J1.1.7	Coordinate with the Soil Conservation Service regarding dam inspections; also, maintain copies of inundation mapping and other dam risk assessments at the Mineral County Office of Emergency Management office (in an attempt to warn the public).	Complete
Mineral County	J4.1.1	Educate the public as to the actual earthquake risk.	Deferred.

TABLE 5.3.A INACTIVE PROJECTS			
<i>Jurisdiction</i>	<i>2012 Project Number</i>	<i>Strategy</i>	<i>Narrative</i>
Mineral County	J5.3.1	Consider the development of a flood-specific annex to the Mineral County Emergency Operations Plan.	Delete.
Mineral County	J6.1.1	Initiate response of Hazardous Incidents Response Team.	Complete
Mineral County	J6.1.2	Initiate response of Region III response team.	Complete
Mineral County	J6.1.3	Review the Mineral County Emergency Operations Plan regarding hazmat responses.	Complete
Mineral County	J6.2.2	Ensure regular updating of the commodity flow study.	Deferred.
Mineral County	J6.4.1	Educate public concerning response to hazardous incidents.	Deferred.
Mineral County	J8.4.1	Compile, update, and maintain a terrorism vulnerability assessment for Mineral County.	Deferred.
Mineral County	J8.4.2	Create a terrorism annex to the county Emergency Operations Plan.	Complete
Mineral County	J11.1.2	Access money for snow removal when there is an emergency declaration and the potential for reimbursement.	Delete.
Mineral County	J11.1.3	Identify snow removal resources locally and regionally.	Complete
Mineral County	J11.1.8	Consider creating a county-specific snow emergency plan.	Delete.
Moorefield, Town of	K1.2.3	The Town of Moorefield should flood proof its wastewater treatment plant and lagoon.	Delete. Moved out of town.
Moorefield, Town of	K1.2.4	Flood proofing the Town of Moorefield's Water Treatment Plant.	Delete. A new water treatment plant is being built.
Pendleton County	L3.2.1	Use drought monitor to determine where drought areas are located.	Complete with the update of this plan.



**APPENDIX 4**  
**HAMPSHIRE COUNTY FLOODPLAIN MANAGEMENT PLAN**

# Floodplain Management Plan

## Hampshire County, West Virginia

### 1. Introduction and purpose

Pursuant to Hampshire County participating in the Community Rating System through the Federal Emergency Management Administration (FEMA), a voluntary program, a Floodplain Management Plan is required.

The purpose of the Floodplain Management Plan is to better prepare, plan, educate, mitigate, and prevent the loss of property and life due to flooding and other disasters in Hampshire County, West Virginia.

#### A. Setting:

Hampshire County is located in the Potomac Highlands region of the eastern panhandle of West Virginia, between Alleghany County, Maryland and Fredrick County, Virginia. Hampshire County covers 642 square miles. Hampshire County is also bordered by three West Virginia counties, Morgan to the north, Hardy to the south, and Mineral to the West. Hampshire County does share a boundary corner with Grant County, West Virginia.

The topography of Hampshire County is in the Valley and Ridge Province of West Virginia. The county is divided into three regions; southwestern which is drained by the Cacapon River and its tributaries, northwestern which is drained by the South Branch of the Potomac River, and the midsection which is drained by the Little Cacapon River. Three strata types appear in Hampshire County are sandstone, shale, and limestone.

The United States Census 2015 estimates paint an uncertain future for Hampshire County. The 2015 estimated population of 23,353 is down 611 from the actual 2010 census population of 23,964. This is a change of negative 2.5 percent. Housing however may indicate growth as housing units have increased from 13,688 units in 2010 to 13,806 units in the 2015 estimate, an increase of 118 units. Residential permits being issued is also on the rise, there were 45 permits issued in 2016 for stick built homes and 126 for manufactured or modular homes.

There are major traffic corridors leading throughout the county. US Route 50 is the major thoroughfare, leading from east to west transecting the middle of the county. Three major routes transect the county from north to south; Route 220 in the west, Route 29 in the center of the county, and Route 259 runs from south to US Route 50 in the east. All of these major arteries are at risk of damage or closure due to natural disasters. There are also two rail lines located within the county. The CSX rail line runs along the northern most borders along the Potomac River until it crosses into Morgan County, West Virginia. The South Branch Valley Railroad leads from its railhead with the CSX Railroad in Green Spring up the Greenspring Run Valley to Blues's Beach where it then follows the South Branch River Valley to Hardy County, West Virginia to the south. Air traffic would not be able to assist greatly in a disaster as there are only a few small heliports established for medical evacuation utilization and smaller private airports, none of these could support large scale transports.

## 2. Problem Identification

### 2.1 Flood History

Hampshire County sits in the Potomac Highlands and has five main drainage areas; Potomac River, South Branch of the Potomac, North River, Little Cacapon and the Cacapon River. There are also many larger tributaries leading to the main drainage areas, such as Greenspring Run, Dillon's Run, Mill Creek or South Fork or North Fork of the Little Cacapon. This ridge and valley type of terrain leads to riverine flooding. Typically flooding occurs in short durations lasting less than twenty-four (24) hours. Flooding occurs many different ways in Hampshire County; it can experience widespread, county wide flooding or localized flooding. Localized flooding can occur from a storm happening in the county itself or upstream in one of the major drains such as the Potomac, South Branch of the Potomac, or North Rivers.

The South Branch of the Potomac River in Hampshire County typically produces the floods with greater occurrences. Data from a river gage located on the South Branch near Springfield is readily available from February of 1932. At this site major flood stage is 25 feet, moderate flood at 19 feet, flood stage at 15 feet, and action stage at 12 feet. Since February, 4 1932 this location has recorded eighty (80) events over flood stage, twenty-eight (28) over moderate flood, and six (6) over major flood. The six major floods occurred on 11/05/1985, 09/07/1996, 03/18/1936, 06/18/1949, 01/20/1996, and 08/19/1955. The most severe of these was the 11/05/1985 flood which recorded a crest of 44.22 feet, 29.22 feet above flood stage. The majority of these flood occur during the winter and spring months.

### 2.2 Wind Storm History:

Hampshire County does have a history with wind damage. There has never been a massive disaster for Hampshire County involving wind; however the county has experienced a derecho, straight line winds, and tornados. These have been localized events that to date have caused little damage. These must be considered as the frequency and tenacity of storms are escalating. Hampshire County does also possess many high ridges that run in a north to south orientation that are susceptible to these types of events.

### 2.3 Landslide/Mudslide History:

Hampshire County has experienced minor slides in the past. These typically occur during rain events and often occur along the cut slopes of the road system. When these occur it is the responsibility of the West Virginia Department of Highways to repair. Given Hampshire County's terrain we are classified as high susceptibility/low incidence by the United States Geological Survey (USGS) Land Subsidence Map. This does raise concerns in that we are at a high risk and with increasing development this could lead to more occurrences of this type of disaster.

### 2.4 Dam Failure:

Dam failure has never impacted Hampshire County on a scale that can be documented. The county is at risk due to the positioning of impoundments upstream of the county. The largest of these structures is the United States Army Corps of Engineers dam of Jennings Randolph. Two

other large dams containing the Savage River and the Upper Potomac would impact Hampshire County. There are also numerous flood control impoundments constructed by the Natural Resource Conservation Service (NRCS). All of the previously noted impoundments are controlled and or regulated by governmental entities and have regular maintenance and inspections. Possibly of greater concern would be privately owned impoundments that are not properly maintained and inspected.

## Historic Crests for The South Branch of the Potomac at Springfield WV

- |                                |                                 |
|--------------------------------|---------------------------------|
| (1) 44.22 ft on 11/05/1985     | (43) 17.38 ft on 03/24/1991     |
| (2) 34.98 ft on 09/07/1996     | (44) 17.35 ft on 04/15/1948     |
| (3) 34.20 ft on 03/18/1936     | (45) 17.32 ft on 10/19/1975     |
| (4) 29.85 ft on 06/18/1949     | (46) 17.31 ft on 03/02/1954     |
| (5) 28.41 ft on 01/20/1996     | (47) 17.27 ft on 03/22/1962     |
| (6) 25.55 ft on 08/19/1955     | (48) 17.21 ft on 01/27/1978     |
| (7) 24.70 ft on 09/20/2003 (P) | (49) 17.15 ft on 09/19/1945     |
| (8) 23.42 ft on 10/10/1976     | (50) 17.02 ft on 12/05/1950     |
| (9) 23.00 ft on 04/27/1937     | (51) 17.00 ft on 08/24/1933     |
| (10) 22.15 ft on 03/20/1963    | (52) 16.93 ft on 03/05/2008     |
| (11) 22.00 ft on 05/23/1942    | (53) 16.79 ft on 05/09/2013     |
| (12) 21.50 ft on 10/16/1954    | (54) 16.79 ft on 05/09/2013     |
| (13) 21.40 ft on 02/04/1939    | (55) 16.79 ft on 05/18/1996     |
| (14) 21.15 ft on 10/29/1937    | (56) 16.75 ft on 01/01/1976     |
| (15) 21.11 ft on 10/06/1972    | (57) 16.71 ft on 04/25/1983     |
| (16) 21.09 ft on 10/16/1942    | (58) 16.70 ft on 05/09/1960     |
| (17) 21.00 ft on 03/08/1967    | (59) 16.63 ft on 05/17/1942     |
| (18) 20.40 ft on 02/04/1932    | (60) 16.58 ft on 04/06/1977     |
| (19) 20.34 ft on 03/20/1975    | (61) 16.55 ft on 03/21/1982     |
| (20) 20.16 ft on 12/27/1973    | (62) 16.33 ft on 10/23/1929     |
| (21) 20.11 ft on 05/31/1940    | (63) 16.33 ft on 03/31/1960     |
| (22) 19.50 ft on 04/16/2007    | (64) 16.20 ft on 06/01/1985     |
| (23) 19.19 ft on 02/10/1994    | (65) 16.13 ft on 04/13/2011     |
| (24) 19.18 ft on 04/17/1987    | (66) 16.10 ft on 02/26/1936     |
| (25) 19.18 ft on 03/15/1986    | (67) 16.07 ft on 05/01/1980     |
| (26) 19.17 ft on 02/26/1979    | (68) 15.98 ft on 01/09/1998     |
| (27) 19.13 ft on 04/17/1929    | (69) 15.95 ft on 05/11/2003 (P) |
| (28) 19.01 ft on 05/18/2011    | (70) 15.69 ft on 03/27/1978     |
| (29) 18.63 ft on 02/15/1984    | (71) 15.37 ft on 04/29/2011     |
| (30) 18.57 ft on 05/17/2014    | (72) 15.35 ft on 01/31/1939     |
| (31) 18.54 ft on 01/26/2010    | (73) 15.35 ft on 04/17/2011     |
| (32) 18.40 ft on 04/21/1901    | (74) 15.29 ft on 02/27/1972     |
| (33) 18.26 ft on 04/17/1993    | (75) 15.28 ft on 12/30/1954     |
| (34) 18.15 ft on 06/03/1974    | (76) 15.27 ft on 11/19/1929     |
| (35) 18.10 ft on 03/15/1978    | (77) 15.24 ft on 03/11/2011     |
| (36) 18.09 ft on 03/21/1998    | (78) 15.24 ft on 03/16/1967     |
| (37) 18.00 ft on 11/20/2003    | (79) 15.07 ft on 02/24/2003 (P) |
| (38) 17.90 ft on 05/08/1994    | (80) 15.00 ft on 01/16/1995     |
| (39) 17.88 ft on 05/12/1932    | (81) 14.99 ft on 03/29/2005     |
| (40) 17.87 ft on 06/23/1972    | (82) 13.90 ft on 05/05/2009     |
| (41) 17.65 ft on 12/08/1950    |                                 |
| (42) 17.49 ft on 04/23/2002    |                                 |

(P): Preliminary values subject to further review.

**Recent Crests for the South Branch of the Potomac near Springfield WV**

- |                                 |                             |
|---------------------------------|-----------------------------|
| (1) 18.57 ft on 05/17/2014      | (44) 17.32 ft on 10/19/1975 |
| (2) 16.79 ft on 05/09/2013      | (45) 20.34 ft on 03/20/1975 |
| (3) 16.79 ft on 05/09/2013      | (46) 18.15 ft on 06/03/1974 |
| (4) 19.01 ft on 05/18/2011      | (47) 20.16 ft on 12/27/1973 |
| (5) 15.37 ft on 04/29/2011      | (48) 21.11 ft on 10/06/1972 |
| (6) 15.35 ft on 04/17/2011      | (49) 17.87 ft on 06/23/1972 |
| (7) 16.13 ft on 04/13/2011      | (50) 15.29 ft on 02/27/1972 |
| (8) 15.24 ft on 03/11/2011      | (51) 15.24 ft on 03/16/1967 |
| (9) 18.54 ft on 01/26/2010      | (52) 21.00 ft on 03/08/1967 |
| (10) 13.90 ft on 05/05/2009     | (53) 22.15 ft on 03/20/1963 |
| (11) 16.93 ft on 03/05/2008     | (54) 17.27 ft on 03/22/1962 |
| (12) 19.50 ft on 04/16/2007     | (55) 16.70 ft on 05/09/1960 |
| (13) 14.99 ft on 03/29/2005     | (56) 16.33 ft on 03/31/1960 |
| (14) 18.00 ft on 11/20/2003     | (57) 25.55 ft on 08/19/1955 |
| (15) 24.70 ft on 09/20/2003 (P) | (58) 15.28 ft on 12/30/1954 |
| (16) 15.95 ft on 05/11/2003 (P) | (59) 21.50 ft on 10/16/1954 |
| (17) 15.07 ft on 02/24/2003 (P) | (60) 17.31 ft on 03/02/1954 |
| (18) 17.49 ft on 04/23/2002     | (61) 17.65 ft on 12/08/1950 |
| (19) 18.09 ft on 03/21/1998     | (62) 17.02 ft on 12/05/1950 |
| (20) 15.98 ft on 01/09/1998     | (63) 29.85 ft on 06/18/1949 |
| (21) 34.98 ft on 09/07/1996     | (64) 17.35 ft on 04/15/1948 |
| (22) 16.79 ft on 05/18/1996     | (65) 17.15 ft on 09/19/1945 |
| (23) 28.41 ft on 01/20/1996     | (66) 21.09 ft on 10/16/1942 |
| (24) 15.00 ft on 01/16/1995     | (67) 22.00 ft on 05/23/1942 |
| (25) 17.90 ft on 05/08/1994     | (68) 16.63 ft on 05/17/1942 |
| (26) 19.19 ft on 02/10/1994     | (69) 20.11 ft on 05/31/1940 |
| (27) 18.26 ft on 04/17/1993     | (70) 21.40 ft on 02/04/1939 |
| (28) 17.38 ft on 03/24/1991     | (71) 15.35 ft on 01/31/1939 |
| (29) 19.18 ft on 04/17/1987     | (72) 21.15 ft on 10/29/1937 |
| (30) 19.18 ft on 03/15/1986     | (73) 23.00 ft on 04/27/1937 |
| (31) 44.22 ft on 11/05/1985     | (74) 34.20 ft on 03/18/1936 |
| (32) 16.20 ft on 06/01/1985     | (75) 16.10 ft on 02/26/1936 |
| (33) 18.63 ft on 02/15/1984     | (76) 17.00 ft on 08/24/1933 |
| (34) 16.71 ft on 04/25/1983     | (77) 17.88 ft on 05/12/1932 |
| (35) 16.55 ft on 03/21/1982     | (78) 20.40 ft on 02/04/1932 |
| (36) 16.07 ft on 05/01/1980     | (79) 15.27 ft on 11/19/1929 |
| (37) 19.17 ft on 02/26/1979     | (80) 16.33 ft on 10/23/1929 |
| (38) 15.69 ft on 03/27/1978     | (81) 19.13 ft on 04/17/1929 |
| (39) 18.10 ft on 03/15/1978     | (82) 18.40 ft on 04/21/1901 |
| (40) 17.21 ft on 01/27/1978     |                             |
| (41) 16.58 ft on 04/06/1977     |                             |
| (42) 23.42 ft on 10/10/1976     |                             |
| (43) 16.75 ft on 01/01/1976     |                             |

**(P):** Preliminary values subject to further review.

The Potomac River makes up a portion of Hampshire County's northern border with Allegheny County Maryland. The North Fork of the Potomac River is flood controlled by Jennings Randolph Dam which is an U.S. Army Corps of Engineers controlled impoundment. This alleviates a great deal of flooding that would normally be incurred should the river not have flood control measures installed. The one problem that is created by the North Fork of the Potomac River is backwater flooding the community of GreenSpring, West Virginia. Greenspring Run floods this community due to the fact that water backs up from the North Fork of the Potomac River. Hampshire County must consider the catastrophic impacts that would devastate the valley should a dam failure occur at the Jennings Randolph or Savage River Dams. The North Fork of the Potomac is monitored by a gauge in Cumberland, Maryland. The Potomac River is monitored by a river gauge located in Paw Paw, West Virginia; this community is located in Morgan County. Typically the Paw Paw gauge is utilized for planning for flooding events in Hampshire County. This gauge has a major flood height of 32 feet, moderate at 28 feet, flood stage at 25 feet, and action stage at 22.5 feet. Since 1928 this gauge has recorded thirty-six (36) events at or just below flood stage, the highest being a height of 54 feet recorded on 03/18/1936.

**Historic Crests for the Potomac  
At Paw Paw**

- (1) 54.00 ft on 03/18/1936
- (2) 53.58 ft on 11/05/1985
- (3) 45.00 ft on 06/01/1889
- (4) 45.00 ft on 11/24/1877
- (5) 43.50 ft on 03/29/1924
- (6) 43.45 ft on 09/07/1996
- (7) 40.86 ft on 01/20/1996
- (8) 38.36 ft on 10/16/1942
- (9) 35.35 ft on 08/19/1955
- (10) 33.91 ft on 06/19/1949
- (11) 32.24 ft on 10/16/1954
- (12) 31.48 ft on 03/20/1963
- (13) 31.40 ft on 05/01/1928
- (14) 30.62 ft on 04/17/1993
- (15) 30.52 ft on 10/10/1976
- (16) 30.24 ft on 03/08/1967
- (17) 29.13 ft on 02/26/1979
- (18) 28.83 ft on 06/23/1972
- (19) 28.67 ft on 05/19/2011

- (20) 28.27 ft on 05/09/1960
- (21) 28.20 ft on 02/04/1939
- (22) 27.91 ft on 09/20/2003
- (23) 27.86 ft on 03/20/1986
- (24) 27.66 ft on 03/20/1975
- (25) 27.54 ft on 02/15/1984
- (26) 26.98 ft on 05/23/1942
- (27) 26.52 ft on 12/30/1942
- (28) 26.43 ft on 03/15/1978
- (29) 26.41 ft on 12/28/1973
- (30) 25.93 ft on 04/17/1987
- (31) 25.87 ft on 06/14/1951
- (32) 25.70 ft on 04/30/1964
- (33) 25.36 ft on 03/31/1960
- (34) 25.08 ft on 04/25/1983
- (35) 25.06 ft on 03/02/1954
- (36) 24.81 ft on 03/11/2011

**Recent Crests**

- (1) 28.67 ft on 05/19/2011
- (2) 24.81 ft on 03/11/2011
- (3) 27.91 ft on 09/20/2003
- (4) 43.45 ft on 09/07/1996
- (5) 40.86 ft on 01/20/1996
- (6) 30.62 ft on 04/17/1993
- (7) 25.93 ft on 04/17/1987
- (8) 27.86 ft on 03/20/1986
- (9) 53.58 ft on 11/05/1985
- (10) 27.54 ft on 02/15/1984
- (11) 25.08 ft on 04/25/1983
- (12) 29.13 ft on 02/26/1979
- (13) 26.43 ft on 03/15/1978
- (14) 30.52 ft on 10/10/1976
- (15) 27.66 ft on 03/20/1975
- (16) 26.41 ft on 12/28/1973
- (17) 28.83 ft on 06/23/1972

- (18) 30.24 ft on 03/08/1967
- (19) 25.70 ft on 04/30/1964
- (20) 31.48 ft on 03/20/1963
- (21) 28.27 ft on 05/09/1960
- (22) 25.36 ft on 03/31/1960
- (23) 35.35 ft on 08/19/1955
- (24) 32.24 ft on 10/16/1954
- (25) 25.06 ft on 03/02/1954
- (26) 25.87 ft on 06/14/1951
- (27) 33.91 ft on 06/19/1949
- (28) 26.52 ft on 12/30/1942
- (29) 38.36 ft on 10/16/1942
- (30) 26.98 ft on 05/23/1942
- (31) 28.20 ft on 02/04/1939
- (32) 54.00 ft on 03/18/1936
- (33) 31.40 ft on 05/01/1928
- (34) 43.50 ft on 03/29/1924
- (35) 45.00 ft on 06/01/1889

(36) 45.00 ft on 11/24/1877

The Cacapon River runs through the Town of Capon Bridge. The river transects the County from south to north. There is a river gauge in the community of Great Cacapon in Morgan County; at this site which is down river from Hampshire County the major flood stage is 20 feet, moderate is 16 feet, flood stage is 9 feet, and action stage is 7 feet. There is no crest data for this gauge.

There are numerous stream gauges on different streams that are utilized to predict and monitor flooding potential in Hampshire County. There is the problem of no gauges on smaller drainages of North River, the Little Cacapon, Mill Creek, and Green Spring Run, this hinders predicting flooding events and when to evacuate areas.

## 2.5 Repetitive Loss Area

### A. South Branch River (Coleman Farm, River Rat, Blue Beach, Wapocoma)

The Repetitive Loss Area located near the South Branch of the Potomac River experience these losses due to development occurring too close to the river bank itself. Development is often located in areas considered floodway or areas that would be floodway should a detailed study occur. Most of these structures are pre-FIRM and seasonal in nature with no mortgage.

Resolution of the repetitive losses could be resolved through relocation or demolition; however, due to the majority of the structures nature, seasonal use, owners are reluctant to pursue grants or invest additional monies to retrofit. The close proximity to the river bank is also what makes the location desirable, making relocation problematic.

### B. Cacapon River (Raging River, Hooks Mill, Bubbling Springs, Kilgore, The Crossings)

The Repetitive Loss Areas located along the Cacapon River experience losses due to riverine flooding occurring from development in high hazard areas. Development is often in floodway areas or what would be a floodway if a detailed study would be performed. Most of these structures are pre-FIRM in nature.

Resolution of the repetitive losses could be resolved through relocation, demolition, or retrofitting. Demolition is unattractive due to the proximity in nature to the river and the opportunities it provides for recreation. Demolition also hurts the tax base in the County by removing taxable structures. Relocation is also unattractive to the owners because of the recreational opportunities the river provides. Retrofitting may be considered if funding is available, however; most owners are unwilling to spend additional dollars on second homes that are recreational in use.

### C. North River (Hanging Rocks)

The Repetitive Loss Area located near North River experiences losses due to riverine flooding. It is located in a high hazard area and in close proximity to the river bank, making it prime for damage due to flooding. The structure in question is also a pre-FIRM building.



The property owners would have to be willing to apply for grants for retrofitting or relocation, relocation being the most desirable mitigation measure.

#### D. Critton Owl Hollow Road

The Repetitive Loss Area is outside of a mapped Special Flood Hazard Area. The structure was built in 1975 and experiences sheet flow from adjacent open fields which sit on a slope.

Losses could be mitigated through stormwater drainage plans that direct flows around the structure but not onto adjoining properties, which do not experience the same flooding issues.

#### E. North Branch of the Potomac River (Greenspring, confluence with Green Spring Run)

This Repetitive Loss Area experiences flooding due to its close proximity to the North Branch of the Potomac. Multiple factors come into play for this pre-FIRM community. One is the CSX railroad that acts as a levee for the town of Greenspring. This increases flood water height in this area as opposed to allowing it to distribute over the natural flat low lying areas.

Resolution could be achieved in this area through demolition, relocation, or retrofitting. Many homes in this area are rental properties. Landlords are typically unwilling to retrofit or demolish. The additional investment or demolishment would make the business plan unfeasible. Relocation would be challenging due to the conditions present.

#### F. Green Spring Run (Greenspring)

The Repetitive Loss Areas located near Green Spring Run receive overflow and backwater from Green Spring Run. This is caused by its confluence with the North Branch of the Potomac and the CSX railroad. Flood water heights back up the run from the North Branch and prohibit the run from flowing through an underpass in the railroad. This increases flood water heights throughout the town.

Repetitive losses could be mitigated through retrofitting, relocation, or demolition. This area has had some mitigation in the past with minor success. Current ownership of the majority of the properties is rental in nature and makes the profitability of the owners' business plans challenging. Retrofitting would consume funds from the profit margin, demolishing would destroy the business altogether. The older pre-FIRM structures would be hard to relocate.

### 3.0 Development in the Special Flood Hazard Areas:

Development in the Special Flood Hazard Areas in Hampshire County is mainly recreational in nature. Most development in the past decade has been by the way of recreational vehicles and accessory structures for those recreational vehicles by way of pavilions, small sheds, or decks. This is actually a positive in the fact that these are small in nature and have no adverse impact on the Special Flood Hazard Area. They are required to obtain a permit, as both Federal Code of Regulations and the Hampshire County Floodplain Ordinance require a permit for all development. Development can be defined as in 44 Code of Federal Regulations as any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or

storage of equipment or materials. Recreational Vehicles do not require a permit unless they are installed per a manufactured home.

A 2017 report shows parcels that are affected by Special Flood Hazard Area (SFHA) consists of 20,433.41 acres. These parcels are valued at \$109,182,700.00 with \$57,381,900.00 being building values. This proves that Hampshire County is extremely vulnerable to major losses that could result from flooding. These parcels may not be entirely in the Special Flood Hazard Area but structures may be positioned just beyond the limits of the SFHA which means they may still be extremely at risk.

#### 4.0 Damage from previous flood events.

The worst flood in Hampshire County history was the November 05, 1985, a recorded height of 44.22 feet at the Springfield river gauge. There are accounts of other devastating floods to the area. An account recorded in the Wednesday, September 30, 1936 edition of the Hampshire Review mentions a flood in the spring of 1748. Another flood was mentioned in an article in the Hampshire Review published March 18, 1936 that happened in 1877 or 1878 (as a result of a hurricane that came ashore in South Carolina and tracked up the coast), that was the previous flood of record, until the March 18, 1936 flood which recorded a height of 34.20 feet at the Springfield river gauge. Reports of rainfall totals of five inches were recorded with the 1936 flood. Damage totals for the replacement of three bridges and the South Branch Valley Railroad totaled approximately \$550,000.00 for the 1936 flood. While vague reports are available at best, it seems the 1748, 1877, and 1936 floods affected the entire county, whereas the 1985 flood seemed to damage mainly the South Branch Valley as the worst of the torrential rain fell in the headwater area, some areas receiving ten or more inches within the six day period.

The November 5<sup>th</sup>, 1985 flood, being a more recent flood and considered the flood of record was documented substantially more than the previous flood. Hampshire County received Small Business Loans (SBA) for homes in the amount of \$1,892,300 for 55 homes and \$957,000 for 11 businesses. FEMA assisted 122 in temporary housing. There was also 39 State Flood Assistance Program Grants in the amount of \$78, 834.97. An amount of \$259,073.99 was awarded in individual family grants. There were additional monies provided by FEMA to Hampshire County in the amount of \$145,051, Romney received \$79,300, Romney Fire Company received \$4,500, and the Springfield Fire company received \$3,313. This totals \$3,419,372.80 if funds that were received by Hampshire County residents and governmental entities, this does not include the amounts that went to state agencies for bridge, road, railroad, and other repairs.

The January 1996 flood also impacted the area; this flood was caused by snow accumulation followed by heavy rain. In Hampshire county 5 homes were destroyed with 15 damaged. Multiple roads and one bridge also sustained damage. The Springfield area was also without water for a sustained time. The water outage was alleviated by a National Guard 3,500 gallon tanker.

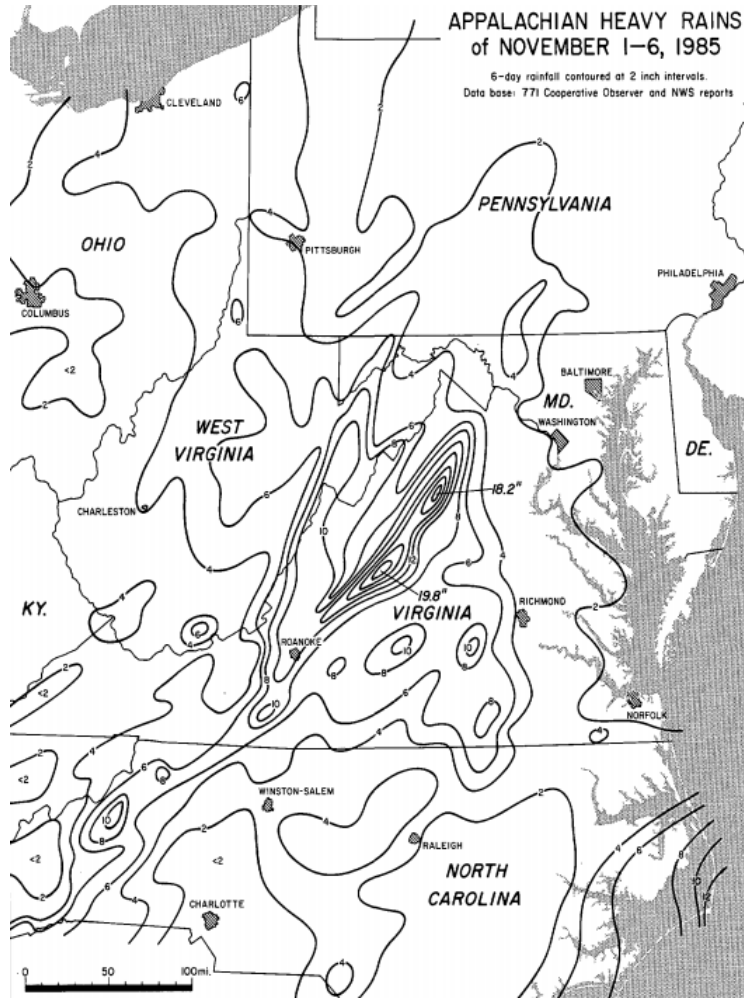
The September 1996 flood resulted from Hurricane Fran which saturated the area with 4 to 6 inches of rain. This resulted in greater damage to Hampshire County as 240 homes were damaged (40 of which were considered major damage), 13 single family homes destroyed, and 108 mobile homes destroyed.

There have also been many localized events resulting from localized heavy rain events and poor drainage maintenance. One instance of localized flooding occurred in the summer of 2016 when a severe thunderstorm developed in the South Little Cacapon watershed area and inundated roads, washed out ditches, and caused damages for farm fencing. Luckily no losses or damages occurred to homes or other structures during this event.

This leads to flooding being the number one priority for hazard planning, regulation, mitigation, and concern for Hampshire County. However, in properly planning for the impacts of flooding one must also consider dam failure, windstorm, and landslide/mudslide. Dam failure must be considered due to the portions of Hampshire County sitting in the inundation area of Jennings Randolph, Savage River, and Mount Storm impoundments. Windstorms have the potential to exacerbate flooding due to debris buildup in water channels, this in turn has the potential to create a damming effect which in turn could create inundation of flood water behind the debris dam or downstream when the debris dam bursts. An example of this is the derecho that occurred in June of 2012 across West Virginia. Landslides/mudslides are similar to windstorm debris in relation to their impacts on flooding. The potential for a slide to inhibit the natural flow of the water channels causing inundation behind the slide or below should the slide erode and allow substantial amounts of water to pass at once. Hampshire is considered as having a high potential for these types of slides; however we have only experienced minor slides, typically impacting roads where cuts have been made during construction. Hampshire County is heavily forested and consideration of this should be taken into the planning process as forested area; one, absorbs more rainfall; and two, tree root systems stabilize the soil to prevent erosion.

# APPALACHIAN HEAVY RAINS of NOVEMBER 1-6, 1985

6-day rainfall contoured at 2 inch intervals.  
Data base: 771 Cooperative Observer and NWS reports



## 5.0 Recommended Activities

### 5.1 Mitigation Programs for Re-location and Elevation

- A. Re-location would be a viable mitigation strategy for structures located in the Special Flood Hazard Areas (SFHA). Hampshire County is fortunate in the terrain present does provide one the opportunity to re-locate to higher ground, outside the SFHA. This would be the best scenario for you are removing the entire risk of loss of life and property from the SFHA, remember, property outside the SFHA still has the potential for flood losses due to localized flooding, development of surrounding properties, and poor drainage maintenance practices.
- B. Elevation would be the second choice for mitigation of losses incurred due to flooding. This is the least likely alternative due to the risk of loss of life and property still exists at a higher rate compared to re-location. This alternative may be attractive to the numerous seasonal homes located along the major drains for their advantageous access to recreational opportunities provided to them by the rivers, thusly making re-location an unattractive resolution.
- C. We must also remember that many of these are pre-firm structures that were also built prior to Hampshire County's enforcement of building codes. Re-location or elevation may require substantial upgrades to structural components of the homes. There has been few homes constructed in the SFHA since the adoption of both the Hampshire County Floodplain Ordinance and the Hampshire County Building Code.

### 5.2 Demolition

- A. Demolition is not a recommended activity but needs to be mentioned. Most structures in the Repetitive Loss areas are either seasonal in nature or rental properties. The majority of seasonal structures has been handed down through generations of use and therefore has sentimental value to the owners. This added with more stringent regulation regarding development in the SFHA makes demolition an unattractive alternative. Likewise, the loss of revenue for landlords in the demolition of a rental property makes demolition unfeasible. It should also be mentioned that through demolition the county government loses tax monies which are vital for operation, especially in an area struggling to increase employment and standards of living.

### 5.3 Open Space

- A. Farmland preservation could be utilized for the SFHA. Preference could be given to farmland easements located in the SFHA, which typically have fertile soils desirable for agricultural activities. This would provide operating capital to the farm while also preserving through deed restriction the use of the land.
- B. The Forest Legacy program could also be utilized for preserving woodlands in the SFHA. This would ensure property in the SFHA would be reserved for the natural beneficial functions of the floodplain through deed restrictions.

- C. Subdivision/Land Use Ordinance amendments could be utilized in numerous ways. Developers could be granted special provisions for the creation of open space in new developments. Provisions could consist of variances for home densities outside the SFHA or ensuring alternative building sites are available outside the SFHA. Setbacks could also be utilized to ensure development occurs in the best possible manner.

#### 5.4 Watershed Management Plan

- A. A watershed management plan should be investigated in cooperation with the West Virginia Department of Environmental Protection, Region 8 Planning and Development Council, The Potomac Valley Conservation District and Grant, Pendleton, Hardy, Mineral, & Hampshire Counties.

#### 5.5 Flood Warning Dissemination System

- A. The Hampshire County Office of Emergency Services and 911 Center has the capability through Everbridge Public Notification to contact the general public through land line and cellular service in the affected areas of eminent dangers. This can be accomplished through a data base of phone numbers or every cell phone within the coverage area of a tower. Confirmation is also received of the notification.
- B. There is also the possibility of initiating Disaster Alert Tones from local fire whistles.
- C. The public can monitor and be notified by the National Oceanic at Atmospheric Administration (NOAA) Weather Radio for special statements.
- D. Social media is also notified through alerts and post by the Hampshire County Office of Emergency Services and 911 Center.

#### 5.6 Property Owner protection measures

- A. The Hampshire County Subdivision and Land Development Ordinance as amended on July 1, 2016 require in Section 6.9 Recreational Vehicle Parks or Campground Standards in subsection k.; Floodplain, any campers in the Special Flood Hazard Area will be provided with information detailing: Risks, Evacuation Procedure, and Important Contacts.

#### 5.7 Storm Water Management

- A. Hampshire County adopted a Stormwater Management Ordinance on March 14, 2006. This ordinance is focused on commercial, non-agricultural development that results in impervious areas created larger than 3000 square feet.

#### 6.0 Deficiencies in Flood Preparedness Plans

- A. Hampshire County has an Emergency Preparedness Plan. The only deficiency that could be foreseen is the actual dissemination of information to the public. This is hard to ensure that everyone has been notified in the affected area. This leaves the slightest chance that someone will not be notified in the event of an eminent flood.

## 7.0 Flood Response Plan

### 7.1 Introduction

This section is dedicated to the roles and responsibilities of Hampshire County Officials pre, during, and post flood event.

### 7.2 Pre-flood

**Highways:** The West Virginia Department of Highways will plan and prepare for road closures according to the conditions expected. They will also perform maintenance on roads and ditches to mitigate the damage occurred from rain events. The WV DOH also performs some stream stabilization projects through their road maintenance projects.

The Hampshire County Planning Office will administer the Hampshire County Floodplain Ordinance, Stormwater Ordinance, and cooperates with all involved entities with the Hampshire County Floodplain Management Plan and Hazard Mitigation Plan.

The Hampshire County Department of Homeland Security and Emergency Management and Hampshire County 911 oversee the Continuity of Operations Plan and plans and operates emergency exercise drills for better preparedness.

Hampshire County Fire Departments prepares and practices emergency exercises in preparation for rescue and evacuation.

The City of Romney Water Treatment Plant which supplies most of the water for public systems in Hampshire County would have to pump as much water as possible to fill any storage tanks. If a major flood is imminent then they would have to seal a man hole at the intake and pull an air compressor and antenna for telemetry.

Central Hampshire Public Service District would pump additional water to fill tanks, utilizing the Romney Water System and Greenspring System.

Capon Bridge would try and fill tanks for water supply should the spring become damaged during the event.

### 7.3 During a Flooding Event

Hampshire County Department of Homeland Security and Emergency Management, Fire Departments, and Law Enforcement will coordinate evacuations.

Hampshire County Department of Homeland Security and Emergency Management will coordinate with West Virginia Department of Homeland Security and Emergency Management for any assistance needed.

The Hampshire County 911 Center will robo call affected areas for mandatory and voluntary evacuations through its Integrated Alert Warning System. This will also notify any cellular phone located within the area. This will be performed just prior to and throughout the event to ensure as many residents as possible reach safe areas.

Hampshire County Department of Homeland Security and Emergency Management will enact its Emergency Response Plan and Continuity of Operations Plan.

#### 7.4 Post Flood

The Hampshire County Planning Office will oversee and coordinate completion of damage assessments.

The Hampshire County Planning Office and Hampshire County Department of Homeland Security and Emergency Management will apply for grants and reimbursements.

The Hampshire County Planning Office will oversee the reconstruction/demolition of effected structures.

The Hampshire County Planning Office will oversee permit applications for all development. This may require a temporary moratorium while damage assessments are being completed.

The West Virginia Department of Highways will repair/replace damaged roads and bridges.

The West Virginia National Guard will assist with clean-up of flood debris.

The Hampshire County Department of Homeland Security and Emergency Management will oversee shelters and distribution of relief efforts.

Augusta Church of Christ, The American Red Cross and multiple other agencies will be contacted and activated to ease the burden of day to day life through utilization of shelters, temporary housing needs, food, water, and other necessities to sustain health, safety, and welfare of residents.

Law enforcement will secure affected areas to prevent further impacts on life and safety.



## 7.5 At Risk Roads and Railroads

Hampshire County's terrain helps in the evacuation of citizens located in harm's way due to hazards created by flood waters inundating low lying property. In many areas there are areas adjacent to the Special Flood Hazard Areas that can be accessed by foot, if not by low clearance vehicles that are of higher, safer terrain. There are a few State and County Roads (all are maintained by the West Virginia Department of Highways) that are prone to inundation by flood waters.

Road closures will be determined by cooperation between Hampshire County Office of Emergency Services and 911, the West Virginia State Police, and West Virginia Department of Highways. The Hampshire County Sheriff's Office and Fire and Rescue may also close roads due to inundation.

It should be noted that during a major county wide event the county could be cut off from all outside sources by major road access. This would make disaster recovery extremely difficult and costly! History shows the potential of this with the closing of the US Route 50 Bridge over the South Branch of the Potomac during the November 1985 event. The low water toll bridge over the Potomac River is often closed even during minor flooding events, this bridge connects Green Spring, West Virginia to Oldtown, Maryland.

### A. Potomac River – South Branch of the Potomac River Areas

1. US Route 50 - Northwest Turnpike  
Area of Romney
2. State Route 28 - Cumberland Road  
Areas of Wapocomo, Blues Beach, & Springfield
3. County Route 8 - South Branch River Road
4. County Route 1 – Green Spring Valley Road
5. County Route 3 – Slanesville Pike  
Area of Milleson's Mill
6. County Route 10 – Grassy Lick Road
7. County Route 1/1 - Campbell Road
8. County Route 1/1 – Arnold Sticklely Road
9. County Route 28/6 – Graces Cabin Road
10. County Route 3/7 – Clarence Taylor Road
11. County Route 50/4 – Foxes Hollow Road
12. County Route 28/5 – Camp Cliffside Road
13. CSX Main Railroad
14. South Branch Valley Railroad

B. Cacapon River and Tributaries including North River

1. US Route 50 – Northwest Turnpike  
Areas of Smokey Hollow, Capon Bridge, and Hanging Rock
2. State Route 29 N – Bloomery Pike  
Area of the Forks of the Cacapon
3. State Route 29 S – Delray Road  
Areas of Delray & Rio
4. State Route 259 – Carpers Pike  
Area from Capon Lake to Yellow Springs
5. County Route 15 – Cold Stream Road  
Areas of the Old Ford and North River Mills
6. County Route 6 – Smokey Hollow Road
7. County Route 14 – Capon River Road
8. County Route 16 – Capon Springs Road
9. County Route 23/10 – Back Creek Road
10. County Route 23/3 – Kump Road
11. County Route 50/25 – Dillon’s Run Road

C. Little Cacapon River

1. US Route 50 - Northwest Turnpike  
Area of Frye’s Flat
  2. County Route 7 – Ford Hill Road
  3. County Route 12 – South Fork Little Cacapon Road
  4. County Route 3 – Slanesville Pike  
Area of Higginville
  5. County Route 50/9 – Little Cacapon Road
  6. CSX Main Railroad
- There are numerous roads on the Little Cacapon River that utilize fords for traversing the river – Turn Around - Don’t Drown must be strongly adhered too during these events!

D. Mill Creek Drainage Area

1. US Route 50 – Northwest Turnpike  
Area of Junction and Mechanicsburg Gap
2. Route 220 – Purgitsville Pike  
Area between Junction to Purgitsville

## 7.6 Critical Facilities

Hampshire County has planned well as many currently active critical facilities are located out of the Special Flood Hazard Area.

Office of Emergency Services and 911 Center:	Safe
Law Enforcement:	
West Virginia State Police Barracks:	Safe
Hampshire County Sheriff's Office:	
Romney:	Safe
Capon Bridge:	Safe
Fire and Emergency Services:	
Romney Fire:	Safe
Romney Rescue Squad:	Safe
Augusta Fire:	Safe
Augusta Rescue Squad:	Safe
Capon Bridge Fire:	Moderate Risk
Capon Bridge Rescue Squad:	At Risk
Slanesville Fire:	Safe
Springfield Fire:	At Risk
Springfield Fire Green Spring Sub:	Moderate Risk
Springfield Rescue Squad:	Safe
Levels Fire:	Safe
Capon Springs:	Moderate Risk
North River Fire:	High Risk
North River Fire Delray Sub:	Safe
Hampshire County Health Department:	At Risk
Hampshire County Planning Office:	Safe
Hampshire County Schools:	
Hampshire High School:	Safe
Romney Middle School:	Safe
Capon Bridge Middle School:	Safe
Capon Bridge Elementary:	Safe
Slanesville Elementary:	Safe
John J. Cornwell Elementary:	Safe
Romney Elementary:	Safe
Springfield Elementary:	Safe
Augusta Church of Christ (Evacuation Center):	Safe
US Army Reserve Center:	High Risk

Water and Wastewater:

Romney Water Plant:	Safe
Romney Wastewater Plant:	Safe
Capon Bridge Water Plant:	At Risk
Capon Bridge Wastewater Plant:	At Risk
Green Spring Wastewater Plant:	Moderate Risk
Green Spring Water Plant:	Moderate Risk
Central Hampshire Wastewater Plant:	High Risk
Hampshire County Economic Development:	High Risk

8.0 Dam failure Response Plan:

8.1 Introduction:

It is imperative that when addressing a flooding plan one takes into consideration dam failure as it could; one be the reason for the flood event or two help

Hampshire County does not have any substantial impoundments within its boundaries; there is however numerous smaller private impoundments that have to potential to cause localized flooding on a smaller scale. Three major dams are located in the State of Maryland that will significantly affect Hampshire County should one or all experience a failure. Dam failure should be considered a medium priority for Hampshire County and could have a significant impact. The Office of Emergency Services Director belongs to the Upper Potomac River Commission who does maintain a dam failure plan and the Maryland Emergency Management Agency monitors the dams.

Areas that would incur inundation by any of the major dams would be the communities of Green Spring, Okonoko, and Little Cacapon. Green Spring would incur the most losses including the potential loss of the low water toll bridge leading to Maryland. The Green Spring area may also lose water and sewer availability. There is also the potential loss of a Springfield Fire Company Sub-station, depending on the level of inundation and flow velocities.

Neither Romney nor Capon Bridge would experience losses due to any of the mayor dams failing.

8.2 Pre-Dam Failure

Highways: The West Virginia Department of Highways will plan and prepare for road closures according to the conditions expected.

The Hampshire County Planning Office will administer the Hampshire County Floodplain Ordinance, Stormwater Ordinance, and cooperates with all involved entities with the Hampshire County Floodplain Management Plan and Hazard Mitigation Plan.

The Hampshire County Department of Homeland Security and Emergency Management and Hampshire County 911 oversee the Continuity of Operations Plan and plans and operates emergency exercise drills for better preparedness.

Hampshire County Fire Departments prepares and practices emergency exercises in preparation for rescue and evacuation.

Central Hampshire Public Service District will try and maintain tanks to ensure water supplies to those not affected for 24 hours.

Hampshire County could investigate an impoundment maintenance ordinance requiring property owners to maintain headwalls and spillways on private impoundments.

### 8.3 During a Dam Failure Event

Hampshire County Department of Homeland Security and Emergency Management, Fire Departments, and Law Enforcement will coordinate evacuations.

Hampshire County Department of Homeland Security and Emergency Management will coordinate with West Virginia Department of Homeland Security and Emergency Management for any assistance needed.

The Hampshire County 911 Center will robo call affected areas for mandatory and voluntary evacuations through its Integrated Alert Warning System. This will also notify any cellular phone located within the area. This will be performed just prior to and throughout the event to ensure as many residents as possible reach safe areas.

Hampshire County Department of Homeland Security and Emergency Management will enact its Emergency Response Plan and Continuity of Operations Plan.

### 8.4 Post Dam Failure

The Hampshire County Planning Office will oversee and coordinate completion of damage assessments.

The Hampshire County Planning Office and Hampshire County Department of Homeland Security and Emergency Management will apply for grants and reimbursements.

The Hampshire County Planning Office will oversee the reconstruction/demolition of effected structures.

The Hampshire County Planning Office will oversee permit applications for all development. This may require a temporary moratorium while damage assessments are being completed.

The West Virginia Department of Highways will repair/replace damaged roads and bridges.

The West Virginia National Guard will assist with clean-up of flood debris.

The Hampshire County Department of Homeland Security and Emergency Management will oversee shelters and distribution of relief efforts.

Augusta Church of Christ, The American Red Cross and multiple other agencies will be contacted and activated to ease the burden of day to day life through utilization of shelters, temporary housing needs, food, water, and other necessities to sustain health, safety, and welfare of residents.

Law enforcement will secure affected areas to prevent further impacts on life and safety.

8.5 At Risk Roads and Railroads

Potomac River:

- 1. County Route 1 – Greenspring Valley Road
- 2. County Route 1/1 – Arnold Stickley Road
- 3. County Route 2/7 – Okonoko Road
- 4. Buck Road

CSX Main Railroad  
South Branch Valley Railroad

8.6 Critical Facilities

Hampshire County has planned well as many currently active critical facilities are located out of the Special Flood Hazard Area.

Office of Emergency Services and 911 Center: Safe

Law Enforcement:

West Virginia State Police Barracks: Safe

Hampshire County Sheriff’s Office:

Romney: Safe

Capon Bridge: Safe

Fire and Emergency Services:

Romney Fire: Safe

Romney Rescue Squad: Safe

Augusta Fire: Safe

Augusta Rescue Squad: Safe

Capon Bridge Fire: Safe

Capon Bridge Rescue Squad: Safe

Slanesville Fire: Safe

Springfield Fire: Safe

Springfield Fire Green Spring Sub: At Risk

Springfield Rescue Squad: Safe

Levels Fire:	Safe
Capon Springs:	Safe
North River Fire:	Safe
North River Fire Delray Sub:	Safe
Hampshire County Health Department:	Safe
Hampshire County Planning Office:	Safe
Hampshire County Schools:	
Hampshire High School:	Safe
Romney Middle School:	Safe
Capon Bridge Middle School:	Safe
Capon Bridge Elementary:	Safe
Slanesville Elementary:	Safe
John J. Cornwell Elementary:	Safe
Romney Elementary:	Safe
Springfield Elementary:	Safe
Augusta Church of Christ (Evacuation Center):	Safe
US Army Reserve Center:	Safe
Water and Wastewater:	
Romney Water Plant:	Safe
Romney Wastewater Plant:	Safe
Capon Bridge Water Plant:	Safe
Capon Bridge Wastewater Plant:	Safe
Green Spring Wastewater Plant:	High Risk
Green Spring Water Plant:	Moderate Risk
Central Hampshire Wastewater Plant:	Safe
Hampshire County Economic Development:	Safe

## 9.0 Wind Storm

### 9.1 Introduction

Windstorm is addressed due to the fact that it has the low potential to affect the Special Flood Hazard Area with debris jams that could escalate the impacts from flooding. Wind typically will be highest along the high slopes and hilltops. There is the potential for straight line winds, derecho winds, and tornados. Wind could impact electrical and telephone service, which in turn could affect large populations. This could become extremely burdensome in winter weather where large numbers of homes could potentially be without electric to heat homes. This in turn would initiate a response to open shelters for warming, food, and shelter.

Windstorm damage is hard to estimate, typically facilities and infrastructure at higher elevations would be considered at greatest risk, however straight line winds could occur anywhere

affecting even lower elevations and valleys. Tornadoes has historically been on ridge tops as the mountainous terrain somewhat protects the valleys.

## 9.2 Pre-Wind

Infrastructure such as communication towers should be designed to withstand greater design loads than minimum requirements.

Dead trees and snags should be removed if endangering structures and along highways. This should be performed in cooperation with the West Virginia Department of Highways and property owners along state maintained roads. Property owners should be made aware through a public outreach program how important private right-of-way maintenance should be given the loss of access by emergency services during a wind event due to down trees and debris.

Utilities should be encouraged when possible to install underground to mitigate damage incurred during a wind event. Above ground utilities should have a comprehensive and active maintenance plan to ensure rights-of-ways are clear of woody brush and trees that may disrupt service during or post event.

Debris that could become hazardous should be secured as to not become air born.

Citizens should be informed how hazardous and destructive trees and other hazards could be in close proximity to structures, becoming costly to repair, demo, or rebuilding after a wind event.

Drainage maintenance is also essential, even small wind events can create debris that can dam small tributaries and clog culverts creating to potential for flooding. Often wind events in the form of thunderstorms are accompanied by torrential rains.

## 9.3 During a wind event:

It is extremely important that only life threatening emergencies be responded to during a wind event!!!

High profile vehicles should find protection from wind due to the potential for roll over.

Citizens should stay indoors; wind born debris can cause serious bodily injury. In the case of a hurricane or tornado people should shelter in place and go to a basement or storm shelter preferably. If a basement or storm shelter is not available an interior room (a bathtub or interior door frame with structural support may offer the best protection from building collapse).

Hampshire County Office of Emergency Service will begin to assess needs according to reports being received to mobilize a response.



Fire responders and Power Company should be vigilant as downed energized lines may come in contact with combustible material. High winds could lead to potentially catastrophic fire hazards.

9.4 Post-Wind Event:

The West Virginia Department of Highways will clear debris from state maintained roads. This may be performed in cooperation with Fire and the West Virginia National Guard depending on the size of the event and potential for disaster declaration.

Residents and private contractors will clear debris from private roads.

Utility companies will clear and repair infrastructure such as electric and communication lines.

Homeowners, contractors and volunteers will secure damaged buildings with cooperation of the Hampshire County Planning Office to prevent greater losses incurred by exposure to elements and vandalism.

Law enforcement will secure affected areas to prevent further impacts on life and safety.

9.5 At risk roads and railroads:

All roads and railroads shall be considered at a high level of risk due to the nature of windstorms and the potential for damage in all areas.

9.6 Critical Facilities at risk:

Office of Emergency Services and 911 Center:	At Risk
Law Enforcement:	
West Virginia State Police Barracks:	Moderate Risk
Hampshire County Sheriff’s Office:	
Romney:	Moderate Risk
Capon Bridge:	Moderate Risk
Fire and Emergency Services:	
Romney Fire:	Moderate Risk
Romney Rescue Squad:	Moderate Risk
Augusta Fire:	Moderate Risk
Augusta Rescue Squad:	Moderate Risk
Capon Bridge Fire:	Moderate Risk
Capon Bridge Rescue Squad:	Moderate Risk
Slanesville Fire:	Moderate Risk
Springfield Fire:	Moderate Risk
Springfield Fire Green Spring Sub:	Moderate Risk
Springfield Rescue Squad:	Moderate Risk

Levels Fire:	Moderate Risk
Capon Springs:	Moderate Risk
North River Fire:	Moderate Risk
North River Fire Delray Sub:	Moderate Risk
Hampshire County Health Department:	Moderate Risk
Hampshire County Planning Office:	Moderate Risk
Hampshire County Schools:	
Hampshire High School:	Moderate Risk
Romney Middle School:	Moderate Risk
Capon Bridge Middle School:	Moderate Risk
Capon Bridge Elementary:	Moderate Risk
Slanesville Elementary:	Moderate Risk
John J. Cornwell Elementary:	Moderate Risk
Romney Elementary:	Moderate Risk
Springfield Elementary:	Moderate Risk
Augusta Church of Christ (Evacuation Center):	Moderate Risk
US Army Reserve Center:	Moderate Risk
Water and Wastewater:	
Romney Water Plant:	Moderate Risk
Romney Wastewater Plant:	Moderate Risk
Capon Bridge Water Plant:	Moderate Risk
Capon Bridge Wastewater Plant:	Moderate Risk
Green Spring Wastewater Plant:	Moderate Risk
Green Spring Water Plant:	Moderate Risk
Central Hampshire Wastewater Plant:	Moderate Risk
Hampshire County Economic Development:	Moderate Risk
Communication Towers:	High Risk

## 10.0 Landslide/Mudslide

Landslide/Mudslide is addressed due to the terrain present in Hampshire County. The County has varying terrain that ranges from moderate (little to no grade) to steeply sloped. These areas of greater slope present the potential for a high susceptibility for slides to occur. Hampshire County has been fortunate that more of these have not occurred. The vast majority has been road cuts and those have been mitigated and remedied by the West Virginia Department of Highways. The high potential for slides could also exacerbate the potential for flooding.

### 10.1 Pre-Slide

Ensure through cooperation with the West Virginia Department of Environmental Protection that unstable soils are protected against erosion through best management practices.

Educate citizens on the importance of stabilizing highly erodible soils.

Ensure development occurring on venerable slopes is constructed in ways to mitigate the potential for slides.

Cooperate with The West Virginia Division of Forestry and the timber industry in the importance of stormwater runoff and the effects it could cause in relation to erosion, slides, and flooding.

Cooperate with the West Virginia Division of Highways about maintenance and construction of cuts and fills and the importance of soil stability.

### 10.2 During the Slide:

Slides may occur in many different ways: Which influence responses.

Immediate slide: This type may occur with little to no warning and last only a few seconds.

Very little can be done while the slide occurs from an emergency management standpoint. Response time, while at a minimum will still take longer than it takes for the slide to occur.

Prolonged slide: This type may occur over hours to weeks, slowly slipping.

Evacuation of people, possessions, even quite possibly homes may be possible.

Engineering design and mitigation may be possible from the standpoint of protecting vital infrastructure.

Roads may be closed to prevent accidents if the slide cannot be mitigated.

Excavation may be possible to reduce impacts of the slide.

Alternative routes could be pursued to avoid isolating affected populations.

10.3 Post Slide:

West Virginia Department of Highways and West Virginia National Guard may be activated to clear roads.

Private citizens and contractors may clear private roads after all clear is granted.

Utilities will be activated to clear and repair any affected utilities.

Damage assessments may be required for affected structures, with cooperation of the Hampshire County Assessor's Office and Hampshire County Planning Office.

Rivers and Streams, with the cooperation of The Army Corps of Engineers, West Virginia Department of Environmental Protection, West Virginia Department of Natural Resources, FEMA, and the Hampshire County Planning Office will be repaired if impacted to mitigate the possibility of flooding.

10.4 At Risk Roads:

All State maintained and private roads that involve cuts, fills, or adjacent to slopes may experience a slide.

10.5 Critical Facilities

Office of Emergency Services and 911 Center: Safe

Law Enforcement:

West Virginia State Police Barracks: Safe

Hampshire County Sheriff's Office:

Romney: Safe

Capon Bridge: Safe

Fire and Emergency Services:

Romney Fire: Moderate Risk

Romney Rescue Squad: Safe

Augusta Fire: Safe

Augusta Rescue Squad: Safe

Capon Bridge Fire: Safe

Capon Bridge Rescue Squad: Safe

Slanesville Fire: Safe

Springfield Fire: Safe

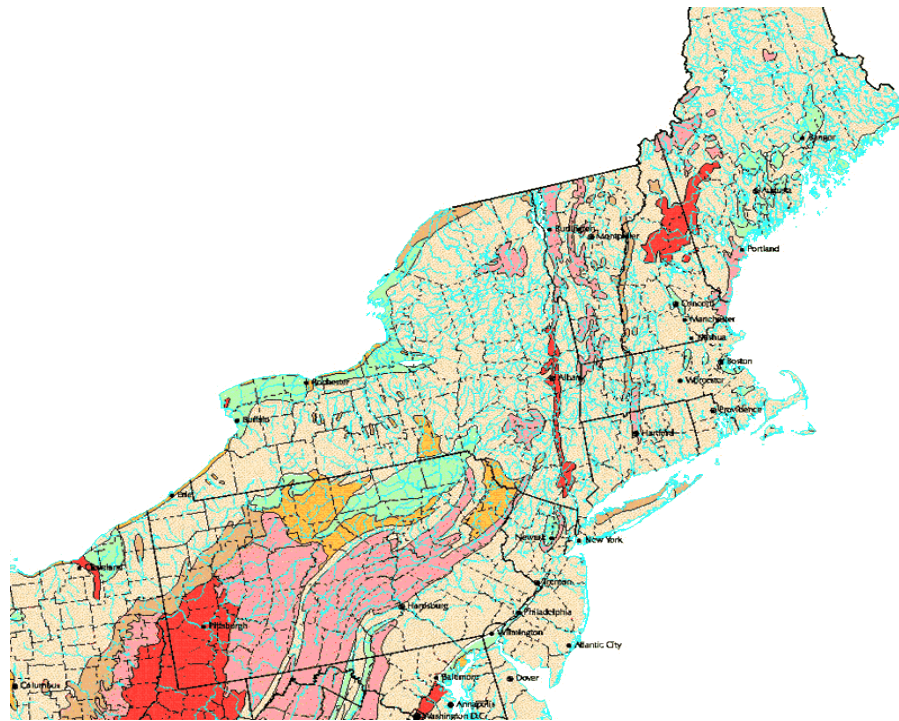
Springfield Fire Green Spring Sub: Safe

Springfield Rescue Squad: Safe

Levels Fire: Safe

Capon Springs: Moderate Risk

North River Fire:	Safe
North River Fire Delray Sub:	Safe
Hampshire County Health Department:	Safe
Hampshire County Planning Office:	Safe
Hampshire County Schools:	
Hampshire High School:	Safe
Romney Middle School:	Safe
Capon Bridge Middle School:	Safe
Capon Bridge Elementary:	Safe
Slanesville Elementary:	Safe
John J. Cornwell Elementary:	Safe
Romney Elementary:	Safe
Springfield Elementary:	Safe
Augusta Church of Christ (Evacuation Center):	Safe
US Army Reserve Center:	At Risk
Water and Wastewater:	
Romney Water Plant:	Safe
Romney Wastewater Plant:	Safe
Capon Bridge Water Plant:	At Risk
Capon Bridge Wastewater Plant:	Safe
Green Spring Wastewater Plant:	Safe
Green Spring Water Plant:	Moderate Risk
Central Hampshire Wastewater Plant:	At Risk
Hampshire County Economic Development:	At Risk



• **Landslide Incidence**



Low (less than 1.5% of area involved)



Moderate (1.5%-15% of area involved)



High (greater than 15% of area involved)



Moderate susceptibility/low incidence



High susceptibility/low incidence



High susceptibility/moderate incidence

**USGS Land Subsidence Map**

Implementation, Evaluation, and Revisions:

This plan shall be implemented upon adoption by the Hampshire County Commission.  
Evaluation shall be performed every five years; evaluation should also be performed should an event occur that would require alteration of this plan.  
Revisions shall occur at a maximum every five years.

Approved by Hampshire County Commission:

\_\_\_\_\_ Date

\_\_\_\_\_  
Robert Q. Hott, President, Hampshire County Commission

\_\_\_\_\_  
Attest: Eric Strite, Hampshire County, County Clerk

## APPENDIX 5 CITATIONS

- Center for Disease Control. (n.d.). *Climate change and extreme heat events*. Retrieved from <https://www.cdc.gov/climateandhealth/pubs/ClimateChangeandExtremeHeatEvents.pdf>
- Crimmins, A., Balbus, J., Gamble, L., Beard, C. B., Bell, J. E., Dodgen, D., ... Ziska, L. (2016). *The impacts of climate change on human health in the United States: a scientific assessment*. Retrieved from U.S. Global Change Research Program website: <https://health2016.globalchange.gov/downloads#climate-change-and-human-health>
- Clements, B., & Casani, J. A. (2009). *Disasters and public health: Planning and response*. Burlington, MA: Butterworth-Heinemann/Elsevier.
- Coppola, D. P. (2015). *Introduction to international disaster management* (3rd ed.). Waltham, MA: Butterworth-Heinemann.
- Division of Forestry. (n.d.). Wildfire prevention and control. Retrieved from [http://www.wvforestry.com/fire\\_prev.cfm?menucall=fire](http://www.wvforestry.com/fire_prev.cfm?menucall=fire)
- FEMA. (2017, February 22). The National Flood Insurance Program. Retrieved from <https://www.fema.gov/national-flood-insurance-program>
- Grothaus, N. (n.d.). Causes of Terrorism. Retrieved from <http://handofreason.com/2011/featured/causes-of-terrorism>
- Geology.com. (n.d.). West Virginia physical map and West Virginia topographic map. Retrieved from <https://geology.com/topographic-physical-map/west-virginia.shtml>
- Keller, E. A., & DeVecchio, D. E. (2015). *Natural hazards. Earth's processes as hazards, disasters, and catastrophes* (4th ed.). Santa Barbara, CA: Pearson.
- National Park Service. (n.d.). Wildfire causes. Retrieved from <https://www.nps.gov/fire/wildland-fire/learning-center/fire-in-depth/wildfire-causes.cfm>
- NFIC. (n.d.). Federal firefighting costs (suppression only). Retrieved from [https://www.nifc.gov/fireInfo/fireInfo\\_documents/SuppCosts.pdf](https://www.nifc.gov/fireInfo/fireInfo_documents/SuppCosts.pdf)
- Noji, E. K. (2000). The public health consequences of disasters. *Prehospital and Disaster*



*Medicine*, 21-31.

Pauley. (n.d.). West Virginia: the mountain state. Retrieved from  
<https://www.marshall.edu/herp/pages/aboutwv.htm>

Post, J. M. (2009). Killing in the name of other gods. In *The mind of the terrorist: the psychology of terrorism from the IRA to al-Qaeda* (pp. 211-212). New York, NY: Palgrave Macmillan.

Shoaf, K. L., & Rottman, S. J. (2000). Public health impact of disasters. *Australian Journal of Emergency Management*, 58-63.

Taylor, J. C. (2013, June 3). Pendleton County. Retrieved from  
<https://www.wvencyclopedia.org/articles/1832>

Thomas, D., & Phillips, B. D. (2013). *Social vulnerability to disasters* (2nd ed.). Boca Raton, FL: CRC.

University of Wisconsin Population Health Institute (UWPHI). (2017). County health rankings and road maps. Retrieved from <http://www.countyhealthrankings.org>

USCG National Response Center. (n.d.). 2010 to 2016 reports. Retrieved from  
<http://nrc.uscg.mil/>

USDHS. (2013). *Local mitigation planning handbook*. Retrieved from FEMA website:  
<http://www.fema.gov>

US Department of Interior. (2009). *Economic consequences methodology for dam failure scenarios* (EC-2009-01). Retrieved from Bureau of Reclamation Technical Service Center website: <https://www.usbr.gov/tsc/techreferences/economics/TMEC200901.pdf>

USDHS. (2005). *Technical manual for dam owners: impacts of plants on earthen dams* (534). Retrieved from FEMA website: <https://www.fema.gov/media-library-data/20130726-1446-20490-2338/fema-534.pdf>

USDHS. (2007). *Selecting appropriate mitigation measures for floodprone structures* (551). Retrieved from FEMA website: [https://www.fema.gov/media-library-data/20130726-1609-20490-5083/fema\\_551.pdf](https://www.fema.gov/media-library-data/20130726-1609-20490-5083/fema_551.pdf)

WHO. (n.d.). Drought, technical hazard sheet. Retrieved from  
<http://www.who.int/hac/techguidance/ems/drought/en/>

WHO. (n.d.). Flooding and communicable diseases fact sheet. Retrieved from

[http://www.who.int/hac/techguidance/ems/flood\\_cds/en/](http://www.who.int/hac/techguidance/ems/flood_cds/en/)

WHO. (n.d.). Landslides, technical hazard sheet. Retrieved from  
<http://www.who.int/hac/techguidance/ems/landslides/en/>

WVDOH. (2017). Corridor H Route. Retrieved from  
<http://www.wvcorridorh.com/route/map9.html>

WV DOT. (n.d.). South Branch Valley Railroad. Retrieved from  
<https://transportation.wv.gov/rail/SBVR/Pages/default.aspx>

WV Geological and Economic Survey. *Earthquake epicenters of West Virginia (1824-2016)*

WV Geological and Economic Survey. *Geologic Map of West Virginia*

WVGES. (2016, August 8). Karst terrain potential. Retrieved from  
[http://www.wvgs.wvnet.edu/www/geology/Karst\\_Terrain\\_Potential.html](http://www.wvgs.wvnet.edu/www/geology/Karst_Terrain_Potential.html)

WVGES. (2017, May 22). WV physiographic provinces. Retrieved from  
<http://www.wvgs.wvnet.edu/www/maps/pprovinces.htm>

## APPENDIX 6

### ADOPTING RESOLUTIONS